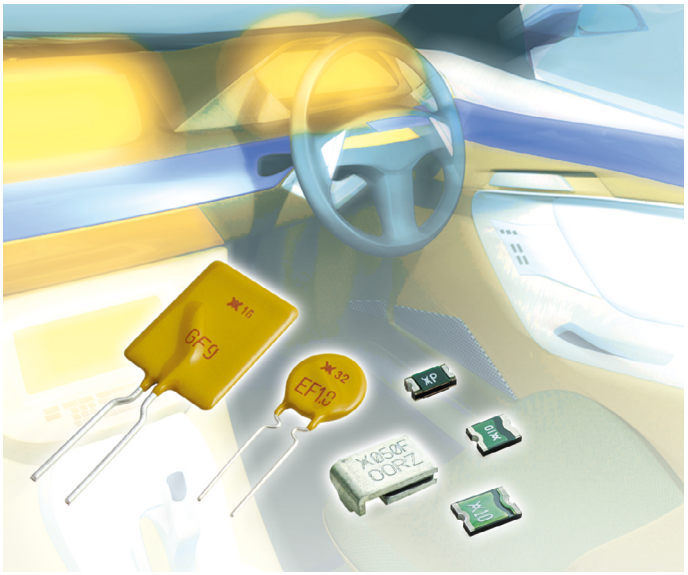
# POLYSWITCH RESETTABLE DEVICES

## Automotive Devices

Littelfuse®
Expertise Applied | Answers Delivered

We have provided PPTC resettable devices for the automotive industry for over 25 years. With the advent of TS16949 and our continued involvement in the automotive industry, Littelfuse PolySwitch team developed automotive-specific versions of PPTC devices (femtoASMDC, picoASMDC, nanoASMDC, microASMD, miniASMDC, ASMDC, AHS, ASMD, AHRF, AHEF and AGRF). These products are qualified and sold under the PS400 specification which is derived from AEC-Q200, the standard for electronic components used in the automotive industry. The key difference between these product families and other protection devices in our circuit protection product portfolio is the qualification process that is followed that includes a series of rigorous tests related to the automotive environment. As a result, they are characterized by specific additional values determined following automotive-related testing.



### BENEFITS

- Expertise from the world's leading resettable overcurrent protection manufacturer
- High-quality products from the world's largest passive component manufacturer
- Worldwide team dedicated to support automotive applications
- Wide range of dedicated automotive surface-mount and radial-leaded resettable overcurrent devices
- High-performance transient voltage protection devices

### FEATURES

- RoHS compliant
- Overcurrent and overvoltage circuit protection devices
- Resettable and single-use overcurrent devices
- Wide range of form factor and termination methods
- Products meet applicable automotive industry standards
- Devices compatible with high-volume electronics assembly

### APPLICATIONS

- Motor and motor circuit protection including power door-locks, mirrors, lumbar pumps, seats, sunroofs and windows
- Electronic Control Unit (ECU) I/O protection
- Heating, Ventilation and Cooling (HVAC) motor and I/O protection
- Telematics, infotainment and navigations systems
- Liquid Crystal Display (LCD) back-light heaters
- Power and cigarette lighter outlets, plugs and adapter/chargers
- Powered networks and buses
- Air-flow detection and overcurrent protection in HVAC and cooling fan systems
- Stall detection in express window and sunroof circuits
- Resettable overcurrent protection for power distribution, electrical centers and junction boxes
- Wire downsizing
- Motor electromagnetic interference (EMI) suppression
- Electrostatic discharge (ESD) damage protection
- Load dump and other transient voltage protection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## Table A1 — Product Series - Current Rating, Voltage Rating/Typical Resistance

| Voltage Rating | AGRF 16V | AHRF 16V | AHRF 30V | AHEF 32V | AHS 16V | ASMD 16V | ASMD 30V | ASMD 33V | ASMD 60V |
|---|---|---|---|---|---|---|---|---|---|
| **Hold Current (A)** | | | | | | | | | |
| 0.30 | — | — | — | — | — | — | — | — | 2.90Ω |
| 0.50 | — | — | 0.565Ω | 0.5650Ω | — | — | — | — | 0.90Ω |
| 0.70 | — | — | 0.385Ω | 0.3850Ω | — | — | — | — | — |
| 0.75 | — | — | — | — | — | — | 0.60Ω | — | — |
| 0.80 | — | — | — | — | 0.250Ω | — | — | — | — |
| 1.00 | — | — | 0.225Ω | 0.2250Ω | — | — | 0.30Ω | — | — |
| 1.20 | — | — | — | — | 0.245Ω | — | — | — | — |
| 1.25 | — | — | — | — | — | 0.160Ω | — | — | — |
| 1.50 | — | — | — | — | — | 0.140Ω | — | 0.149Ω | — |
| 1.60 | — | — | — | — | 0.100Ω | — | — | — | — |
| 1.85 | — | — | — | — | — | 0.079Ω | — | — | — |
| 2.00 | — | 0.0565Ω | — | — | 0.070Ω | 0.090Ω | — | — | — |
| 2.50 | — | — | — | — | — | 0.060Ω | — | — | — |
| 3.00 | — | 0.0410Ω | — | 0.0520Ω | 0.050Ω | — | — | — | — |
| 4.00 | 0.0300Ω | 0.0305Ω | — | — | — | — | — | — | — |
| 4.50 | — | 0.0290Ω | — | — | — | — | — | — | — |
| 5.00 | 0.0192Ω | — | — | 0.0200Ω | — | — | — | — | — |
| 5.50 | — | 0.0190Ω | — | — | — | — | — | — | — |
| 6.00 | 0.0145Ω | 0.0180Ω | — | — | — | — | — | — | — |
| 6.50 | — | 0.0140Ω | — | — | — | — | — | — | — |
| 7.00 | 0.0105Ω | 0.0126Ω | — | — | — | — | — | — | — |
| 7.50 | — | 0.0120Ω | — | 0.0120Ω | — | — | — | — | — |
| 8.00 | 0.0086Ω | 0.0104Ω | — | — | — | — | — | — | — |
| 9.00 | 0.0070Ω | 0.0100Ω | — | — | — | — | — | — | — |
| 10.00 | 0.0056Ω | 0.0083Ω | — | 0.0083Ω | — | — | — | — | — |
| 11.00 | 0.0050Ω | 0.0069Ω | — | — | — | — | — | — | — |
| 12.00 | 0.0046Ω | — | — | — | — | — | — | — | — |
| 13.00 | — | 0.0055Ω | — | — | — | — | — | — | — |
| 14.00 | 0.0040Ω | 0.0050Ω | — | — | — | — | — | — | — |
| 15.00 | — | 0.0050Ω | — | — | — | — | — | — | — |


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## Table A1 — Product Series - Current Rating, Voltage Rating/Typical Resistance (Cont'd)

| Voltage Rating | femtoASMDC 15V | femtoASMDC 12V | picoASMDC 15V | nanoASMDC 60V | nanoASMDC 48V | nanoASMDC 24V | nanoASMDC 16V | nanoASMDC 13.2V | microASMD 30V | microASMD 13.2V |
|---|---|---|---|---|---|---|---|---|---|---|
| **Hold Current (A)** | | | | | | | | | | |
| 0.05 | 16.90Ω | — | — | — | — | — | — | — | 26.80Ω | — |
| 0.08 | — | 8.40Ω | — | — | — | — | — | — | — | — |
| 0.10 | 8.00Ω | — | 6.25Ω | 8.30Ω | | — | — | — | 8.55Ω | — |
| 0.12 | — | — | 5.25Ω | — | 3.95Ω | — | — | — | — | — |
| 0.16 | — | — | — | — | 3.05Ω | — | — | — | — | — |
| 0.20 | — | — | — | — | — | 1.875Ω | — | — | — | — |
| 0.25 | — | — | — | — | — | — | 1.25Ω | — | — | — |
| 0.35 | — | — | — | — | — | — | 0.90Ω | — | — | — |
| 0.50 | — | — | — | — | — | — | — | 0.475Ω | — | 0.575Ω |

| Voltage Rating | miniASMDC 60V | miniASMDC 33V | miniASMDC 30V | miniASMDC 24V | miniASMDC 16V | miniASMDC 13.2V | miniASMDC 12V | ASMDC 60V | ASMDC 33V | ASMDC 24V |
|---|---|---|---|---|---|---|---|---|---|---|
| **Hold Current (A)** | | | | | | | | | | |
| 0.10 | 6.70Ω | — | — | — | — | — | — | — | — | — |
| 0.14 | 3.75Ω | — | — | — | — | — | — | — | — | — |
| 0.20 | — | — | 1.950Ω | — | — | — | — | — | — | — |
| 0.30 | — | — | 0.975Ω | — | — | — | — | 1.850Ω | — | — |
| 0.50 | — | — | — | 0.575Ω | — | — | — | 0.675Ω | — | — |
| 0.75 | — | 0.25Ω | — | 0.190Ω | — | 0.280Ω | — | — | 0.355Ω | — |
| 1.10 | — | — | — | 0.120Ω | 0.1200Ω | — | — | — | — | — |
| 1.25 | — | — | — | — | 0.0950Ω | — | — | — | 0.145Ω | — |
| 1.50 | — | — | — | 0.080Ω | 0.0750Ω | — | 0.075Ω | — | — | — |
| 1.85 | — | — | — | — | — | — | — | — | 0.100Ω | — |
| 2.00 | — | — | — | — | 0.0525Ω | — | — | — | — | — |
| 2.60 | — | — | — | — | 0.0325Ω | 0.0325Ω | 0.031Ω | — | — | — |
| 3.00 | — | — | — | — | — | — | — | — | — | 0.0435Ω |


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## Table A2 — Thermal Derating [Hold Current (A) at Ambient Temperature (°C)]

| Part Number | Maximum Ambient Temperature | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C | 125°C |
| **AGRF 16V — Radial-leaded** | | | | | | | | | | | |
| AGRF400 | 5.9 | 5.3 | 4.8 | 4.1 | 4.0 | 3.5 | 3.2 | 2.8 | 2.5 | 1.9 | — |
| AGRF500 | 7.3 | 6.6 | 6.0 | 5.2 | 5.0 | 4.4 | 4.0 | 3.6 | 3.1 | 2.4 | — |
| AGRF600 | 8.8 | 8.0 | 7.2 | 6.2 | 6.0 | 5.2 | 4.8 | 4.2 | 3.8 | 2.8 | — |
| AGRF700 | 10.3 | 9.3 | 8.4 | 7.3 | 7.0 | 6.2 | 5.6 | 5.0 | 4.4 | 3.3 | — |
| AGRF800 | 11.7 | 10.7 | 9.6 | 8.3 | 8.0 | 6.9 | 6.4 | 5.6 | 5.1 | 3.7 | — |
| AGRF900 | 13.2 | 11.9 | 10.7 | 9.4 | 9.0 | 7.9 | 7.2 | 6.4 | 5.6 | 4.2 | — |
| AGRF1000 | 14.7 | 13.3 | 12.0 | 10.3 | 10.0 | 8.7 | 8.0 | 7.0 | 6.3 | 4.7 | — |
| AGRF1100 | 16.1 | 14.6 | 13.1 | 11.5 | 11.0 | 9.7 | 8.8 | 7.8 | 6.9 | 5.2 | — |
| AGRF1200 | 17.6 | 16.0 | 14.4 | 12.4 | 12.0 | 10.4 | 9.6 | 8.4 | 7.6 | 5.6 | — |
| AGRF1400 | 20.5 | 18.7 | 16.8 | 14.5 | 14.0 | 12.1 | 11.2 | 9.8 | 8.9 | 6.5 | — |
| **AHRF (High Temperature) 30V — Radial-leaded** | | | | | | | | | | | |
| AHRF050 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.1 |
| AHRF070 | 1.0 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.4 | 0.2 |
| AHRF100 | 1.4 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.2 |
| **AHRF (High Temperature) 16V — Radial-leaded** | | | | | | | | | | | |
| AHRF200 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.8 | 1.6 | 1.5 | 1.3 | 1.1 | 0.5 |
| AHRF300 | 4.1 | 3.7 | 3.4 | 3.1 | 3.0 | 2.7 | 2.4 | 2.2 | 2.0 | 1.7 | 0.7 |
| AHRF400 | 5.6 | 5.1 | 4.7 | 4.2 | 4.0 | 3.6 | 3.3 | 3.0 | 2.7 | 2.3 | 1.0 |
| AHRF450 | 6.1 | 5.6 | 5.1 | 4.6 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.5 | 1.1 |
| AHRF550 | 7.5 | 6.9 | 6.2 | 5.7 | 5.5 | 4.9 | 4.4 | 4.0 | 3.7 | 3.1 | 1.4 |
| AHRF600 | 8.2 | 7.5 | 6.8 | 6.2 | 6.0 | 5.3 | 4.9 | 4.4 | 4.0 | 3.3 | 1.5 |
| AHRF650 | 8.8 | 8.1 | 7.4 | 6.7 | 6.5 | 5.7 | 5.3 | 4.8 | 4.3 | 3.6 | 1.6 |
| AHRF700 | 9.5 | 8.7 | 8.0 | 7.2 | 7.0 | 6.2 | 5.6 | 5.2 | 4.7 | 3.9 | 1.7 |
| AHRF750 | 10.2 | 9.4 | 8.6 | 7.7 | 7.5 | 6.6 | 6.1 | 5.6 | 5.0 | 4.1 | 1.9 |
| AHRF800 | 10.9 | 10.0 | 9.1 | 8.2 | 8.0 | 7.1 | 6.4 | 5.9 | 5.3 | 4.4 | 2.0 |
| AHRF900 | 12.2 | 11.2 | 10.2 | 9.3 | 9.0 | 8.0 | 7.2 | 6.6 | 6.0 | 5.0 | 2.2 |
| AHRF1000 | 13.6 | 12.5 | 11.4 | 10.3 | 10.0 | 8.8 | 8.1 | 7.4 | 6.6 | 5.5 | 2.5 |
| AHRF1100 | 14.9 | 13.7 | 12.5 | 11.3 | 11.0 | 9.7 | 8.8 | 8.1 | 7.3 | 6.1 | 2.7 |
| AHRF1300 | 17.7 | 16.3 | 14.8 | 13.4 | 13.0 | 11.4 | 10.5 | 9.6 | 8.6 | 7.2 | 3.3 |
| AHRF1400 | 19.0 | 17.5 | 15.9 | 14.4 | 14.0 | 12.4 | 11.2 | 10.3 | 9.3 | 7.8 | 3.5 |
| AHRF1500 | 20.4 | 18.8 | 17.1 | 15.5 | 15.0 | 13.2 | 12.1 | 11.1 | 9.9 | 8.3 | 3.8 |
| **AHEF (High Temperature) 32V — Radial-leaded** | | | | | | | | | | | |
| AHEF050 | 0.7 | 0.6 | 0.60 | 0.5 | 0.5 | 0.4 | 0.400 | 0.40 | 0.30 | 0.300 | 0.1 |
| AHEF070 | 1.0 | 0.9 | 0.80 | 0.7 | 0.7 | 0.6 | 0.600 | 0.50 | 0.50 | 0.400 | 0.2 |
| AHEF100 | 1.4 | 1.2 | 1.10 | 1.0 | 1.0 | 0.9 | 0.800 | 0.70 | 0.70 | 0.600 | 0.2 |
| AHEF300 | 4.1 | 3.8 | 3.42 | 3.1 | 3.0 | 2.7 | 2.430 | 2.22 | 1.98 | 1.650 | 0.6 |
| AHEF500 | 6.8 | 6.3 | 5.70 | 5.2 | 5.0 | 4.5 | 4.050 | 3.70 | 3.30 | 2.750 | 1.0 |
| AHEF750 | 10.2 | 9.4 | 8.55 | 7.7 | 7.5 | 6.7 | 6.075 | 5.55 | 4.95 | 4.125 | 1.5 |
| AHEF1000 | 13.6 | 12.5 | 11.40 | 10.3 | 10.0 | 8.9 | 8.100 | 7.40 | 6.60 | 5.500 | 2.0 |
| **AHS (High Temperature) 16V — Surface-mount** | | | | | | | | | | | |
| AHS080-2018 | 1.20 | 1.04 | 0.90 | 0.8 | 0.77 | 0.68 | 0.62 | 0.60 | 0.53 | 0.46 | 0.26 |
| AHS120 | 1.72 | 1.54 | 1.36 | 1.2 | 1.14 | 1.01 | 0.92 | 0.83 | 0.74 | 0.61 | 0.25 |
| AHS160 | 2.15 | 1.96 | 1.78 | 1.6 | 1.55 | 1.42 | 1.33 | 1.24 | 1.15 | 1.01 | 0.64 |
| AHS200 | 2.90 | 2.50 | 2.20 | 2.0 | 1.94 | 1.80 | 1.75 | 1.70 | 1.40 | 1.18 | 0.67 |
| AHS300 | 4.20 | 3.80 | 3.70 | 3.0 | 2.92 | 2.63 | 2.44 | 2.10 | 2.00 | 1.76 | 1.00 |


