

SCOPE: CMOS, TTL-COMPATIBLE ANALOG SWITCHES

| <u>Device Type</u> | <u>Generic Number</u> |
|--------------------|-----------------------|
| 01 | DG381AA(x)/883B |
| 02 | DG384AA(x)/883B |
| 03 | DG387AA(x)/883B |
| 04 | DG390AA(x)/883B |

Case Outline(s). The case outlines shall be designated in Mil-Std-1835 and as follows:

| <u>Outline Letter</u> | <u>Mil-Std-1835</u> | <u>Case Outline</u> | <u>Package Code</u> |
|-----------------------|------------------------|---------------------|---------------------|
| A | MACY1-X10 | 10 Pin TO-100 | A10 |
| K | GDIP1-T14 or CDIP2-T14 | 14 LEAD CERDIP | J14 |
| K | GDIP1-T16 or CDIP2-T16 | 16 LEAD CERDIP | J16 |

Absolute Maximum Ratings

| | |
|--|--|
| V+ to V- | 44V |
| V+ to GND | 25V |
| Digital Input Overage Range $\frac{1}{2}$ | (V ⁻ -4V) to (V ⁺ +4V) or 30mA whichever occurs first |
| Current, Any terminal except S or D | 30mA |
| Continuous Current, S or D | 30mA |
| Peak Current (pulsed at 1ms, 10% duty cycle max) | 100mA |
| Lead Temperature (soldering, 10 seconds) | +300°C |
| Storage Temperature | -65°C to +150°C |
| Continuous Power Dissipation | T _A =+70°C |
| 10 lead Can (derate 6.7mW/°C above +70°C) | 533mW |
| 14 lead CERDIP (derate 9.1mW/°C above +70°C) | 727mW |
| 16 lead CERDIP (derate 10.0mW/°C above +70°C) | 800mW |
| Junction Temperature T _J | +150°C |
| Thermal Resistance, Junction to Case, Θ_{JC} : | |
| Case Outline TO-100 Can | 45°C/W |
| Case Outline 14 lead CERDIP..... | 55°C/W |
| Case Outline 16 lead CERDIP | 50°C/W |
| Thermal Resistance, Junction to Ambient, Θ_{JA} : | |
| Case Outline TO-100 Can | 150°C/W |
| Case Outline 14 lead CERDIP..... | 110°C/W |
| Case Outline 16 lead CERDIP..... | 100°C/W |

Recommended Operating Conditions.

| | |
|---|-----------------|
| Ambient Operating Range (T _A) | -55°C to +125°C |
|---|-----------------|

NOTE 1: Signals on S_X, D_X, or IN_X exceeding V⁺ or V⁻ are clamped by internal diodes, and are also internally current limited to 25mA.

Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

TABLE 1. ELECTRICAL TESTS

| TEST | Symbol | CONDITIONS | | Group A Subgroup | Device type | Limits Min | Limits Max | Units |
|----------------------------|-----------------------|---|--|------------------|-------------|-------------|------------|-------|
| | | -55 °C ≤ T _A ≤ +125 °C V _S =+15V, V _D =-15V, GND=0V V _{INH} =4.0V, V _{INL} =0.8V Unless otherwise specified | | | | | | |
| SWITCH | | | | | | | | |
| Analog-Signal Range | V _{ANALOG} | V _S =±15V | | 1,2,3 | All | -15 | 15 | V |
| Drain-Source ON Resistance | r _{D(S)(ON)} | I _S =-10mA, V _D =10V, V _{IN} =0.8V or V _{IN} =4.0V | | 1,3 2 | All | | 50 75 | Ω |
| Drain-Source ON Resistance | r _{D(S)(ON)} | I _S =10mA, V _D =-10V, V _{IN} =0.8V or V _{IN} =4.0V | | 1,3 2 | All | | 50 75 | Ω |
| Source OFF Leakage Current | I _{S(OFF)} | V _S =14V, V _D =-14V, V _{IN} =0.8V or V _{IN} =4.0V | | 1 2 | All | -1 -100 | 1 100 | nA |
| Source OFF Leakage Current | I _{S(OFF)} | V _S =-14V, V _D =14V, V _{IN} =0.8V or V _{IN} =4.0V | | 1 2 | All | -1 -100 | 1 100 | nA |
| Drain OFF Leakage Current | I _{D(OFF)} | V _S =14V, V _D =-14V, V _{IN} =0.8V or V _{IN} =4.0V | | 1 2 | All | -1 -100 | 1 100 | nA |
| Drain OFF Leakage Current | I _{D(OFF)} | V _S =-14V, V _D =14V, V _{IN} =0.8V or V _{IN} =4.0V | | 1 2 | All | -1 -100 | 1 100 | nA |
| Drain ON Leakage Current | I _{D(ON)} | V _D =V _S =14V, V _{IN} =0.8V or 4.0V | | 1 2 | All | -2 -200 | 2 200 | nA |
| Drain ON Leakage Current | I _{D(ON)} | V _D =V _S =-14V, V _{IN} =0.8V or 4.0V | | 1 2 | All | -2 -200 | 2 200 | nA |
| INPUT | | | | | | | | |
| Input Current/Voltage High | I _{INH} | V _{IN} = 5.0V | | 1,2,3 | All | -1 | 1 | μA |
| | | V _{IN} =15V | | | | | | |
| Input Current/Voltage Low | I _{INL} | V _{IN} =0V | | 1,2,3 | All | -1 | | μA |
| SUPPLY | | | | | | | | |
| Positive Supply Current | I ₊ | V _{IN} =4.0V, one input; all others =0V | | 1 2,3 | All | | 0.5 1.0 | mA |
| | | V _{IN} =0.8V, all inputs | | 1 2,3 | All | | 10 100 | μA |
| Negative Supply Current | I ₋ | V _{IN} =15V, one input; all others =0V | | 1 2,3 | All | -10 -100 | | μA |
| | | V _{IN} =0.8V, all inputs | | 1 2,3 | All | -10 -100 | | |
| Turn ON time | t _{ON} | Figure 1 | | 9 10,11 | All | | 300 500 | ns |
| Turn OFF time | t _{OFF} | Figure 1 | | 9 10,11 | All | | 250 450 | ns |