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## Table A2 — Thermal Derating [Hold Current (A) at Ambient Temperature (°C)] (Cont'd)

| Part Number | Maximum Ambient Temperature | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C | 125°C |
| **ASMD 16-60V — Surface-mount** | | | | | | | | | | | |
| ASMD030F | 0.35 | 0.31 | 0.27 | 0.23 | 0.22 | 0.19 | 0.17 | 0.15 | 0.13 | 0.11 | — |
| ASMD050F | 0.59 | 0.53 | 0.46 | 0.39 | 0.37 | 0.33 | 0.29 | 0.26 | 0.23 | 0.18 | — |
| ASMD075F | 0.91 | 0.81 | 0.71 | 0.60 | 0.58 | 0.50 | 0.45 | 0.40 | 0.35 | 0.28 | — |
| ASMD100F | 1.37 | 1.22 | 1.06 | 0.90 | 0.86 | 0.76 | 0.68 | 0.60 | 0.52 | 0.41 | — |
| ASMD125F | 1.58 | 1.40 | 1.23 | 1.04 | 1.00 | 0.87 | 0.78 | 0.70 | 0.60 | 0.48 | — |
| ASMD150F | 1.93 | 1.70 | 1.50 | 1.27 | 1.22 | 1.07 | 0.95 | 0.85 | 0.74 | 0.58 | — |
| ASMD150F/33 | 1.96 | 1.73 | 1.50 | 1.26 | 1.20 | 1.03 | 0.91 | 0.80 | 0.68 | 0.51 | — |
| ASMD185F | 2.93 | 2.58 | 2.30 | 1.93 | 1.85 | 1.62 | 1.44 | 1.30 | 1.12 | 0.88 | — |
| ASMD200F | 2.63 | 2.34 | 2.04 | 1.73 | 1.66 | 1.45 | 1.30 | 1.16 | 1.00 | 0.80 | — |
| ASMD250F | 3.00 | 2.66 | 2.32 | 1.97 | 1.89 | 1.65 | 1.48 | 1.32 | 1.14 | 0.91 | — |
| **femtoASMDC 12-15V — Surface-mount** | | | | | | | | | | | |
| femtoASMDC005F | 0.08 | 0.07 | 0.06 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | — |
| femtoASMDC008F | 0.13 | 0.11 | 0.10 | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 | 0.05 | 0.04 | — |
| femtoASMDC010F/15 | 0.16 | 0.14 | 0.12 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.04 | — |
| **picoASMD 15V — Surface-mount** | | | | | | | | | | | |
| picoASMDC010S | 0.17 | 0.15 | 0.13 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | — |
| picoASMDC012S | 0.20 | 0.17 | 0.15 | 0.13 | 0.12 | 0.10 | 0.09 | 0.08 | 0.07 | 0.05 | — |
| **nanoASMDC 13.2-48V — Surface-mount** | | | | | | | | | | | |
| nanoASMDC010F | 0.15 | 0.14 | 0.12 | 0.10 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | — |
| nanoASMDC012F | 0.20 | 0.17 | 0.15 | 0.13 | 0.12 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | — |
| nanoASMDC016F | 0.21 | 0.20 | 0.18 | 0.16 | 0.16 | 0.14 | 0.13 | 0.12 | 0.11 | 0.09 | — |
| nanoASMDC020F | 0.34 | 0.30 | 0.26 | 0.22 | 0.20 | 0.17 | 0.15 | 0.13 | 0.11 | 0.08 | — |
| nanoASMDC025F | 0.38 | 0.33 | 0.30 | 0.26 | 0.25 | 0.22 | 0.20 | 0.19 | 0.16 | 0.11 | — |
| nanoASMDC035F | 0.58 | 0.51 | 0.44 | 0.38 | 0.35 | 0.31 | 0.28 | 0.24 | 0.21 | 0.16 | — |
| nanoASMDC050F/13.2 | 0.78 | 0.69 | 0.61 | 0.52 | 0.50 | 0.44 | 0.39 | 0.35 | 0.30 | 0.24 | — |
| **microASMD 13.2-30V — Surface-mount** | | | | | | | | | | | |
| microASMD005F | 0.08 | 0.07 | 0.06 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | — |
| microASMD010F | 0.15 | 0.13 | 0.12 | 0.10 | 0.10 | 0.09 | 0.08 | 0.06 | 0.06 | 0.05 | — |
| microASMD050F | 0.76 | 0.66 | 0.58 | 0.50 | 0.48 | 0.42 | 0.38 | 0.35 | 0.29 | 0.23 | — |
| **miniASMDC 12-60V — Surface-mount** | | | | | | | | | | | |
| miniASMDC010F | 0.17 | 0.15 | 0.13 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.04 | — |
| miniASMDC014F | 0.23 | 0.20 | 0.17 | 0.14 | 0.13 | 0.11 | 0.10 | 0.09 | 0.07 | 0.05 | — |
| miniASMDC020F | 0.30 | 0.27 | 0.23 | 0.20 | 0.19 | 0.17 | 0.15 | 0.13 | 0.12 | 0.09 | — |
| miniASMDC030F | 0.49 | 0.44 | 0.39 | 0.32 | 0.30 | 0.27 | 0.24 | 0.22 | 0.18 | 0.14 | — |
| miniASMDC050F | 0.59 | 0.57 | 0.55 | 0.50 | 0.48 | 0.45 | 0.43 | 0.35 | 0.30 | 0.23 | — |
| miniASMDC075F | 1.10 | 0.99 | 0.87 | 0.75 | 0.72 | 0.63 | 0.57 | 0.49 | 0.45 | 0.35 | — |
| miniASMDC075F/24 | 1.50 | 1.25 | 1.00 | 0.75 | 0.73 | 0.65 | 0.60 | 0.55 | 0.50 | 0.43 | — |
| miniASMDC075F/33 | 1.09 | 0.98 | 0.87 | 0.77 | 0.75 | 0.66 | 0.61 | 0.55 | 0.50 | 0.41 | — |
| miniASMDC110F/16 | 1.68 | 1.49 | 1.30 | 1.10 | 1.05 | 0.92 | 0.83 | 0.75 | 0.64 | 0.50 | — |
| miniASMDC110F/24 | 2.00 | 1.70 | 1.40 | 1.10 | 1.06 | 0.95 | 0.88 | 0.80 | 0.73 | 0.61 | — |
| miniASMDC125F/16 | 2.00 | 1.69 | 1.47 | 1.25 | 1.17 | 1.03 | 0.92 | 0.90 | 0.69 | 0.53 | — |
| miniASMDC150F/12 | 2.40 | 2.10 | 1.80 | 1.50 | 1.44 | 1.25 | 1.13 | 1.00 | 0.88 | 0.69 | — |
| miniASMDC150F/16 | 2.40 | 2.10 | 1.80 | 1.50 | 1.44 | 1.25 | 1.13 | 1.00 | 0.88 | 0.69 | — |
| miniASMDC150F/24 | 2.10 | 1.90 | 1.70 | 1.50 | 1.44 | 1.25 | 1.13 | 1.00 | 0.88 | 0.69 | — |


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## Table A2 — Thermal Derating [Hold Current (A) at Ambient Temperature (°C)] (Cont'd)

| Part Number | Maximum Ambient Temperature | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | -40°C | -20°C | 0°C | 20°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C | 125°C |
| **miniASMDC 12-60V — Surface-mount** | | | | | | | | | | | |
| miniASMDC200F/16 | 3.07 | 2.74 | 2.40 | 2.07 | 2.00 | 1.74 | 1.57 | 1.40 | 1.24 | 0.99 | — |
| miniASMDC260F/12 | 3.40 | 3.16 | 3.00 | 2.60 | 2.54 | 2.32 | 2.18 | 2.00 | 1.90 | 1.69 | — |
| miniASMDC260F/13.2 | 3.40 | 3.16 | 3.00 | 2.60 | 2.54 | 2.32 | 2.18 | 2.00 | 1.90 | 1.69 | — |
| miniASMDC260F/16 | 3.50 | 3.20 | 3.00 | 2.60 | 2.53 | 2.30 | 2.15 | 2.00 | 1.85 | 1.63 | — |
| **ASMDC 24-60V — Surface-mount** | | | | | | | | | | | |
| ASMDC030F | 0.49 | 0.43 | 0.37 | 0.31 | 0.30 | 0.25 | 0.22 | 0.19 | 0.16 | 0.12 | — |
| ASMDC050F | 0.86 | 0.75 | 0.65 | 0.54 | 0.50 | 0.43 | 0.37 | 0.32 | 0.26 | 0.18 | — |
| ASMDC075F | 1.17 | 1.04 | 0.90 | 0.77 | 0.75 | 0.64 | 0.57 | 0.50 | 0.44 | 0.34 | — |
| ASMDC125F/33 | 2.02 | 1.78 | 1.55 | 1.31 | 1.25 | 1.08 | 0.96 | 0.84 | 0.72 | 0.54 | — |
| ASMDC185F/33 | 2.83 | 2.50 | 2.20 | 1.85 | 1.74 | 1.53 | 1.37 | 1.22 | 1.04 | 0.80 | — |
| ASMDC300F/24 | 4.70 | 4.19 | 3.70 | 3.17 | 3.00 | 2.66 | 2.41 | 2.20 | 1.90 | 1.50 | — |


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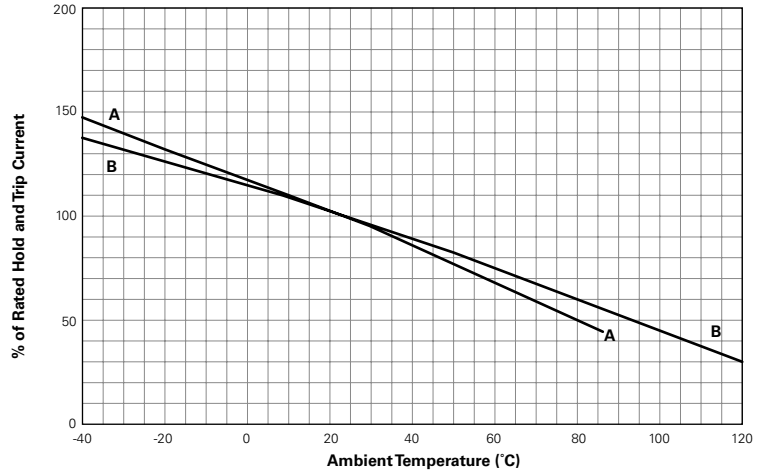
## Figures A1-A3 - Thermal Derating Curves for Automotive Devices (Cont'd)

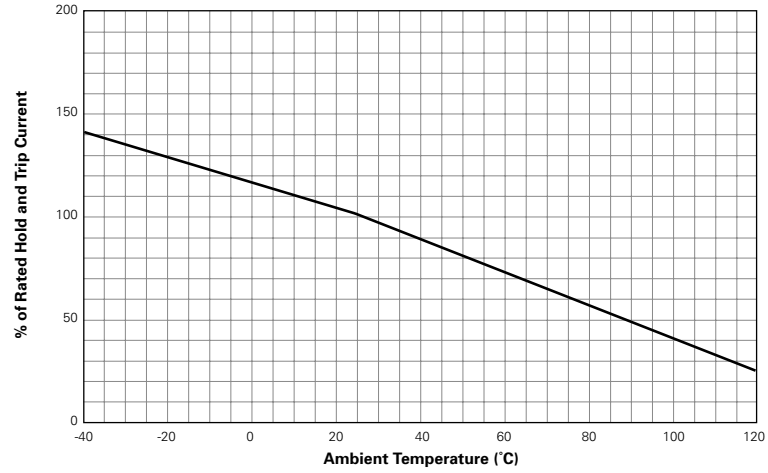
**A = AGRF**
**B = AHRF**

**Figure A1**



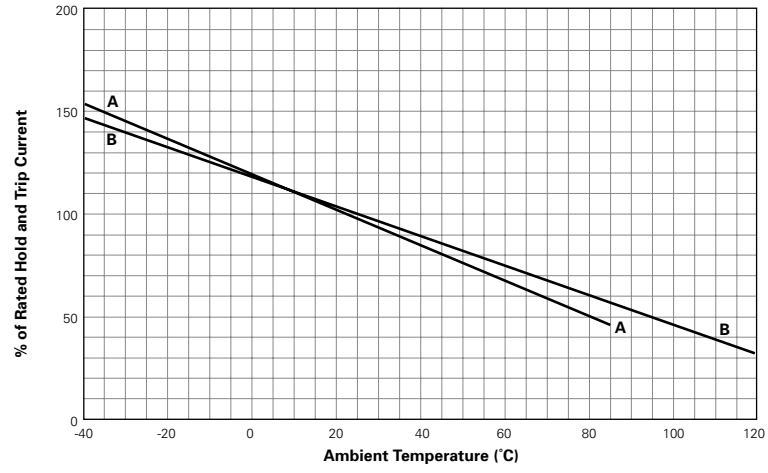

**AHEF**

**Figure A2**




**A = ASMD, femtoASMDC, picoASMDC, nanoASMDC microASMD, miniASMDC, ASMDC**
**B = AHS**

**Figure A3**





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## Table A3 — Electrical Characteristics for Automotive Devices

| Part Number | $I_H$(A)@ $R_{1MAX}$ | $I_H$(A)@ $R_{aMAX}$ | $I_T$ (A) | $V_{MAX}$ ($V_{DC}$) | $I_{MAX}$ (A) | $P_{D\,Typ}$ (W) | Max. Time-to-trip (A) | Max. Time-to-trip (s) | $R_{MIN}$ (Ω) | $R_{1MAX}$ (Ω) | $R_{aMAX}$ (Ω) | Figure for Dimensions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AGRF 16V — Radial-leaded** | | | | | | | | | | | | |
| AGRF400 | 4.0 | 3.0 | 7.6 | 16 | 100 | 2.5 | 20.0 | 2.0 | 0.0186 | 0.0610 | 0.0850 | A4, A7, A8 |
| AGRF500 | 5.0 | 4.3 | 9.4 | 16 | 100 | 2.7 | 25.0 | 2.5 | 0.0140 | 0.0340 | 0.0480 | A4, A7, A8 |
| AGRF600 | 6.0 | 5.3 | 10.7 | 16 | 100 | 2.8 | 30.0 | 3.5 | 0.0095 | 0.0280 | 0.0320 | A4, A7, A8 |
| AGRF700 | 7.0 | 6.5 | 13.2 | 16 | 100 | 3.0 | 35.0 | 4.0 | 0.0066 | 0.0200 | 0.0220 | A4, A7, A8 |
| AGRF800 | 8.0 | 7.6 | 15.0 | 16 | 100 | 3.2 | 40.0 | 5.5 | 0.0049 | 0.0175 | 0.0181 | A4, A7, A8 |
| AGRF900 | 9.0 | 8.6 | 16.5 | 16 | 100 | 3.4 | 45.0 | 6.0 | 0.0041 | 0.0135 | 0.0140 | A4, A7, A8 |
| AGRF1000 | 10.0 | 9.6 | 18.5 | 16 | 100 | 3.6 | 50.0 | 7.0 | 0.0034 | 0.0102 | 0.0106 | A4, A7, A8 |
| AGRF1100 | 11.0 | 10.5 | 20.3 | 16 | 100 | 3.7 | 55.0 | 7.5 | 0.0033 | 0.0089 | 0.0093 | A4, A7, A8 |
| AGRF1200 | 12.0 | 11.5 | 22.1 | 16 | 100 | 4.2 | 60.0 | 8.0 | 0.0030 | 0.0086 | 0.0091 | A4, A7, A8 |
| AGRF1400 | 14.0 | 13.0 | 27.3 | 16 | 100 | 4.6 | 70.0 | 9.0 | 0.0022 | 0.0064 | 0.0067 | A4, A7, A8 |
| **AHRF (High Temperature) 30V — Radial-leaded** | | | | | | | | | | | | |
| AHRF050 | 0.5 | 0.5 | 1.0 | 30 | 40 | 0.9 | 2.5 | 3.0 | 0.3500 | 1.100 | 1.100 | A7, A8, A9 |
| AHRF070 | 0.7 | 0.7 | 1.4 | 30 | 40 | 1.4 | 3.5 | 3.2 | 0.2300 | 0.800 | 0.800 | A7, A8, A10 |
| AHRF100 | 1.0 | 1.0 | 1.9 | 30 | 40 | 1.4 | 5.0 | 6.2 | 0.1500 | 0.430 | 0.430 | A7, A8, A9 |
| **AHRF (High Temperature) 16V — Radial-leaded** | | | | | | | | | | | | |
| AHRF200 | 2.0 | 2.0 | 3.8 | 16 | 100 | 1.4 | 10.0 | 4.8 | 0.0390 | 0.1100 | 0.1100 | A7, A8, A9 |
| AHRF300 | 3.0 | 3.0 | 6.5 | 16 | 100 | 3.0 | 15.0 | 5.0 | 0.0290 | 0.0790 | 0.0790 | A4, A7, A8 |
| AHRF400 | 4.0 | 4.0 | 7.4 | 16 | 100 | 3.3 | 20.0 | 5.0 | 0.0210 | 0.0600 | 0.0600 | A4, A7, A8 |
| AHRF450 | 4.5 | 4.5 | 8.7 | 16 | 100 | 3.6 | 22.5 | 4.0 | 0.0170 | 0.0540 | 0.0540 | A4, A7, A8 |
| AHRF550 | 5.5 | 5.5 | 10.0 | 16 | 100 | 3.5 | 27.5 | 6.0 | 0.0130 | 0.0370 | 0.0370 | A4, A7, A8 |
| AHRF600 | 6.0 | 6.0 | 12.0 | 16 | 100 | 4.1 | 30.0 | 6.5 | 0.0100 | 0.0320 | 0.0320 | A4, A7, A8 |
| AHRF650 | 6.5 | 6.5 | 13.7 | 16 | 100 | 4.3 | 32.5 | 7.0 | 0.0090 | 0.0260 | 0.0260 | A4, A7, A8 |
| AHRF700 | 7.0 | 7.0 | 13.1 | 16 | 100 | 4.0 | 35.0 | 7.0 | 0.0087 | 0.0250 | 0.0250 | A4, A7, A8 |
| AHRF750 | 7.5 | 7.5 | 14.8 | 16 | 100 | 4.5 | 37.5 | 8.0 | 0.0074 | 0.0220 | 0.0220 | A4, A7, A8 |
| AHRF800 | 8.0 | 8.0 | 15.0 | 16 | 100 | 4.2 | 40.0 | 8.0 | 0.0072 | 0.0200 | 0.0200 | A4, A7, A8 |
| AHRF900 | 9.0 | 9.0 | 18.5 | 16 | 100 | 5.0 | 45.0 | 11.5 | 0.0061 | 0.0170 | 0.0170 | A4, A7, A8 |
| AHRF1000 | 10.0 | 10.0 | 20.5 | 16 | 100 | 5.3 | 50.0 | 10.5 | 0.0051 | 0.0150 | 0.0150 | A4, A7, A8 |
| AHRF1100 | 11.0 | 11.0 | 21.2 | 16 | 100 | 5.5 | 55.0 | 11.0 | 0.0048 | 0.0130 | 0.0130 | A4, A7, A8 |
| AHRF1300 | 13.0 | 13.0 | 27.0 | 16 | 100 | 6.9 | 65.0 | 15.0 | 0.0034 | 0.0100 | 0.0100 | A4, A7, A8 |
| AHRF1400 | 14.0 | 14.0 | 28.3 | 16 | 100 | 6.9 | 70.0 | 15.5 | 0.0029 | 0.0090 | 0.0090 | A4, A7, A8 |
| AHRF1500 | 15.0 | 15.0 | 33.0 | 16 | 100 | 7.0 | 75.0 | 20.0 | 0.0027 | 0.0092 | 0.0092 | A4, A7, A8 |


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## Table A3 — Electrical Characteristics (Cont'd)

| Part Number | $I_H$(A)@ $R_{1MAX}$ | $I_H$(A)@ $R_{aMAX}$ | $I_T$ (A) | $V_{MAX}$ ($V_{DC}$) | $I_{MAX}$ (A) | $P_{D\,Typ}$ (W) | Max. Time-to-trip (A) | Max. Time-to-trip (s) | $R_{MIN}$ (Ω) | $R_{1MAX}$ (Ω) | $R_{aMAX}$ (Ω) | Figure for Dimensions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AHEF (High Temperature) 32V — Radial-leaded** | | | | | | | | | | | | |
| AHEF050 | 0.5 | 0.5 | 1.0 | 32 | 100 | 0.9 | 2.5 | 3.0 | 0.3500 | 1.100 | 1.100 | A7, A8, A9 |
| AHEF070 | 0.7 | 0.7 | 1.4 | 32 | 100 | 1.4 | 3.5 | 3.2 | 0.2300 | 0.800 | 0.800 | A7, A9, A10 |
| AHEF100 | 1.0 | 1.0 | 1.9 | 32 | 100 | 1.4 | 5.0 | 6.2 | 0.1500 | 0.430 | 0.430 | A7, A8, A9 |
| AHEF300 | 3.0 | 3.0 | 6.0 | 32 | 100 | 3.2 | 15.0 | 5.0 | 0.0350 | 0.110 | 0.110 | A7, A8, A11 |
| AHEF500 | 5.0 | 5.0 | 10.0 | 32 | 100 | 5.3 | 25.0 | 9.0 | 0.0150 | 0.040 | 0.040 | A7, A8, A11 |
| AHEF750 | 7.5 | 7.5 | 15.0 | 32 | 100 | 6.5 | 37.5 | 13.0 | 0.0074 | 0.023 | 0.023 | A7, A8, A11 |
| AHEF1000 | 10.0 | 10.0 | 20.0 | 32 | 100 | 7.0 | 50.0 | 15.0 | 0.0060 | 0.016 | 0.016 | A7, A8, A11 |
| **AHS (High Temperature) 16V — Surface-mount** | | | | | | | | | | | | |
| AHS080-2018 | 0.80 | 0.80 | 2.00 | 16 | 70 | 1.5 | 8.0 | 9.0 | 0.130 | 0.550 | 0.550 | A5 |
| AHS120 | 1.20 | 1.20 | 2.30 | 16 | 50 | 2.2 | 8.0 | 2.0 | 0.150 | 0.340 | 0.340 | A6 |
| AHS160 | 1.60 | 1.60 | 3.20 | 16 | 70 | 2.2 | 8.0 | 15.0 | 0.050 | 0.150 | 0.150 | A6 |
| AHS200 | 2.00 | 2.00 | 4.00 | 16 | 70 | 2.3 | 8.0 | 13.4 | 0.050 | 0.140 | 0.140 | A6 |
| AHS300 | 3.00 | 3.00 | 6.00 | 16 | 70 | 3.0 | 15.0 | 8.0 | 0.024 | 0.083 | 0.083 | A6 |
| **ASMD 16-60V — Surface-mount** | | | | | | | | | | | | |
| ASMD030F | 0.23 | 0.23 | 0.59 | 60 | 10 | 1.1 | 1.15 | 12.0 | 0.980 | 4.800 | 4.800 | A6 |
| ASMD050F | 0.37 | 0.37 | 0.98 | 60 | 10 | 1.7 | 1.95 | 20.0 | 0.290 | 1.400 | 1.400 | A6 |
| ASMD075F | 0.60 | 0.60 | 1.48 | 30 | 40 | 1.1 | 3.00 | 20.0 | 0.290 | 1.000 | 1.000 | A6 |
| ASMD100F | 0.90 | 0.90 | 2.16 | 30 | 40 | 1.1 | 4.50 | 20.0 | 0.098 | 0.480 | 0.480 | A6 |
| ASMD125F | 1.04 | 1.04 | 2.46 | 16 | 40 | 1.1 | 5.20 | 20.0 | 0.057 | 0.250 | 0.250 | A6 |
| ASMD150F | 1.27 | 1.27 | 2.95 | 16 | 40 | 1.2 | 6.35 | 25.0 | 0.049 | 0.250 | 0.250 | A6 |
| ASMD150F/33 | 1.20 | 1.20 | 2.88 | 33 | 40 | 1.9 | 6.00 | 14.0 | 0.068 | 0.230 | 0.230 | A6 |
| ASMD185F | 1.85 | 1.85 | 3.70 | 16 | 40 | 1.5 | 9.25 | 11.3 | 0.032 | 0.126 | 0.126 | A6 |
| ASMD200F | 1.73 | 1.73 | 3.93 | 16 | 40 | 1.2 | 8.65 | 30.0 | 0.050 | 0.120 | 0.120 | A6 |
| ASMD250F | 1.97 | 1.97 | 5.00 | 16 | 40 | 1.2 | 9.85 | 30.0 | 0.035 | 0.085 | 0.085 | A6 |
| **femtoASMDC 12-15V — Surface-mount** | | | | | | | | | | | | |
| femtoASMDC005F | 0.05 | 0.05 | 0.15 | 15 | 10 | 0.50 | 0.50 | 0.10 | 3.80 | 30.00 | 30.00 | A12 |
| femtoASMDC008F | 0.08 | 0.08 | 0.20 | 12 | 10 | 0.50 | 0.60 | 0.10 | 2.80 | 14.00 | 14.00 | A12 |
| femtoASMDC010F/15 | 0.10 | 0.10 | 0.30 | 15 | 10 | 0.50 | 0.70 | 0.10 | 2.00 | 14.00 | 14.00 | A12 |
| **picoASMD 15V — Surface-mount** | | | | | | | | | | | | |
| picoASMDC010S | 0.10 | 0.10 | 0.30 | 15 | 20 | 0.50 | 0.50 | 0.60 | 1.50 | 11.00 | 11.00 | A12 |
| picoASMDC012S | 0.12 | 0.12 | 0.30 | 15 | 20 | 0.50 | 1.00 | 0.10 | 1.50 | 9.00 | 9.00 | A12 |
| **nanoASMDC 13.2-48V — Surface-mount** | | | | | | | | | | | | |
| nanoASMDC010F | 0.10 | 0.10 | 0.25 | 60 | 10 | 0.80 | 0.50 | 1.00 | 1.60 | 15.00 | 15.00 | A12 |
| nanoASMDC012F | 0.12 | 0.12 | 0.39 | 48 | 10 | 0.50 | 1.00 | 0.20 | 1.40 | 6.50 | 6.50 | A12 |
| nanoASMDC016F | 0.16 | 0.16 | 0.45 | 48 | 10 | 0.50 | 1.00 | 0.30 | 1.10 | 5.00 | 5.00 | A12 |
| nanoASMDC020F | 0.20 | 0.20 | 0.42 | 24 | 100 | 0.60 | 8.00 | 0.10 | 0.65 | 3.10 | 3.10 | A12 |
| nanoASMDC025F | 0.25 | 0.25 | 0.58 | 16 | 100 | 0.60 | 8.00 | 0.01 | 0.40 | 2.10 | 2.10 | A12 |
| nanoASMDC035F | 0.35 | 0.35 | 0.75 | 16 | 20 | 0.60 | 3.50 | 0.10 | 0.45 | 1.35 | 1.35 | A12 |
| nanoASMDC050F/13.2 | 0.50 | 0.50 | 1.10 | 13.2 | 70 | 0.80 | 8.00 | 0.10 | 0.20 | 0.75 | 0.75 | A12 |
| **microASMD 13.2-30V— Surface-mount** | | | | | | | | | | | | |
| microASMD005F | 0.05 | 0.05 | 0.15 | 30 | 10 | 1.00 | 0.25 | 1.50 | 3.60 | 50.00 | 50.00 | A12 |
| microASMD010F | 0.10 | 0.10 | 0.25 | 30 | 10 | 0.80 | 0.50 | 1.00 | 2.10 | 15.00 | 15.00 | A12 |
| microASMD050F | 0.50 | 0.50 | 1.00 | 13.2 | 40 | 0.80 | 8.00 | 0.05 | 0.25 | 0.90 | 0.90 | A12 |


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## Table A3 — Electrical Characteristics (Cont'd)

| Part Number | $I_H$(A)@ $R_{1MAX}$ | $I_H$(A)@ $R_{aMAX}$ | $I_T$ (A) | $V_{MAX}$ ($V_{DC}$) | $I_{MAX}$ (A) | $P_{DTyp}$ (W) | Max. Time-to-trip (A) | Max. Time-to-trip (s) | $R_{MIN}$ (Ω) | $R_{1MAX}$ (Ω) | $R_{aMAX}$ (Ω) | Figure for Dimensions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **miniASMDC 12-60V — Surface-mount** | | | | | | | | | | | | |
| miniASMDC010F | 0.10 | 0.10 | 0.30 | 60 | 40 | 0.75 | 0.50 | 5.00 | 0.70 | 12.70 | 12.70 | A12 |
| miniASMDC014F | 0.14 | 0.14 | 0.28 | 60 | 10 | 0.75 | 8.00 | 0.01 | 1.50 | 6.00 | 6.00 | A12 |
| miniASMDC020F | 0.20 | 0.20 | 0.40 | 30 | 10 | 0.80 | 8.00 | 0.02 | 0.60 | 3.30 | 3.30 | A12 |
| miniASMDC030F | 0.30 | 0.30 | 0.60 | 30 | 40 | 0.80 | 8.00 | 0.10 | 0.20 | 1.75 | 1.75 | A12 |
| miniASMDC050F | 0.50 | 0.50 | 1.00 | 24 | 100 | 0.80 | 8.00 | 0.15 | 0.15 | 1.00 | 1.00 | A12 |
| miniASMDC075F | 0.75 | 0.75 | 1.50 | 13.2 | 100 | 1.00 | 8.00 | 0.20 | 0.11 | 0.45 | 0.45 | A12 |
| miniASMDC075F/24 | 0.75 | 0.75 | 1.50 | 24 | 40 | 0.80 | 8.00 | 0.30 | 0.09 | 0.29 | 0.29 | A12 |
| miniASMDC075F/33 | 0.75 | 0.75 | 1.60 | 33 | 100 | 1.00 | 8.00 | 1.00 | 0.11 | 0.39 | 0.39 | A12 |
| miniASMDC110F/16 | 1.10 | 1.10 | 2.20 | 16 | 100 | 0.80 | 8.00 | 0.30 | 0.06 | 0.18 | 0.18 | A12 |
| miniASMDC110F/24 | 1.10 | 1.10 | 2.20 | 24 | 20 | 0.80 | 8.00 | 0.50 | 0.06 | 0.18 | 0.18 | A12 |
| miniASMDC125F/16 | 1.25 | 1.25 | 2.50 | 16 | 100 | 0.80 | 8.00 | 0.40 | 0.05 | 0.14 | 0.14 | A12 |
| miniASMDC150F/12 | 1.50 | 1.50 | 2.80 | 12 | 100 | 0.80 | 8.00 | 0.50 | 0.04 | 0.11 | 0.11 | A12 |
| miniASMDC150F/16 | 1.50 | 1.50 | 2.80 | 16 | 100 | 0.80 | 8.00 | 0.50 | 0.04 | 0.11 | 0.11 | A12 |
| miniASMDC150F/24 | 1.50 | 1.50 | 3.00 | 24 | 20 | 1.00 | 8.00 | 1.50 | 0.04 | 0.12 | 0.12 | A12 |
| miniASMDC200F/16 | 2.00 | 2.00 | 4.00 | 16 | 40 | 1.20 | 8.00 | 5.00 | 0.02 | 0.085 | 0.085 | A12 |
| miniASMDC260F/12 | 2.60 | 2.60 | 5.00 | 12 | 100 | 1.00 | 8.00 | 5.00 | 0.015 | 0.047 | 0.047 | A12 |
| miniASMDC260F/13.2 | 2.60 | 2.60 | 5.00 | 13.2 | 100 | 1.20 | 8.00 | 5.00 | 0.015 | 0.05 | 0.05 | A12 |
| miniASMDC260F/16 | 2.60 | 2.60 | 5.00 | 16 | 100 | 1.20 | 8.00 | 5.00 | 0.015 | 0.05 | 0.05 | A12 |
| **ASMDC 24-60V — Surface-mount** | | | | | | | | | | | | |
| ASMDC030F | 0.30 | 0.30 | 0.60 | 60 | 10 | 1.50 | 1.50 | 3.00 | 0.30 | 3.40 | 3.40 | A12 |
| ASMDC050F | 0.50 | 0.50 | 1.00 | 60 | 10 | 1.50 | 2.50 | 4.00 | 0.15 | 1.20 | 1.20 | A12 |
| ASMDC075F | 0.75 | 0.75 | 1.50 | 33 | 40 | 1.50 | 8.00 | 0.30 | 0.10 | 0.61 | 0.61 | A12 |
| ASMDC125F/33 | 1.25 | 1.25 | 2.50 | 33 | 40 | 1.50 | 8.00 | 2.00 | 0.04 | 0.25 | 0.25 | A12 |
| ASMDC185F/33 | 1.85 | 1.85 | 3.70 | 33 | 40 | 1.70 | 8.00 | 2.50 | 0.05 | 0.15 | 0.15 | A12 |
| ASMDC300F/24 | 3.00 | 3.00 | 6.00 | 24 | 40 | 1.70 | 8.00 | 5.00 | 0.015 | 0.072 | 0.072 | A12 |