FIGURE 1: SWITCHING TIME TEST CIRCUIT: See Commercial Data Sheet

| TRUTH TABLE | | | | TERMINAL CONNECTION | | | | |
|-----------------|--------------------|--------|------------|---------------------|-----------------|-----------------|-----------------|-----------------|
| Device Type | Logic | Switch | | TERMINAL NUMBER | 01 | 02 | 03 | 04 |
| 01 | 0 | ON | | | J14 | J16 | J14 | J16 |
| 01 | 1 | OFF | | 1 | S ₁ | D ₁ | NC | D ₁ |
| 02 | 0 | OFF | | 2 | D ₁ | NC | NC | NC |
| 02 | 1 | ON | | 3 | NC | D ₃ | D ₁ | D ₃ |
| 03 | 0 | OFF | Switch 1 | 4 | NC | S ₃ | S ₁ | S ₃ |
| 03 | 1 | ON | Switch 1 | 5 | IN ₁ | S ₄ | IN | S ₄ |
| 03 | 0 | ON | Switch 2 | 6 | V+ | D ₄ | V+ | D ₄ |
| 03 | 1 | OFF | Switch 2 | 7 | NC | NC | NC | NC |
| 04 | 0 | OFF | Switch 1,2 | 8 | GND | D ₂ | GND | D ₂ |
| 04 | 0 | ON | Switch 3,4 | 9 | V- | S ₂ | V- | S ₂ |
| 04 | 1 | ON | Switch 1,2 | 10 | IN ₂ | IN ₂ | NC | IN ₂ |
| 04 | 1 | OFF | Switch 3,4 | 11 | NC | V+ | S ₂ | V+ |
| | | | | 12 | NC | NC | D ₂ | NC |
| | | | | 13 | D ₂ | GND | NC | GND |
| | | | | 14 | S ₂ | V- | NC | V- |
| | | | | 15 | | IN ₁ | | IN ₁ |
| | | | | 16 | | S ₁ | | S ₁ |
| ORDERING | Information | | | TO-100 | | | | |
| 01 | DG381AAA | /883B | | 1 | D ₁ | | S ₁ | |
| 01 | DG381AAK | /883B | | 2 | S ₁ | | D ₁ | |
| 02 | DG384AAK | /883B | | 3 | IN | | IN ₁ | |
| 03 | DG387AAA | /883B | | 4 | V+ | | V+ | |
| 03 | DG387AAK | /883B | | 5 | NC | | NC | |
| 04 | DG390AAK | /883B | | 6 | GND | | GND | |
| | | | | 7 | V- | | V- | |
| | | | | 8 | NC | | IN ₂ | |
| | | | | 9 | S ₂ | | D ₂ | |
| | | | | 10 | D ₂ | | S ₂ | |

QUALITY ASSURANCE

Sampling and inspection procedures shall be in accordance with MIL-Prf-38535, Appendix A as specified in Mil-Std-883.

Screening shall be in accordance with Method 5004 of Mil-Std-883. Burn-in test Method 1015:

1. Test Condition, A, B, C, or D.
2. TA = +125°C minimum.
3. Interim and final electrical test requirements shall be specified in Table 2.

Quality conformance inspection shall be in accordance with Method 5005 of Mil-Std-883, including Groups A, B, C, and D inspection.

Group A inspection:

1. Tests as specified in Table 2.
2. Selected subgroups in Table 1, Method 5005 of Mil-Std-883 shall be omitted.

Group C and D inspections:

- a. End-point electrical parameters shall be specified in Table 1.
- b. Steady-state life test, Method 1005 of Mil-Std-883:
 1. Test condition A, B, C, D.
 2. TA = +125°C, minimum.
 3. Test duration, 1000 hours, except as permitted by Method 1005 of Mil-Std-883.

TABLE 2. ELECTRICAL TEST REQUIREMENTS

| Mil-Std-883 Test Requirements | Subgroups per Method 5005, Table 1 |
|--|------------------------------------|
| Interim Electric Parameters Method 5004 | 1 |
| Final Electrical Parameters Method 5005 | 1*, 2, 3, 9 |
| Group A Test Requirements Method 5005 | 1, 2, 3, 9, 10**, 11** |
| Group C and D End-Point Electrical Parameters Method 5005 | 1 |

* PDA applies to Subgroup 1 only.

** Subgroups 10 and 11, if not tested shall be guaranteed to the limits of Table 1.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

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- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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