**Notes:**
$I_H$ : Hold current: maximum current device will pass without interruption in 25°C, unless otherwise specified (20°C for ASMD).
$I_T$ : Trip current: minimum current that will switch the device from low-resistance to high-resistance in 25°C still air, unless otherwise specified.
$V_{MAX}$ : Maximum voltage device can withstand without damage at rated current.
$I_{MAX}$ : Maximum fault current device can withstand without damage at rated voltage.
$P_D$ : Power dissipated from device when in the tripped state in 25°C still air, unless otherwise specified.
$R_{MIN}$ : Minimum resistance of device as supplied at 25°C, unless otherwise specified.
$R_{1MAX}$ : Maximum resistance of device when measured one hour post reflow (surface-mount device) or one hour post trip (radial-leaded device) at 25°C unless otherwise specified.
$R_{aMAX}$ : Maximum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.
$R_{aMIN}$ : Minimum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.


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## Figures A4-A12 — Dimension Figures for Automotive Devices

**Figure A4**

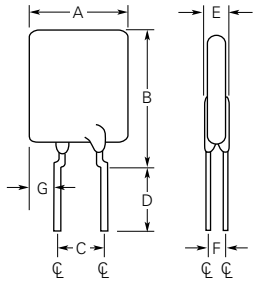



**Figure A5**

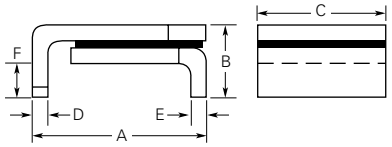



**Figure A6**

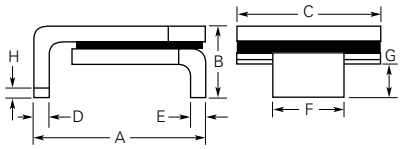



**Figure A7**

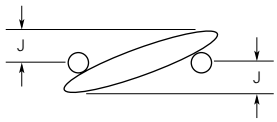



**Figure A8**

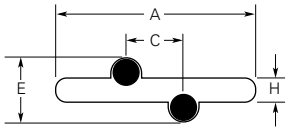



**Figure A9**

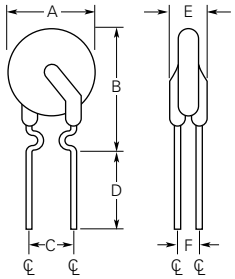



**Figure A10**

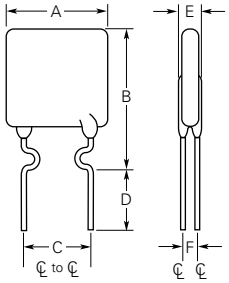



**Figure A11**

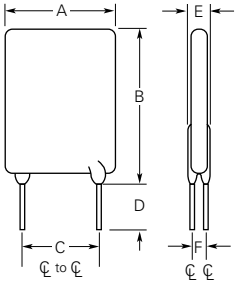
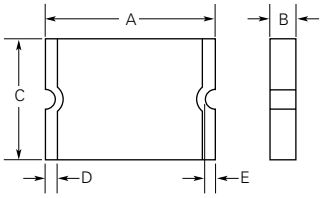



**Figure A12**





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## Table A4 — Dimensions in Millimeters and (Inches)

| Part Number | A | | B | | C | | D | | E | | F | | G | | H | J | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Typ | Max | |
| **AGRF 16V — Radial-leaded** | | | | | | | | | | | | | | | | | |
| AGRF400 | — | 8.9 (0.350) | — | 14.1 (0.56) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.15) | — | — | 3.10 (0.120) | 1.24 (0.049) | 1.4 (0.06) | A4, A7, A8 |
| AGRF500 | — | 10.4 (0.410) | — | 15.6 (0.61) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 3.94 (0.155) | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AGRF600 | — | 10.7 (0.420) | — | 18.4 (0.73) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 4.07 (0.160) | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AGRF700 | — | 11.2 (0.440) | — | 21.0 (0.73) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 4.49 (0.177) | 1.24 (0.049) | 1.7 (0.07) | A4, A7, A8 |
| AGRF800 | — | 12.7 (0.500) | — | 22.2 (0.88) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 5.08 (0.200) | 1.24 (0.049) | 1.8 (0.07) | A4, A7, A8 |
| AGRF900 | — | 14.0 (0.550) | — | 23.0 (0.91) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 5.69 (0.224) | 1.24 (0.049) | 2.0 (0.08) | A4, A7, A8 |
| AGRF1000 | — | 16.51 (0.650) | — | 25.7 (1.01) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 6.96 (0.274) | 1.24 (0.049) | 2.0 (0.08) | A4, A7, A8 |
| AGRF1100 | — | 17.5 (0.690) | — | 26.5 (1.04) | 4.3 (0.17) | 5.8 (0.20) | 7.6 (0.3) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 7.47 (0.294) | 1.24 (0.049) | 2.4 (0.09) | A4, A7, A8 |
| AGRF1200 | — | 17.5 (0.690) | — | 28.8 (1.14) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.3) | — | — | 3.5 (0.14) | 1.4 (0.06) | — | — | 4.83 (0.190) | 1.45 (0.057) | 1.5 (0.06) | A4, A7, A8 |
| AGRF1400 | — | 23.5 (0.925) | — | 28.7 (1.13) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.3) | — | — | 3.5 (0.14) | 1.4 (0.06) | — | — | 7.82 (0.308) | 1.45 (0.057) | 1.9 (0.07) | A4, A7, A8 |
| **AHRF (High Temperature) 30V — Radial-leaded** | | | | | | | | | | | | | | | | | |
| AHRF050 | — | 7.4 (0.29) | — | 12.7 (0.50) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.3 (0.13) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A7, A8, A9 |
| AHRF070 | — | 6.9 (0.27) | — | 10.8 (0.43) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.3 (0.13) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A7, A8, A10 |
| AHRF100 | — | 9.7 (0.38) | — | 13.6 (0.54) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A7, A8, A9 |


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## Table A4 — Dimensions for Automotive Devices in Millimeters (Inches)
(Cont'd)

| Part Number | A | | B | | C | | D | | E | | F | | G | | H | J | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Typ | Max | |
| **AHRF (High Temperature) 16V — Radial-leaded** | | | | | | | | | | | | | | | | | |
| AHRF200 | — | 9.4 (0.37) | — | 14.4 (0.57) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A7, A8, A9 |
| AHRF300 | — | 8.8 (0.35) | — | 13.8 (0.55) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF400 | — | 10.0 (0.39) | — | 15.0 (0.59) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF450 | — | 10.4 (0.41) | — | 15.6 (0.61) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 3.94 (0.155) | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF550 | — | 11.2 (0.44) | — | 18.9 (0.74) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF600 | — | 11.2 (0.44) | — | 21.0 (0.73) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 4.49 (0.177) | 1.24 (0.049) | 1.7 (0.07) | A4, A7, A8 |
| AHRF650 | — | 12.7 (0.50) | — | 22.2 (0.88) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 5.08 (0.200) | 1.24 (0.049) | 1.8 (0.07) | A4, A7, A8 |
| AHRF700 | — | 14.0 (0.55) | — | 21.9 (0.86) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF750 | — | 14.0 (0.55) | — | 23.5 (0.93) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 5.69 (0.224) | 1.24 (0.049) | 2.0 (0.08) | A4, A7, A8 |
| AHRF800 | — | 16.5 (0.65) | — | 22.5 (0.88) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF900 | — | 16,5 (0.65) | — | 25.7 (1.01) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | — | — | A4, A7, A8 |
| AHRF1000 | — | 17.5 (0.69) | — | 26.5 (1.04) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | 7.47 (0.294) | 1.24 (0.049) | 1.5 (0.06) | A4, A7, A8 |
| AHRF1100 | — | 21.0 (0.83) | — | 26.1 (1.03) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.0 (0.12) | 1.2 (0.05) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF1300 | — | 23.5 (0.925) | — | 28.7 (1.13) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.5 (0.14) | 1.4 (0.06) | — | — | 7.82 (0.308) | 1.45 (0.057) | 1.9 (0.08) | A4, A7, A8 |
| AHRF1400 | — | 23.5 (0.93) | — | 28.7 (1.13) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.6 (0.14) | 1.4 (0.06) | — | — | — | 1.24 (0.049) | 1.6 (0.06) | A4, A7, A8 |
| AHRF1500 | — | 23.5 (0.93) | — | 28.7 (1.13) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.5 (0.14) | 1.4 (0.06) | — | — | 7.82 (0.308) | — | — | A4, A7, A8 |
| **AHEF (High Temperature) 32V — Radial-leaded** | | | | | | | | | | | | | | | | | |
| AHEF050 | — | 7.4 (0.29) | — | 12.7 (0.50) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.3 (0.13) | — | — | — | — | — | — | A7, A8, A9 |
| AHEF070 | — | 6.9 (0.27) | — | 10.8 (0.43) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | — | — | — | — | — | — | A7, A8, A10 |
| AHEF100 | — | 9.7 (0.38) | — | 13.6 (0.54) | 4.3 (0.17) | 5.8 (0.23) | 7.6 (0.30) | — | — | 3.0 (0.12) | — | — | — | — | — | — | A7, A8, A9 |
| AHEF300 | — | 10.2 (0.40) | — | 15.5 (0.61) | 4.32 (0.17) | 5.84 (0.23) | 7.6 (0.30) | — | — | 3.8 (0.15) | — | — | — | — | — | — | A7, A8, A11 |
| AHEF500 | — | 14.0 (0.55) | — | 24.1 (0.95) | 4.3 (0.17) | 5.8 (0.23) | 11.5 (0.45) | — | — | 3.8 (0.15) | — | — | — | — | — | — | A7, A8, A11 |
| AHEF750 | — | 21.1 (0.83) | — | 24.9 (0.98) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 3.8 (0.15) | — | — | — | — | — | — | A7, A8, A11 |
| AHEF1000 | — | 23.5 (0.93) | — | 27.9 (1.10) | 9.4 (0.37) | 10.9 (0.43) | 7.6 (0.30) | — | — | 4.0 (0.16) | — | — | — | — | — | — | A7, A8, A11 |


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## Table A4 — Dimensions in Millimeters and (Inches) (Cont'd)

| Part Number | A | | B | | C | | D | | E | | F | | G | | H | | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| **AHS (High Temperature) 16V — Surface-mount** | | | | | | | | | | | | | | | | | |
| AHS080-2018 | 4.72 | 5.44 | — | 1.52 | 4.22 | 4.93 | 0.25 | 0.36 | 0.25 | 0.36 | 0.30 | 0.46 | — | — | — | — | A5 |
| | (0.186) | (0.214) | | (0.060) | (0.166) | (0.194) | (0.010) | (0.014) | (0.010) | (0.014) | (0.012) | (0.018) | | | | | |
| AHS120 | 6.73 | 7.98 | — | 3.00 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.118) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| AHS160 | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| AHS200 | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.240) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| AHS300 | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.240) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| **ASMD 16-60V — Surface-mount** | | | | | | | | | | | | | | | | | |
| ASMD030F | 6.73 | 7.98 | — | 3.18 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.125) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| ASMD050F | 6.73 | 7.98 | — | 3.18 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.125) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| ASMD075F | 6.73 | 7.98 | — | 3.18 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.125) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| ASMD100F | 6.73 | 7.98 | — | 3.00 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.118) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| ASMD125F | 6.73 | 7.98 | — | 3.00 | 4.8 | 5.44 | 0.56 | 0.71 | 0.56 | 0.71 | 2.16 | 2.41 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.265) | (0.314) | | (0.118) | (0.19) | (0.214) | (0.022) | (0.028) | (0.022) | (0.028) | (0.085) | (0.095) | (0.026) | (0.054) | (0.017) | | |
| ASMD150F | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| ASMD150F/33 | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| ASMD185F | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| ASMD200F | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |
| ASMD250F | 8.00 | 9.40 | — | 3.00 | 6.0 | 6.71 | 0.56 | 0.71 | 0.56 | 0.71 | 3.68 | 3.94 | 0.66 | 1.37 | 0.43 | — | A6 |
| | (0.315) | (0.370) | | (0.118) | (0.24) | (0.264) | (0.022) | (0.028) | (0.022) | (0.028) | (0.145) | (0.155) | (0.026) | (0.054) | (0.017) | | |

| Part Number | A | | B | | C | | D | | E | | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| **femtoASMDC 12-15V — Surface-mount** | | | | | | | | | | | |
| femtoASMDC005F | 1.40 | 1.80 | 0.45 | 0.85 | 0.60 | 1.00 | 0.10 | 0.50 | 0.075 | — | A12 |
| | (0.055) | (0.071) | (0.017) | (0.033) | (0.023) | (0.039) | (0.004) | (0.020) | (0.003) | — | |
| femtoASMDC008F | 1.40 | 1.80 | 0.45 | 0.85 | 0.60 | 1.00 | 0.10 | 0.50 | 0.075 | — | A12 |
| | (0.055) | (0.071) | (0.017) | (0.033) | (0.023) | (0.039) | (0.004) | (0.020) | (0.003) | — | |
| femtoASMDC010F/15 | 1.40 | 1.80 | 0.45 | 0.85 | 0.60 | 1.00 | 0.10 | 0.50 | 0.075 | — | A12 |
| | (0.055) | (0.071) | (0.017) | (0.033) | (0.023) | (0.039) | (0.004) | (0.020) | (0.003) | — | |
| **picoASMD 15V — Surface-mount** | | | | | | | | | | | |
| picoASMDC010S | 2.00 | 2.20 | 0.60 | 1.00 | 1.30 | 1.50 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.079) | (0.087) | (0.023) | (0.040) | (0.051) | (0.059) | (0.010) | (0.030) | (0.003) | — | |
| picoASMDC012S | 2.00 | 2.20 | 0.44 | 0.68 | 1.30 | 1.50 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.079) | (0.087) | (0.017) | (0.027) | (0.051) | (0.059) | (0.010) | (0.030) | (0.003) | — | |


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## Table A4 — Dimensions in Millimeters and (Inches) (Cont'd)

| Part Number | A | | B | | C | | D | | E | | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| **nanoASMDC 13.2-48V — Surface-mount** | | | | | | | | | | | |
| nanoASMDC010F | 3.00 | 3.40 | 0.62 | 1.00 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.024) | (0.039) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC012F | 3.00 | 3.40 | 0.62 | 1.00 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.024) | (0.039) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC016F | 3.00 | 3.40 | 0.62 | 1.00 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.024) | (0.039) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC020F | 3.00 | 3.40 | 0.58 | 0.82 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.023) | (0.032) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC025F | 3.00 | 3.40 | 0.58 | 0.82 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.023) | (0.032) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC035F | 3.00 | 3.40 | 0.58 | 0.82 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.023) | (0.032) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| nanoASMDC050F/13.2 | 3.00 | 3.40 | 0.50 | 0.74 | 1.37 | 1.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.134) | (0.019) | (0.029) | (0.054) | (0.071) | (0.010) | (0.030) | (0.003) | — | |
| **microASMD 13.2-30V — Surface-mount** | | | | | | | | | | | |
| microASMD005F | 3.0 | 3.43 | 0.50 | 0.85 | 2.35 | 2.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.135) | (0.019) | (0.034) | (0.092) | (0.110) | (0.010) | (0.030) | (0.003) | — | |
| microASMD010F | 3.0 | 3.43 | 0.50 | 0.85 | 2.35 | 2.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.135) | (0.019) | (0.034) | (0.092) | (0.110) | (0.010) | (0.030) | (0.003) | — | |
| microASMD050F | 3.0 | 3.43 | 0.38 | 0.62 | 2.35 | 2.80 | 0.25 | 0.75 | 0.076 | — | A12 |
| | (0.118) | (0.135) | (0.015) | (0.025) | (0.092) | (0.110) | (0.010) | (0.030) | (0.003) | — | |
| **miniASMDC 12-60V— Surface-mount** | | | | | | | | | | | |
| miniASMDC010F | 4.37 | 4.73 | 0.635 | 0.89 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.186) | (0.025) | (0.035) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC014F | 4.37 | 4.73 | 0.635 | 0.89 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | | A12 |
| | (0.172) | (0.186) | (0.025) | (0.035) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC020F | 4.37 | 4.73 | 0.635 | 0.89 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.186) | (0.025) | (0.035) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC030F | 4.37 | 4.73 | 0.635 | 0.89 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | | A12 |
| | (0.172) | (0.186) | (0.025) | (0.035) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC050F | 4.37 | 4.73 | 0.38 | 0.62 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.186) | (0.015) | (0.025) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC075F | 4.37 | 4.73 | 0.38 | 0.62 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.186) | (0.015) | (0.025) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC075F/24 | 4.37 | 4.83 | 0.81 | 1.46 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.032) | (0.057) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC075F/33 | 4.37 | 4.73 | 0.94 | 1.46 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.037) | (0.057) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC110F/16 | 4.37 | 4.83 | 0.28 | 0.48 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.011) | (0.019) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC110F/24 | 4.37 | 4.83 | 0.81 | 1.46 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | | A12 |
| | (0.172) | (0.190) | (0.032) | (0.057) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC125F/16 | 4.37 | 4.83 | 0.28 | 0.48 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.011) | (0.019) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC150F/12 | 4.37 | 4.83 | 0.28 | 0.48 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.011) | (0.019) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |


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## Table A4 — Dimensions in Millimeters and (Inches) (Cont'd)

| Part Number | A | | B | | C | | D | | E | | Figure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| **miniASMDC 12-60V— Surface-mount** | | | | | | | | | | | |
| miniASMDC150F/16 | 4.37 | 4.83 | 0.28 | 0.48 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.011) | (0.019) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC150F/24 | 4.37 | 4.83 | 1.00 | 1.94 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | | A12 |
| | (0.172) | (0.190) | (0.040) | (0.077) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC200F/16 | 4.37 | 4.73 | 0.51 | 1.22 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.186) | (0.020) | (0.048) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC260F/12 | 4.37 | 4.83 | 1.02 | 1.52 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | | A12 |
| | (0.172) | (0.190) | (0.042) | (0.060) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC260F/13.2 | 4.37 | 4.83 | 1.02 | 1.52 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.042) | (0.060) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| miniASMDC260F/16 | 4.37 | 4.83 | 1.02 | 1.52 | 3.07 | 3.41 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.172) | (0.190) | (0.042) | (0.060) | (0.121) | (0.134) | (0.010) | (0.040) | (0.008) | — | |
| **ASMDC 24-60V— Surface-mount** | | | | | | | | | | | |
| ASMDC030F | 7.30 | 7.70 | 0.63 | 0.90 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.025) | (0.035) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |
| ASMDC050F | 7.30 | 7.70 | 0.63 | 0.90 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.025) | (0.035) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |
| ASMDC075F | 7.30 | 7.70 | 0.63 | 0.90 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.025) | (0.035) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |
| ASMDC125F/33 | 7.30 | 7.70 | 0.45 | 0.71 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.018) | (0.028) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |
| ASMDC185F/33 | 7.30 | 7.70 | 0.90 | 1.20 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.035) | (0.047) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |
| ASMDC300F/24 | 7.30 | 7.70 | 0.80 | 1.10 | 4.90 | 5.30 | 0.25 | 0.95 | 0.20 | — | A12 |
| | (0.287) | (0.303) | (0.031) | (0.043) | (0.193) | (0.209) | (0.010) | (0.040) | (0.008) | — | |


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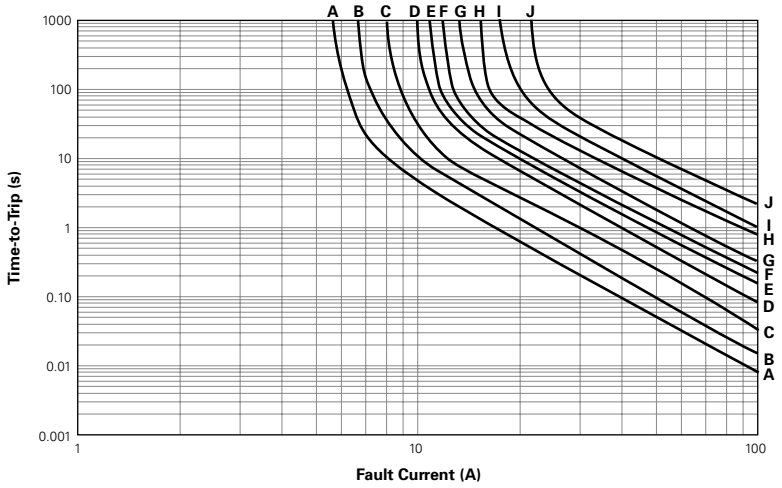
## Figures A13-A23 — Typical Time-to-trip at 25°C for PolySwitch Automotive Devices

**AGRF**

A = AGRF400
B = AGRF500
C = AGRF600
D = AGRF700
E = AGRF800
F = AGRF900
G = AGRF1000
H = AGRF1100
I = AGRF1200
J = AGRF1400

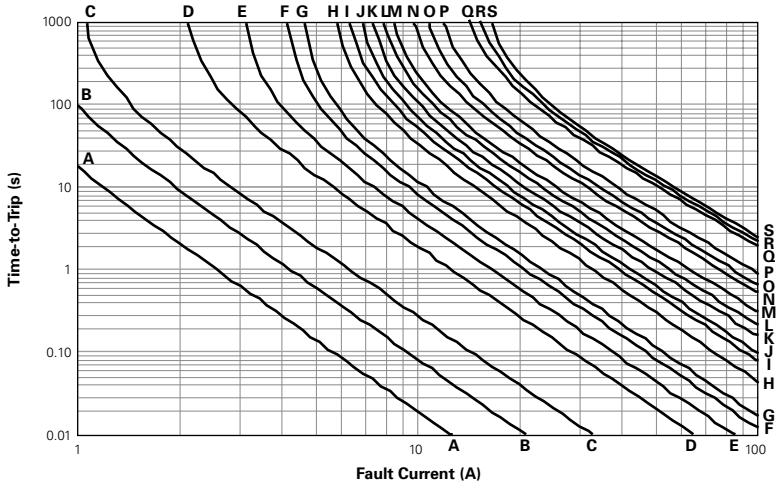
**Figure A13**




**AHRF**

A = AHRF050
B = AHRF070
C = AHRF100
D = AHRF200
E = AHRF300
F = AHRF400
G = AHRF450
H = AHRF550
I = AHRF600
J = AHRF650
K = AHRF700
L = AHRF750
M = AHRF800
N = AHRF900
O = AHRF1000
P = AHRF1100
Q = AHRF1300
R = AHRF1400
S = AHRF1500

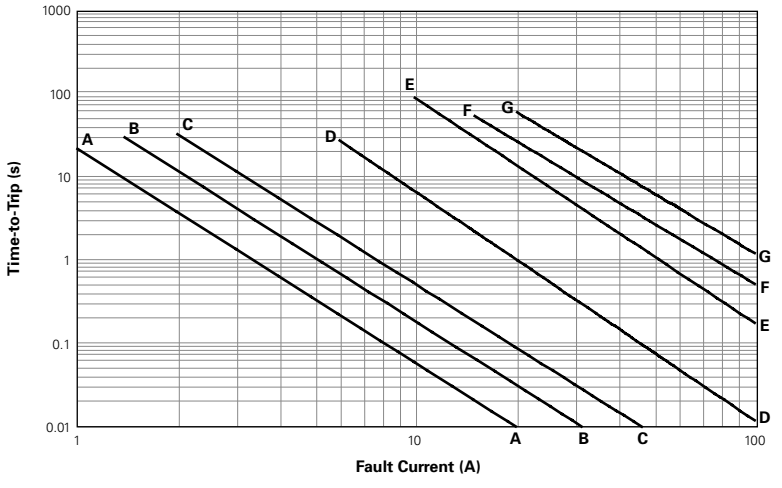
**Figure A14**




**AHEF**

A = AHEF050
B = AHEF070
C = AHEF100
D = AHEF300
E = AHEF500
F = AHEF750
G = AHEF1000

**Figure A15**





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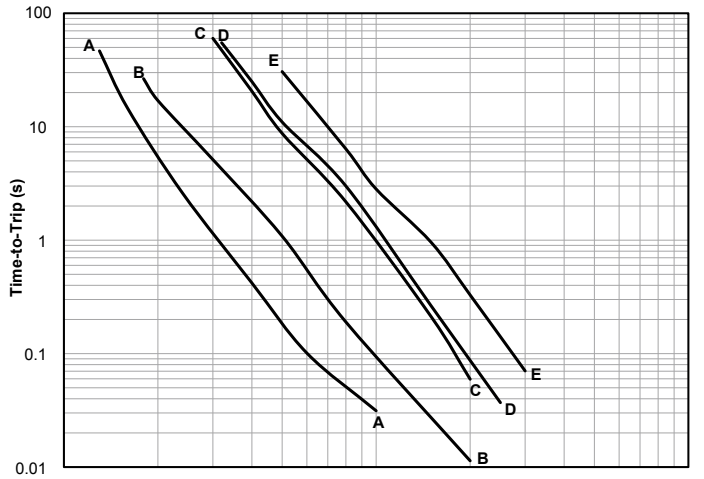
## Figures A13-A23 — Typical Time-to-trip at 25°C for PolySwitch Automotive Devices
(Cont'd)

**AHS**

A = AHS080-2018
B = AHS120
C = AHS160
D = AHS200
E = AHS300

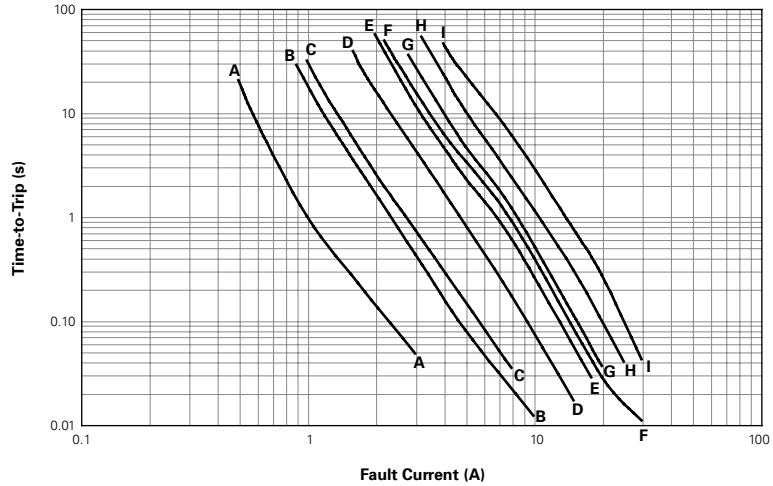
**Figure A16**




**ASMD**

A = ASMD030F
B = ASMD050F
C = ASMD075F
D = ASMD100F
E = ASMD125F
F = ASMD150F, ASMD150F/33
G = ASMD185F
H = ASMD200F
I = ASMD250F

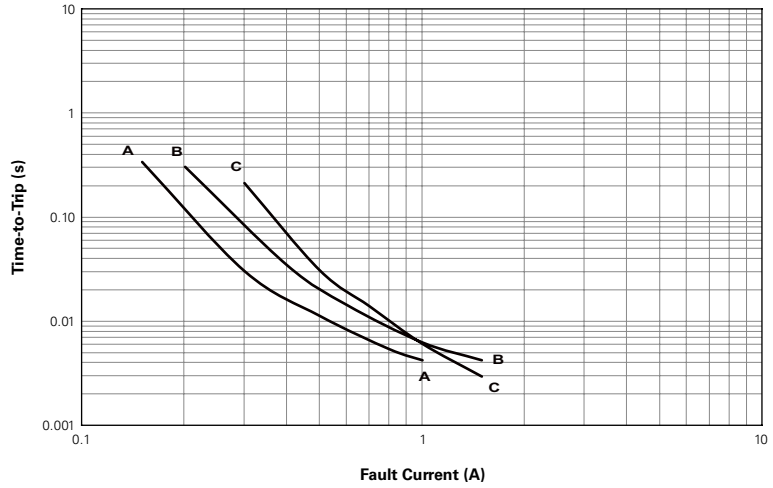
**Figure A17**




**femtoASMDC**

A = femtoASMDC005F
B = femtoASMDC008F
C = femtoASMDC010F/15

**Figure A18**





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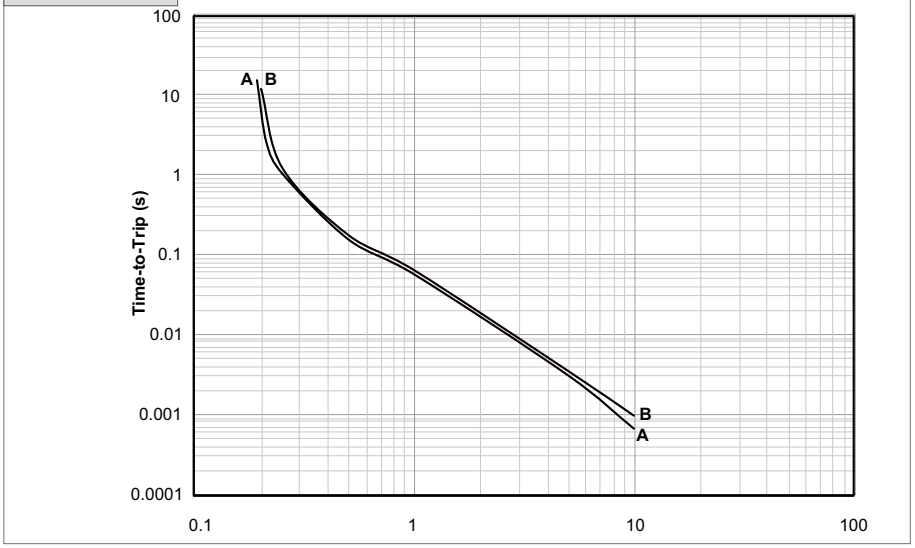
## Figures A13-A23 — Typical Time-to-trip at 25°C for PolySwitch Automotive Devices (Cont'd)

**picoASMDC**

A = picoASMDC010S
B = picoASMDC020S

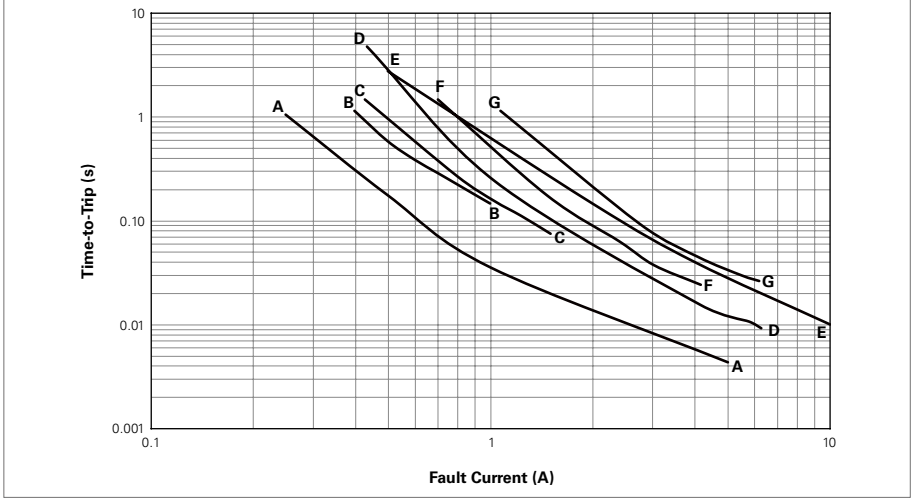
**Figure A19**




**nanoASMDC**

A = nanoASMDC010F
B = nanoASMDC012F
C = nanoASMDC016F
D = nanoASMDC020F
E = nanoASMDC025F
F = nanoASMDC035F
G = nanoASMDC050F/13.2

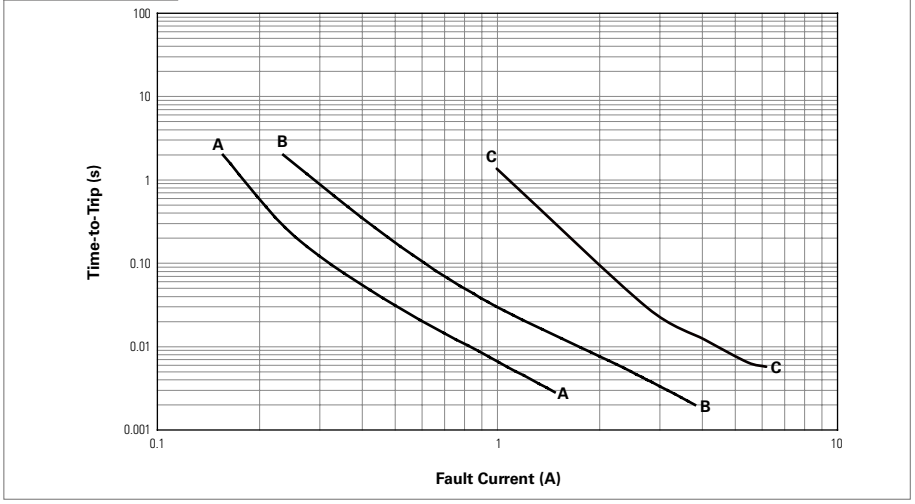
**Figure A20**




**microASMD**

A = microASMD005F
B = microASMD010F
C = microASMD050F

**Figure A21**





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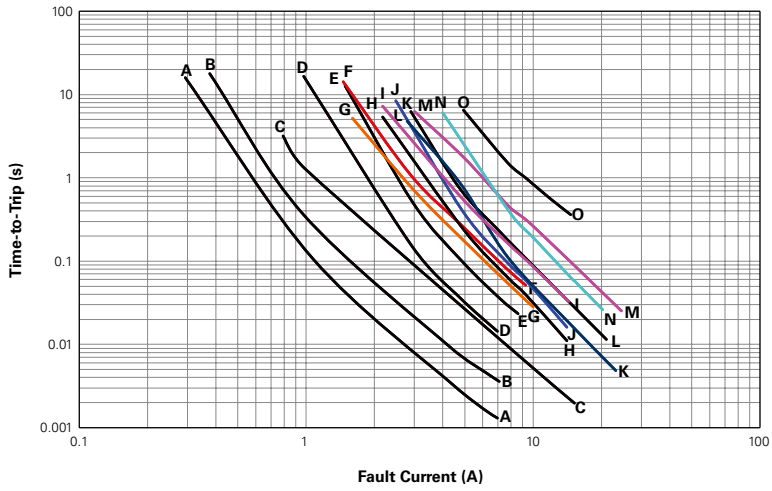
## Figures A13-A23 — Typical Time-to-trip at 25°C for PolySwitch Automotive Devices
(Cont'd)

**miniASMDC**

A = miniASMDC010F, miniASMDC014F
B = miniASMDC020F
C = miniASMDC030F
D = miniASMDC050F
E = miniASMDC075F
F = miniASMDC075F/24
G = miniASMDC075F/33
H = miniASMDC110F/16
I = miniASMDC110F/24
J = miniASMDC125F/16
K = miniASMDC150F/12
L = miniASMDC150F/16
M = miniASMDC150F/24
N = miniASMDC200F/16
O = miniASMDC260F/12, miniASMDC260F/13.2
miniASMDC260F/16

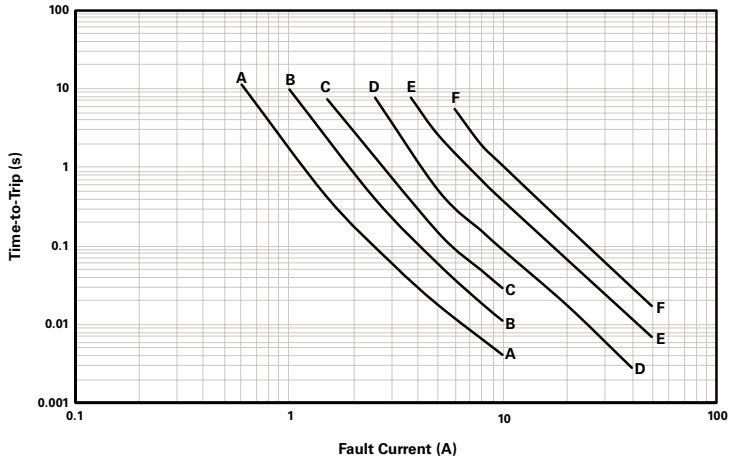
**Figure A22**




**ASMDC**

A = ASMDC030F
B = ASMDC050F
C = ASMDC075F
D = ASMDC125F/33
E = ASMDC185F/33
F = ASMDC300F/24

**Figure A23**





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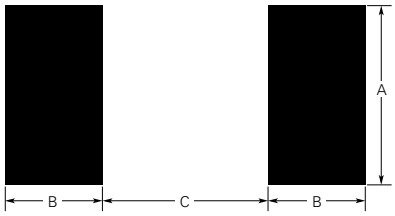
## Figures A24 — Recommended Pad Layout for PolySwitch Automotive Devices




## Table A5 - Physical Characteristics and Environmental Specifications for Automotive Devices

| AGRF | | |
|---|---|---|
| **Physical Characteristics** | | |
| Lead Material | AGRF400 to AGRF1100 | : Tin-plated Copper, 0.52mm² (20AWG) ø 0.8 mm/0.032in |
| | AGRF1200 to AGRF1400 | : Tin-plated Copper, 0.82mm² (18AWG) ø 1.0mm/0.040in |
| Soldering Characteristics | Solderability per ANSI/J-STD-002 Category 3 | |
| Solder Heat Withstand | AGRF400 | : per IEC68-2-20 Test Tb, Method 1A, Condition A: Can Withstand 5 s at 260°C ± 5°C |
| | AGRF500-AGRF1400 | : per IEC68-2-20 Test Tb, Method 1A, Condition B: Can Withstand 10 s at 260°C ± 5°C |
| Insulating Material | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0 | |
| Operation Temperature | -40°C~85°C | |

**Note:** See PS400 for other physical characteristics.
Devices are not intended to be placed through a reflow process.

| **Environmental Specifications** | | |
|---|---|---|
| **Test** | **Conditions** | **Resistance Change** |
| Passive Aging | 70°C, 1000 hrs | ±5% |
| | 85°C, 1000 hrs | ±5% |
| Humidity Aging | 85°C, 85% RH, 1000 hrs | ±5% |
| Thermal Shock | 85°C, -40°C (10 Times) | ±5% |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change |

**Note:** See PS400 for other environmental specifications.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## Table A5 — Physical Characteristics and Environmental Specifications (Cont'd)

### AHRF

#### Physical Characteristics

| | |
|---|---|
| Lead material | AHRF050 to AHRF200 : Tin-plated Copper-clad Steel, 0.205mm² (24 AWG), ø 0.51mm/0.020in |
| | AHRF300 to AHRF1100 : Tin-plated Copper 0.52mm² (20 AWG), ø 0.81mm/0.032in |
| | AHRF1300 to AHRF1500: Tin-plated Copper 0.82mm² (18 AWG), ø 1.0mm/0.04in |
| Soldering Characteristics | Solderability per ANSI/J-STD 002 Category 3 |
| Solder Heat Withstand | Per IEC 68-2-20, Test Tb, Method 1A, Condition B; Can Withstand 10 s at 260°C ± 5°C |
| Insulating Material | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0 Requirements |
| Operation Temperature | -40°C~125°C |

**Note:** See PS400 for other physical characteristics.
Devices are not intended to be placed through a reflow process.

#### Environmental Specifications

| Test | Conditions | Resistance Change |
|---|---|---|
| Passive Aging | 70°C, 1000 hrs | ±5% |
| | 85°C, 1000 hrs | ±5% |
| Humidity Aging | 85°C, 85% RH, 1000 hrs | ±5% |
| Thermal Shock | 125°C, -40°C (10 Times) | ±5% |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change |

**Note:** See PS400 for other environmental specifications.

### AHEF

#### Physical Characteristics

| | |
|---|---|
| Lead Material | AHEF050 to AHEF100: Tin-plated Copper-clad Steel, 0.205mm² (24 AWG), ø 0.51mm/0.020in. |
| | AHEF300 to AHEF750: Tin-plated Copper 0.52mm² (20 AWG), ø 0.81mm/0.032in |
| | AHEF1000: Tin-plated Copper 0.82mm² (18 AWG), ø 1.0mm/0.04in |
| Soldering Characteristics | Solderability per ANSI/J-STD 002 Category 3 |
| Solder Heat Withstand | Per IEC 68-2-20, Test Tb, Method 1A, Condition B; Can Withstand 10 s at 260°C ± 5°C |
| Insulating Material | Cured, Flame-retardant Epoxy Polymer; Meets UL 94V-0 Requirements |
| Operation Temperature | -40°C~125°C |

**Note:** See PS400 for other physical characteristics.
Devices are not intended to be placed through a reflow process.

#### Environmental Specifications

| Test | Conditions | Resistance Change |
|---|---|---|
| Passive Aging | 70°C, 1000 hrs | ±5% |
| | 85°C, 1000 hrs | ±5% |
| Humidity Aging | 85°C, 85% RH, 1000 hrs | ±5% |
| Thermal Shock | 125°C, -40°C (10 Times) | ±5% |
| Solvent Resistance | MIL-STD-202, Method 215F | No Change |

**Note:** See PS400 for other environmental specifications.


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## Table A5 — Physical Characteristics and Environmental Specifications (Cont'd)

### AHS

#### Physical Characteristics

| | |
|---|---|
| Lead Material | Tin-plated Brass to MIL-T-10727B |
| Soldering Characteristics | Solderability per ANSI-J-STD-002 Category 1 |
| Solder Heat Withstand | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A |
| Flammability | Per IEC 695-2-2 Needle Flame Test for 20 s |
| Operation Temperature | -40°C~125°C |

**Note:** See PS400 for other physical characteristics.

#### Environmental Specifications

| Test | Conditions | Resistance Change |
|---|---|---|
| Passive Aging | 70°C, 1000 hrs | ±3% Typical |
| | 85°C, 1000 hrs | ±5% Typical |
| Humidity Aging | 85°C, 85% RH, 1000 hrs | ±1.2% Typical |
| Thermal Shock | 125°C, -40°C (20 Times) | -33% Typical |
| Solvent Resistance | Freon | No Change |
| | Trichloroethane | No Change |
| | Hydrocarbons | No Change |

**Note:** See PS400 for other environmental specifications.

### ASMD

#### Physical Characteristics

| | |
|---|---|
| Terminal Pad Material | 98%+ Tin-plated Brass |
| Soldering Characteristics | Solderability per ANSI-J-STD-002 Category 1 |
| Solder Heat Withstand | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A |
| Flammability Resistance | Per IEC 695-2-2 Needle Flame Test for 20 s |
| Recommended Storage Conditions | 40°C max, 70% RH max; Devices May Not Meet Specified Ratings if Storage Conditions are Exceeded |
| Operation Temperature | -40°C~85°C |

**Note:** See PS400 for other physical characteristics.

#### Environmental Specifications

| Test | Conditions | Resistance Change |
|---|---|---|
| Passive Aging | 60°C, 1000 hrs | ±3% Typical |
| | 85°C, 1000 hrs | ±5% Typical |
| Humidity Aging | 85°C, 85% RH, 100 hrs | ±1.2% Typical |
| Thermal Shock | 85°C, -40°C (20 Times) | -33% Typical |
| | 125°C, -55°C (10 Times) | -33% Typical |
| Solvent Resistance | Freon | No Change |
| | Trichloroethane | No Change |
| | Hydrocarbons | No Change |

**Note:** See PS400 for other environmental specifications.


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## Table A5 — Physical Characteristics and Environmental Specifications (Cont'd)

| femtoASMDC/picoASMDC/nanoASMDC/microASMD/miniASMDC/ASMDC | |
|---|---|
| **Physical Characteristics** | |
| Terminal Pad Material | 100% Matte Tin with Nickel Underplate |
| Soldering Characteristics | Solderability per ANSI-J-STD-002 Category 3 |
| Solder Heat Withstand | Per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A |
| Flammability Resistance | Per IEC 695-2-2 Needle Flame Test for 20 s |
| Recommended Storage Conditions | 40°C max, 70% RH max; Devices May Not Meet Specified Ratings if Storage Conditions are Exceeded |
| Operation Temperature | -40°C~85°C |

**Note:** See PS400 for other physical characteristics.

| **Environmental Specifications** | | |
|---|---|---|
| **Test** | **Conditions** | **Resistance Change** |
| Passive Aging | 60°C, 1000 hrs | ±3% Typical |
| | 85°C, 1000 hrs | ±5% Typical |
| Humidity Aging | 85°C, 85% RH, 100 hrs | ±1.2% Typical |
| Thermal Shock | 85°C, -40°C (20 Times) | -33% Typical |
| | 125°C, -55°C (10 Times) | -33% Typical |
| Solvent Resistance | Freon | No Change |
| | Trichloroethane | No Change |
| | Hydrocarbons | No Change |

**Note:** See PS400 for other environmental specifications.


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## Table A6 — Packaging and Marking Information for Automotive Devices

| Part Number | Bag Quantity | Tape and Reel Quantity | Ammo Pack Quantity | Standard Package Quantity | Part Marking | Agency Recognition |
|---|---|---|---|---|---|---|
| **AGRF Radial-leaded** | | | | | | |
| AGRF400 | 500 | — | — | 10,000 | G4 | * |
| AGRF400-2 | — | 2,500 | — | 12,500 | G4 | * |
| AGRF400-AP | — | — | 2,000 | 10,000 | G4 | * |
| AGRF500 | 500 | — | — | 10,000 | G5 | * |
| AGRF500-2 | — | 2,000 | — | 10,000 | G5 | * |
| AGRF500-AP | — | — | 2,000 | 10,000 | G5 | * |
| AGRF600 | 500 | — | — | 10,000 | G6 | * |
| AGRF600-2 | — | 2,000 | — | 10,000 | G6 | * |
| AGRF600-AP | — | — | 2,000 | 10,000 | G6 | * |
| AGRF700 | 500 | — | — | 10,000 | G7 | * |
| AGRF700-2 | — | 1,500 | — | 7,500 | G7 | * |
| AGRF700-AP | — | — | 1,500 | 7,500 | G7 | * |
| AGRF800 | 500 | — | — | 10,000 | G8 | * |
| AGRF800-2 | — | 1,500 | — | 7,500 | G8 | * |
| AGRF800-AP | — | — | 1,500 | 7,500 | G8 | * |
| AGRF900 | 500 | — | — | 10,000 | G9 | * |
| AGRF900-2 | — | 1,000 | — | 5,000 | G9 | * |
| AGRF900-AP | — | — | 1,000 | 5,000 | G9 | * |
| AGRF1000 | 250 | — | — | 5,000 | G10 | * |
| AGRF1000-2 | — | 1,000 | — | 5,000 | G10 | * |
| AGRF1000-AP | — | — | 1,000 | 5,000 | G10 | * |
| AGRF1100 | 250 | — | — | 5,000 | G11 | * |
| AGRF1100-2 | — | 1,000 | — | 5,000 | G11 | * |
| AGRF1100-AP | — | — | 1,000 | 5,000 | G11 | * |
| AGRF1200 | 250 | — | — | 5,000 | G12 | * |
| AGRF1200-2 | — | 1,000 | — | 5,000 | G12 | * |
| AGRF1200-AP | — | — | 1,000 | 5,000 | G12 | * |
| AGRF1400 | 250 | — | — | 5,000 | G14 | * |
| AGRF1400-2 | — | 1,000 | — | 5,000 | G14 | * |
| AGRF1400-AP | — | — | 1,000 | 5,000 | G14 | * |
| **AHRF (High Temperature) Radial-leaded** | | | | | | |
| AHRF050 | 500 | — | — | 10,000 | H0.5 | * |
| AHRF050-2 | — | 2,500 | — | 12,500 | H0.5 | * |
| AHRF050-AP | — | — | 2,500 | 12,500 | H0.5 | * |
| AHRF070 | 500 | — | — | 10,000 | H0.7 | * |
| AHRF070-2 | — | 2,500 | — | 12,500 | H0.7 | * |
| AHRF070-AP | — | — | 2,500 | 12,500 | H0.7 | * |
| AHRF100 | 500 | — | — | 10,000 | H1 | * |
| AHRF100-2 | — | 2,500 | — | 12,500 | H1 | * |
| AHRF100-AP | — | — | 2,500 | 12,500 | H1 | * |
| AHRF200 | 500 | — | — | 10,000 | H2 | * |
| AHRF200-2 | — | 2,500 | — | 12,500 | H2 | * |
| AHRF200-AP | — | — | 2,500 | 12,500 | H2 | * |
| AHRF300 | 500 | — | — | 10,000 | H3 | * |
| AHRF300-2 | — | 2,000 | — | 10,000 | H3 | * |
| AHRF300-AP | — | — | 2,000 | 10,000 | H3 | * |
| AHRF400 | 500 | — | — | 10,000 | H4 | * |
| AHRF400-2 | — | 1,500 | — | 7,500 | H4 | * |
| AHRF400-AP | — | — | 1,500 | 7,500 | H4 | * |

* These devices are intended for use in automotive applications.
For commercial alternatives to these products please refer to radial-leaded devices or surface-mount devices product brochures.


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## Table A6 — Packaging and Marking Information for Automotive Devices
(Cont'd)

| Part Number | Bag Quantity | Tape and Reel Quantity | Ammo Pack Quantity | Standard Package Quantity | Part Marking | Agency Recognition |
|---|---|---|---|---|---|---|
| **AHRF (High Temperature) Radial-leaded** | | | | | | |
| AHRF450 | 500 | — | — | 10,000 | H4.5 | * |
| AHRF450-2 | — | 1,500 | — | 7,500 | H4.5 | * |
| AHRF450-AP | — | — | 1,500 | 7,500 | H4.5 | * |
| AHRF550 | 500 | — | — | 10,000 | H5.5 | * |
| AHRF550-2 | — | 2,000 | — | 10,000 | H5.5 | * |
| AHRF550-AP | — | — | 2,000 | 10,000 | H5.5 | * |
| AHRF600 | 500 | — | — | 10,000 | H6 | * |
| AHRF600-2 | — | 2,000 | — | 10,000 | H6 | * |
| AHRF600-AP | — | — | 2,000 | 10,000 | H6 | * |
| AHRF650 | 500 | — | — | 10,000 | H6.5 | * |
| AHRF650-2 | — | 1,500 | — | 7,500 | H6.5 | * |
| AHRF650-AP | — | — | 1,500 | 7,500 | H6.5 | * |
| AHRF700 | 500 | — | — | 10,000 | H7 | * |
| AHRF700-2 | — | 1,500 | — | 7,500 | H7 | * |
| AHRF700-AP | — | — | 1,500 | 7,500 | H7 | * |
| AHRF750 | 500 | — | — | 10,000 | H7.5 | * |
| AHRF750-2 | — | 1,000 | — | 5,000 | H7.5 | * |
| AHRF750-AP | — | — | 1,000 | 5,000 | H7.5 | * |
| AHRF800 | 500 | — | — | 10,000 | H8 | * |
| AHRF800-2 | — | 1,000 | — | 5,000 | H8 | * |
| AHRF800-AP | — | — | 1,000 | 5,000 | H8 | * |
| AHRF900 | 250 | — | — | 5,000 | H9 | * |
| AHRF900-2 | — | 1,000 | — | 5,000 | H9 | * |
| AHRF900-AP | — | — | 1,000 | 5,000 | H9 | * |
| AHRF1000 | 250 | — | — | 5,000 | H10 | * |
| AHRF1000-2 | — | 1,000 | — | 5,000 | H10 | * |
| AHRF1000-AP | — | — | 1,000 | 5,000 | H10 | * |
| AHRF1100 | 250 | — | — | 5,000 | H11 | * |
| AHRF1100-2 | — | 1,000 | — | 5,000 | H11 | * |
| AHRF1100-AP | — | — | 1,000 | 5,000 | H11 | * |
| AHRF1300 | 250 | — | — | 5,000 | H13 | * |
| AHRF1300-2 | — | 1,000 | — | 5,000 | H13 | * |
| AHRF1300-AP | — | — | 1,000 | 5,000 | H13 | * |
| AHRF1400 | 250 | — | — | 5,000 | H14 | * |
| AHRF1400-2 | — | 1,000 | — | 5,000 | H14 | * |
| AHRF1400-AP | — | — | 1,000 | 5,000 | H14 | * |
| AHRF1500 | 250 | — | — | 5,000 | H15 | * |
| AHRF1500-2 | — | 1,000 | — | 5,000 | H15 | * |
| AHRF1500-AP | — | — | 1,000 | 5,000 | H15 | * |
| **AHEF (High Temperature) Radial-leaded** | | | | | | |
| AHEF050 | 500 | — | — | 10,000 | E0.5 | * |
| AHEF070 | 500 | — | — | 10,000 | E0.7 | * |
| AHEF100 | 500 | — | — | 10,000 | E1 | * |
| AHEF300 | 500 | — | — | 10,000 | E3 | * |
| AHEF500 | 250 | — | — | 5,000 | E5 | * |
| AHEF750 | 250 | — | — | 5,000 | E7.5 | * |
| AHEF1000 | 250 | — | — | 5,000 | E10 | * |

* These devices are intended for use in automotive applications.
For commercial alternatives to these products please refer to the radial-leaded devices or surface-mount devices product brochures.


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## Table A6 — Packaging and Marking Information for Automotive Devices
(Cont'd)

| Part Number | Tape and Reel Quantity | Standard Package Quantity | Part Marking | Recommended Pad Layouts [mm(in) See Figure A24] Dimension A (Min*/Nom) | Dimension B (Nom) | Dimension C (Nom) | Agency Recognition |
|---|---|---|---|---|---|---|---|
| **AHS (High Temperature) Surface-mount** | | | | | | | |
| AHS080-2018 | 4,000 | 20,000 | H08 | 4.6 (0.18) | 1.5 (0.06) | 3.4 (0.134) | * |
| AHS120 | 2,000 | 10,000 | H12 | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| AHS160 | 1,500 | 7,500 | 160 | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| AHS200 | 1,500 | 7,500 | H200 | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| AHS300 | 1,500 | 7,500 | H300 | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| **ASMD Surface-mount** | | | | | | | |
| ASMD030F | 2,000 | 10,000 | 030F | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| ASMD050F | 2,000 | 10,000 | 050F | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| ASMD075F | 2,000 | 10,000 | 075F | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| ASMD100F | 2,000 | 10,000 | 100F | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| ASMD125F | 2,000 | 10,000 | 125F | 3.1 (0.12) | 2.3 (0.09) | 5.1 (0.201) | * |
| ASMD150F | 1,500 | 7,500 | 150F | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| ASMD150F/33 | 1,500 | 7,500 | 153F | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| ASMD185F | 1,500 | 7,500 | 185A | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| ASMD200F | 1,500 | 7,500 | 200F | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| ASMD250F | 1,500 | 7,500 | 250F | 4.6 (0.18) | 2.3 (0.09) | 6.1 (0.240) | * |
| **femtoASMDC Surface-mount** | | | | | | | |
| femtoASMDC005F | 4,000 | 20,000 | A | 0.80 (0.032) | 0.60 (0.024) | 0.80 (0.032) | * |
| femtoASMDC008F | 4,000 | 20,000 | T | 0.80 (0.032) | 0.60 (0.024) | 0.80 (0.032) | * |
| femtoASMDC010F/15 | 4,000 | 20,000 | B | 0.80 (0.032) | 0.60 (0.024) | 0.80 (0.032) | * |
| **picoASMDC Surface-mount** | | | | | | | |
| picoASMDC010S | 3,000 | 15,000 | C | 1.50 (0.060) | 1.00 (0.039) | 1.20 (0.047) | * |
| picoASMDC012S | 4,000 | 20,000 | F | 1.50 (0.060) | 1.00 (0.039) | 1.20 (0.047) | * |
| **nanoASMDC Surface-mount** | | | | | | | |
| nanoASMDC010F | 3,000 | 15,000 | A | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC012F | 3,000 | 15,000 | P | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC016F | 3,000 | 15,000 | N | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC020F | 3,000 | 15,000 | 02 | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC025F | 3,000 | 15,000 | C | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC035F | 3,000 | 15,000 | 03 | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| nanoASMDC050F/13.2 | 3,000 | 15,000 | M | 1.60 (0.063) | 1.00 (0.039) | 2.00 (0.079) | * |
| **microASMD Surface-mount** | | | | | | | |
| microASMD005F | 4,000 | 20,000 | 05 | 2.50 (0.098) | 1.00 (0.039) | 2.00 (0.079) | * |
| microASMD010F | 4,000 | 20,000 | 10 | 2.50 (0.098) | 1.00 (0.039) | 2.00 (0.079) | * |
| microASMD050F | 4,000 | 20,000 | 50 | 2.50 (0.098) | 1.00 (0.039) | 2.00 (0.079) | * |
| **miniASMDC Surface-mount** | | | | | | | |
| miniASMDC010F | 2,000 | 10,000 | 10 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC014F | 2,000 | 10,000 | 14 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC020F | 2,000 | 10,000 | 2 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC030F | 2,000 | 10,000 | 3 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC050F | 2,000 | 10,000 | 5 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC075F | 2,000 | 10,000 | 7 | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC075F/24 | 1,500 | 7,500 | 075F 24V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC075F/33 | 1,500 | 7,500 | 075F 33V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC110F/16 | 2,000 | 10,000 | 110F 16V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC110F/24 | 1,500 | 7,500 | 110F 24V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC125F/16 | 2,000 | 10,000 | 125F 16V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC150F/12 | 2,000 | 10,000 | 150F 12V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |

* These devices are intended for use in automotive applications.
For commercial alternatives to these products please refer to the radial-leaded devices or surface-mount devices product brochures.


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## Table A6 — Packaging and Marking Information for Automotive Devices
(Cont'd)

| Part Number | Tape and Reel Quantity | Standard Package Quantity | Part Marking | Recommended Pad Layouts [mm(in) See Figure A24] Dimension A (Min*/Nom) | Dimension B (Nom) | Dimension C (Nom) | Agency Recognition |
|---|---|---|---|---|---|---|---|
| **miniASMDC Surface-mount** | | | | | | | |
| miniASMDC150F/16 | 2,000 | 10,000 | 150 16V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC150F/24 | 1,000 | 5,000 | 150F 24V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC200F/16 | 2,000 | 10,000 | 200F 16V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC260F/12 | 1,500 | 7,500 | 260F 12V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC260F/13.2 | 1,500 | 7,500 | 260F 13V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| miniASMDC260F/16 | 1,500 | 7,500 | 260F 16V | 3.15 (0.124) | 1.68 (0.066) | 3.10 (0.122) | * |
| **ASMDC Surface-mount** | | | | | | | |
| ASMDC030F | 4,000 | 20,000 | 030F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |
| ASMDC050F | 4,000 | 20,000 | 050F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |
| ASMDC075F | 4,000 | 20,000 | 075F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |
| ASMDC125F/33 | 4,000 | 20,000 | 125F | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |
| ASMDC185F/33 | 4,000 | 20,000 | 185F 33V | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |
| ASMDC300F/24 | 4,000 | 20,000 | 300F 24V | 5.30 (0.209) | 2.00 (0.079) | 4.60 (0.18) | * |

* These devices are intended for use in automotive applications.
For commercial alternatives to these products please refer to the radial-leaded devices or surface-mount devices product brochures.


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## Table A7 — Tape and Reel Specifications for AGRF/AHRF/AHEF Automotive Devices

AGRF, AHRF and AHEF devices are available in tape and reel packaging per EIA468-B/IEC286-2 and EIA 481-2 standards. See Figures A25 and A26 for details

| Description | EIA Mark | Dimension (mm) | Tolerance |
|---|---|---|---|
| Carrier Tape Width | W | 18.0 | -0.5/+1.0 |
| Hold Down Tape Width | $W_4$ | 11.0 | Minimum |
| Top Distance between Tape Edges | $W_6$ | 3.0 | Maximum |
| Sprocket Hole Position | $W_5$ | 9.0 | -0.5/+0.75 |
| Sprocket Hole Diameter | $D_0$ | 4.0 | ±0.2 |
| Abscissa to Plane (Straight Lead) (AHEF300 to AHEF1000) | H | 20.3 | ±0.5 |
| Abscissa to Plane (Kinked Lead) (AGRF400 to AGRF1400, AHRF050 to AHRF1500, AHEF050 to AHEF100) | $H_0$ | 16.0 | ±0.5 |
| Abscissa to Top (AGRF400 to AGRF600, AHRF050 to AHRF450, AHEF050 to AHEF300) | $H_1$ | 32.2 | Maximum |
| Abscissa to Top (AGRF700 to AGRF1400, AHRF550 to AHRF1500*, AHEF500 to AHEF1000) | $H_1$ | 45.0 | Maximum |
| Overall Width with Lead Protrusion (AGRF400 to AGRF600 & AHRF050 to AHRF450, AHEF050 to AHEF300) | $C_1$ | 43.2 | Maximum |
| Overall Width with Lead Protrusion (AGRF700 to AGRF1400, AHRF550 to AHRF1500, AHEF500 to AHEF1000) | $C_1$ | 55.0 | Maximum |
| Overall Width without Lead Protrusion (AGRF400 to AGRF600, AHRF050 to AHRF450, AHEF050 to AHEF300) | $C_2$ | 42.5 | Maximum |
| Overall Width without Lead Protrusion (AGRF700 to AGRF1400, AHRF550 to AHRF1500, AHEF500 to AHEF1000) | $C_2$ | 54.0 | Maximum |
| Lead Protrusion | $L_1$ | 1.0 | Maximum |
| Protrusion of Cut-out | L | 11.0 | Maximum |
| Protrusion Beyond Hold-Down Tape | $I_2$ | Not specified | — |
| Sprocket Hole Pitch | $P_0$ | 12.7 | ± 0.3 |
| Device Pitch (AGRF400 to AGRF700, AHRF050 to AHRF600, AHEF050 to AHEF300) | — | 12.7 | ± 0.3 |
| Device Pitch (AGRF800 to AGRF1400, AHRF650 to AHRF1500, AHEF500 to AHEF1000) | — | 25.4 | ± 0.6 |
| Pitch Tolerance | — | 20 consec. | ± 0.1 |
| Tape Thickness | t | 0.9 | Maximum |
| Overall Tape and Lead Thickness (AGRF400 to AGRF1100, AHRF050 to AHRF1100*, AHEF050 to AHEF750) | $t_1$ | 2.0 | Maximum |
| Overall Tape and Lead Thickness (AGRF1200 to AGRF1400, AHRF1300 to AHRF1500*, AHEF1000) | $t_1$ | 2.3 | Maximum |
| Splice Sprocket Hole Alignment | — | 0 | ± 0.3 |
| Body Lateral Deviation | Dh | 0 | ± 1.0 |
| Body Tape Plane Deviation | Dp | 0 | ± 1.3 |
| Ordinate to Adjacent Component Lead (AGRF400 to AGRF1100, AHRF050 to AHRF900, AHEF050 to AHEF500 | $P_1$ | 3.81 | ± 0.7 |
| Ordinate to Adjacent Component Lead (AGRF1200 to AGRF1400, AHRF1000 to AHRF1500, AHEF750 to AHEF1000) | $P_1$ | 7.62 | ± 0.7 |
| Lead Spacing (AGRF400 to AGRF1100, AHRF050 to AHRF900*, AHEF050 to AHEF500) | F | 5.05 | ± 0.75 |
| Lead Spacing (AGRF1200 to AGRF1400, AHRF1000 to AHRF1500*, AHEF750 to AHEF1000) | F | 10.15 | ± 0.75 |
| Reel Width (AGRF400 to AGRF600 & AHRF050 to AHRF450, AHEF050 to AHEF300) | $w_2$ | 56.0 | Maximum |
| Reel Width (AGRF700 to AGRF1400, AHRF550 to AHRF1500*, AHEF500 to AHEF1000) | $w_2$ | 63.5 | Maximum |
| Reel Diameter | a | 370.0 | Maximum |
| Space between Flanges* (AHEF050 to AHEF300) | $w_1$ | 48.0 | Maximum |
| Space between Flanges* (AHEF500 to AHEF1000) | $w_1$ | 55.0 | Maximum |
| Arbor Hold Diameter | c | 26.0 | ±12.0 |
| Core Diameter* | n | 91.0 | Maximum |
| Box | — | 64/372/362 | Maximum |
| Consecutive Missing Places | — | None | — |
| Empty Places per Reel | — | 0.1% | Maximum |

* Differs from EIA specification.


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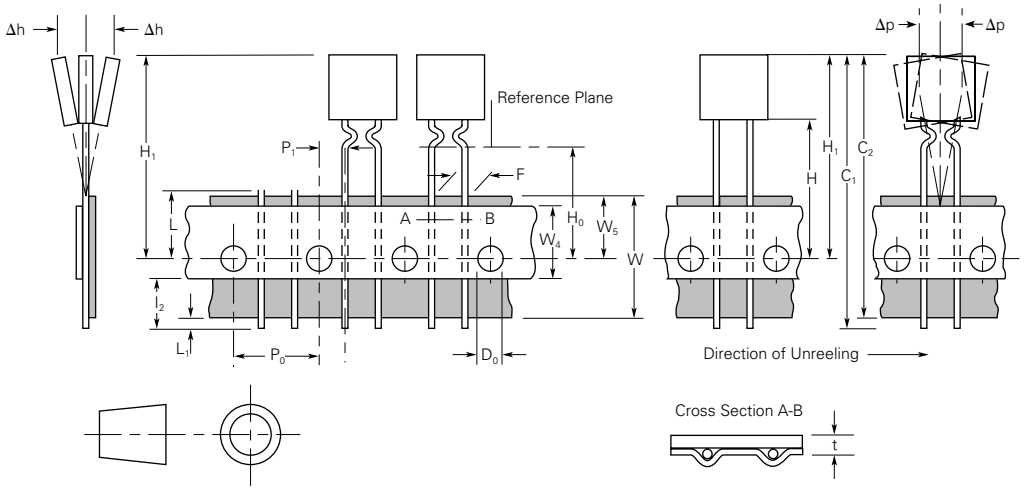
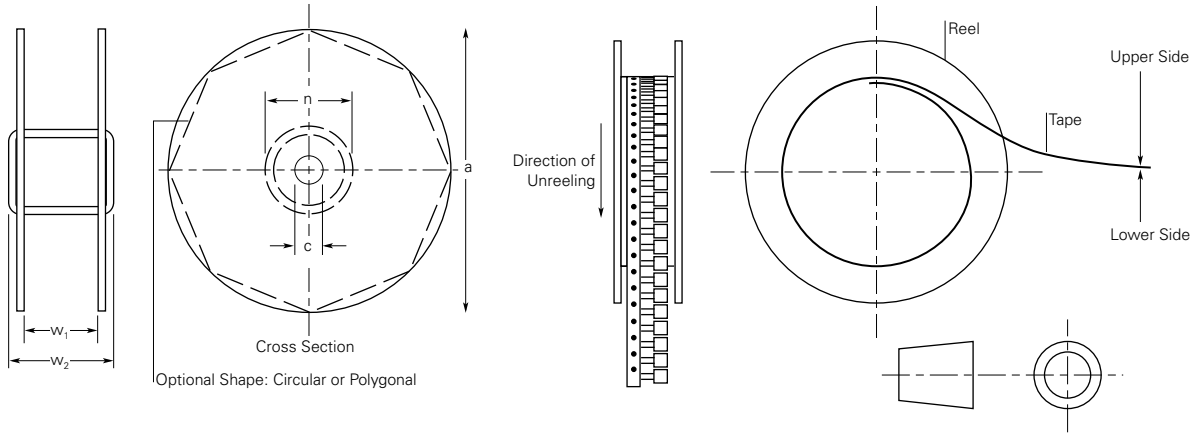
## Figure A25 — EIA Referenced Taped Component Dimensions for AGRF/AHRF/AHEF PolySwitch Automotive Devices




## Figure A26 — EIA Referenced Reel Dimensions for AGRF/AHRF/AHEF PolySwitch Automotive Devices




## Table A8 — Tape and Reel Specifications for AHS/ASMD/femtoASMDC/picoASMDC/nanoASMDC/microASMD/miniASMDC/ASMDC PolySwitch Automotive Devices (in Millimeters)

| Description | femtoASMDC EIA 481-1 | picoASMDC EIA 481-1 | nanoASMDC EIA 481-1 | microASMD EIA 481-1 | miniASMDC EIA 481-1 | ASMDC EIA 481-1 | AHS080-2018 EIA 481-2 | AHS120 ASMD030F~ ASMD125F EIA 481-2 | AHS160~AHS300 ASMD150F~ ASMD250F EIA 481-2 |
|---|---|---|---|---|---|---|---|---|---|
| W | 8.0 ± 0.30 | 8.0 ± 0.30 | 8.0 ± 0.30 | 8.0 ± 0.30 | 12.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 | 16.0 ± 0.30 |
| $P_0$ | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 |
| $P_1$ | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 4.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 8.0 ± 0.10 | 12.0 ± 0.10 |
| $P_2$ | 2.0 ± 0.05 | 2.0 ± 0.10 | 2.0 ± 0.05 | 2.0 ± 0.05 | 2.0 ± 0.05 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 | 2.0 ± 0.10 |
| $A_0$ | 0.95 ± 0.05 | 1.70 ± 0.1 | 1.95 ± 0.10 | 2.9 ± 0.10 | Table A9 | Table A9 | 5.11 ± 0.15 | 5.6 ± 0.23 | 6.9 ± 0.23 |
| $B_0$ | 1.85 ± 0.05 | 2.45 ± 0.1 | Table A9 | 3.50 ± 0.10 | Table A9 | Table A9 | 5.6 ± 0.23 | 8.1 ± 0.15 | 9.6 ± 0.15 |
| $B_1$ max | 4.35 | 4.35 | 4.35 | 4.35 | 6.15 | 12.1 | 12.1 | 12.1 | 12.1 |
| $D_0$ | 1.55 ± .05 | 1.55 ± .05 | 1.55 ± .05 | 1.55 ± .05 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 | 1.5 + 0.10/ -.00 |
| F | 3.50 ± 0.05 | 3.50 ± 0.05 | 3.50 ± 0.05 | 3.50 ± 0.05 | 5.50 ± 0.05 | 7.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 | 7.50 ± 0.10 |
| $E_1$ | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 | 1.75 ± 0.10 |
| $E_2$ min | 6.25 | 6.25 | 6.25 | 6.25 | 10.25 | 14.25 | 14.25 | 14.25 | 14.25 |
| T max | 0.3 | 0.3 | 0.3 | 0.3 | 0.35 | 0.35 | 0.4 | 0.4 | 0.4 |
| $T_1$ max | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| K0 | 0.90 ± 0.1 | Table A9 | Table A9 | 0.9 ± 0.1 | Table A9 | Table A9 | 1.8 ± 0.15 | 3.2 ± 0.15 | 3.4 ± 0.15 |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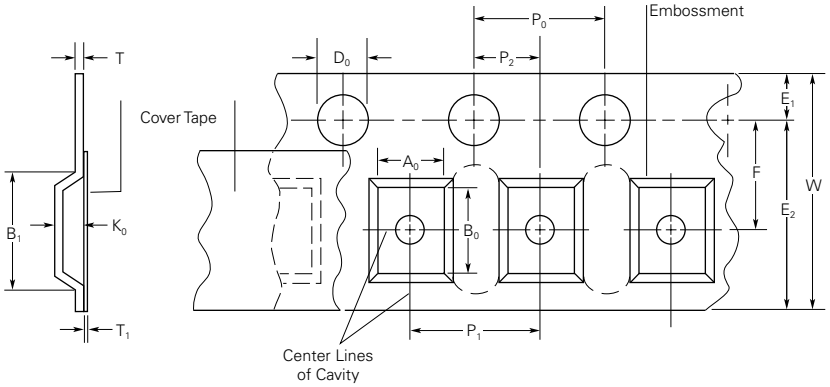
## Table A9 — Tape and Reel Specifications for picoASMDC/nanoASMDC/miniASMDC/ASMDC PolySwitch Automotive Devices (in Millimeters)

| Description | nanoASMDC010F<br>nanoASMDC012F<br>nanoASMDC016F | nanoASMDC020F<br>nanoASMDC025F<br>nanoASMDC035F<br>nanoASMDC050F/13.2 | miniASMDC010F~075F<br>miniASMDC110F/16<br>miniASMDC125F/16<br>miniASMDC150F/12<br>miniASMDC150F/16<br>miniASMDC200F/16 | miniASMDC075F/24<br>miniASMDC075F/33<br>miniASMDC110F/24<br>miniASMDC260F/12<br>miniASMDC260F/13.2<br>miniASMDC260F/16 | ASMDC030F<br>ASMDC050F<br>ASMDC075F<br>ASMDC125F/33 | ASMDC185F/33<br>ASMDC300F/24 |
|---|---|---|---|---|---|---|
| $A_0$ | 1.95 ± 0.1 | 1.95 ± 0.1 | 3.5 ± 0.1 | 3.7 ± 0.1 | 5.5 ± 0.1 | 5.35 ± 0.1 |
| $B_0$ | 3.5 ± 0.1 | 3.50 +0.1/-0.08 | 4.95 ± 0.1 | 4.9 ± 0.1 | 7.9 ± 0.1 | 7.85 ± 0.1 |
| $K_0$ | 1.27 ± 0.1 | 0.89 ± 0.1 | 0.9 ± 0.1 | 1.4 ± 0.1 | 0.9 ± 0.1 | 1.45 ± 0.1 |
| **Description** | **picoASMDC010S** | **picoASMDC012S** | **miniASMDC150F/24** | | | |
| $A_0$ | 1.70 ± 0.1 | 1.70 ± 0.1 | 3.7 ± 0.1 | | | |
| $B_0$ | 2.45 ± 0.1 | 2.45 ± 0.1 | 4.9 ± 0.1 | | | |
| $K_0$ | 1.12± 0.1 | 0.86 ± 0.1 | 1.78 ± 0.1 | | | |

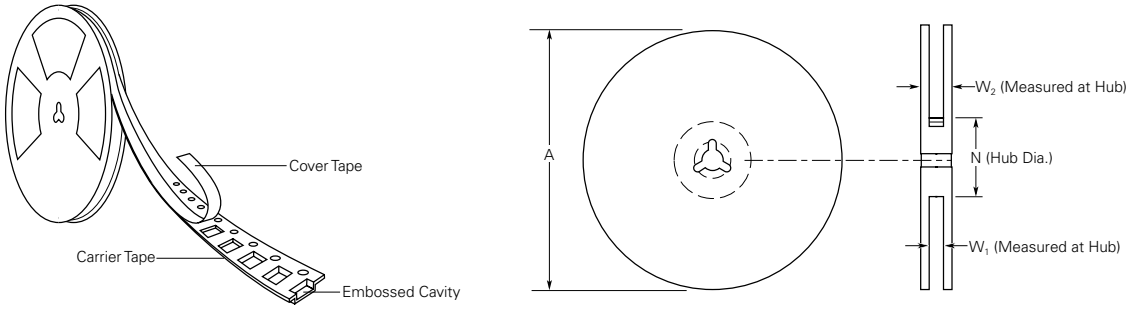
## Table A10— Reel Dimensions for AHS/ASMD/femtoASMDC/picoASMDC/nanoASMDC/microASMD/miniASMDC/ASMDC PolySwitch Automotive Devices (in Millimeters)

| Description | femtoASMDC<br>picoASMDC<br>nanoASMDC<br>microASMD | miniASMDC | ASMDC<br>AHS<br>ASMD |
|---|---|---|---|
| A max. | 185 | 185 | 330 |
| N min. | 50 | 50 | 50 |
| $W_1$ | 8.4 + 1.5/-.00 | 12.4 + 2.0/-.00 | 16.4 + 2.0/-.00 |
| $W_2$ max. | 14.4 | 18.4 | 22.4 |

## Figure A27 — EIA Referenced Taped Component Dimensions for AHS/ASMD/femtoASMDC/picoASMDC/nanoASMDC/microASMD/miniASMDC/ASMDC PolySwitch Automotive Devices (in Millimeters)




## Figure A28 — EIA Referenced Reel Dimensions for AHS/ASMD/femtoASMDC/picoASMDC/nanoASMDC/microASMD/miniASMDC/ASMDC PolySwitch Automotive Devices





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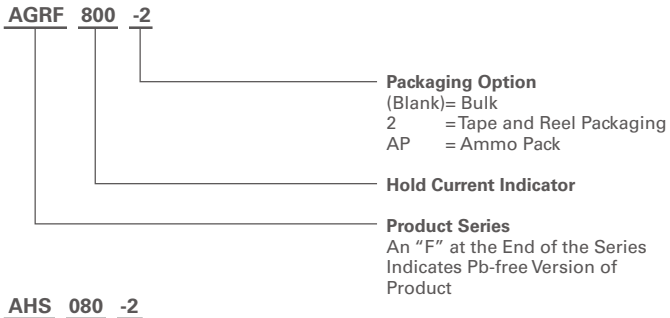
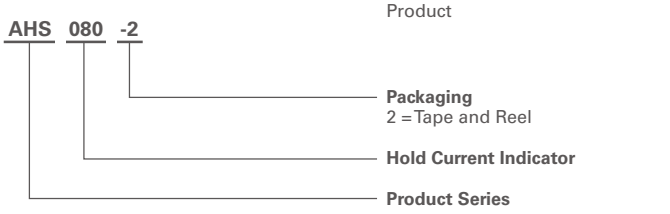
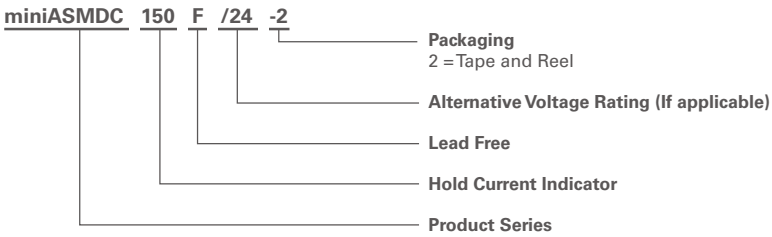
## Part Numbering System




## ⚠ Warning :

- Users should independently evaluate the suitability of and test each product selected for their own application.
- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- These devices are intended for protection against damage caused by occasional overcurrent or overtemperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Contamination of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- PPTC devices are not recommended for installation in applications where the device is constrained such that its PTC properties are inhibited, for example in rigid potting materials or in rigid housings, which lack adequate clearance to accommodate device expansion.
- Operation in circuits with a large inductance can generate a circuit voltage (Ldi/dt) above the rated voltage of the device.

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