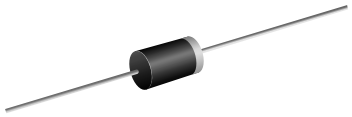
Glass Passivated Power Voltage-Regulating Diodes



DO-204AL (DO-41)

FEATURES

- Plastic MELF package
- Ideal for automated placement
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

PRIMARY CHARACTERISTICS	
V_Z	100 V to 200 V
P_D	1.5 W
I_R	0.5 µA
T_J max.	150 °C

MECHANICAL DATA

Case: DO-204AL (DO-41)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS compliant, commercial grade

Base P/NHE3 - RoHS compliant, high reliability/ automotive grade (AEC Q101 qualified)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

TYPE	ZENER VOLTAGE AT 5.0 mA		MAXIMUM ZENER DYNAMIC IMPEDANCE				MAXIMUM DC REVERSE LEAKAGE CURRENT AT V_R			MAXIMUM INSTANTANEOUS FORWARD VOLTAGE AT 0.50 A	MAXIMUM CONTINUOUS REGULATOR CURRENT (2)
	V_Z (V)		I_{ZT}	Z_{ZT}	I_{ZK}	Z_{ZK}	V_R	I_R AT 25 °C	I_R AT 100 °C	V_{FM}	I_{ZM}
	MIN.	MAX.	(mA)	(Ω)	(mA)	(Ω)	(V)	(µA)	(µA)	(V)	(mA)
Z4KE100	90	110	5.0	500	0.25	5000	72.0	0.5	100	1.0	15.0
Z4KE100A	95	105	5.0	500	0.25	5000	76.0	0.5	100	1.0	15.0
Z4KE110	99	121	5.0	600	0.25	5000	79.2	0.5	100	1.0	13.0
Z4KE110A	104	116	5.0	600	0.25	5000	83.2	0.5	100	1.0	13.0
Z4KE120	108	132	5.0	700	0.25	5000	86.4	0.5	100	1.0	12.0
Z4KE120A	114	126	5.0	700	0.25	5000	91.2	0.5	100	1.0	12.0
Z4KE130	117	143	5.0	800	0.25	5000	93.6	0.5	100	1.0	11.0
Z4KE130A	124	137	5.0	800	0.25	5000	99.2	0.5	100	1.0	11.0

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
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	V_Z (V)		I_{ZT}	Z_{ZT}	I_{ZK}	Z_{ZK}	V_R	I_R AT 25 °C	I_R AT 100 °C	V_{FM}	I_{ZM}
	MIN.	MAX.	(mA)	(Ω)	(mA)	(Ω)	(V)	(μA)	(μA)	(V)	(mA)
Z4KE140	126	154	5.0	900	0.25	5000	100	0.5	100	1.0	10.7
Z4KE140A	133	147	5.0	900	0.25	5500	106.4	0.5	100	1.0	10.7
Z4KE150	135	165	5.0	1000	0.25	6000	108.0	0.5	100	1.0	10.0
Z4KE150A	142	158	5.0	1000	0.25	6000	113.6	0.5	100	1.0	10.0
Z4KE160	144	176	5.0	1100	0.25	6500	115.2	0.5	100	1.0	9.0
Z4KE160A	152	168	5.0	1100	0.25	6500	121.6	0.5	100	1.0	9.0
Z4KE170	153	187	5.0	1200	0.25	7000	122.4	0.5	100	1.0	8.8
Z4KE170A	162	179	5.0	1200	0.25	7000	129.6	0.5	100	1.0	8.0
Z4KE180	162	198	5.0	1300	0.25	7000	129.6	0.5	100	1.0	8.0
Z4KE180A	171	189	5.0	1300	0.25	7000	136.8	0.5	100	1.0	8.0
Z4KE190	171	209	5.0	1400	0.25	7500	136.8	0.5	100	1.0	7.9
Z4KE190A	180	200	5.0	1400	0.25	7500	144.0	0.5	100	1.0	7.9
Z4KE200	180	220	5.0	1500	0.25	8000	144.0	0.5	100	1.0	7.0
Z4KE200A	190	210	5.0	1500	0.25	8000	152.0	0.5	100	1.0	7.0

Notes:

(1) Standard voltage tolerance is ± 10 %, suffix “A” is ± 5 %

(2) Maximum power dissipation is 1.5 W at T_L = 75 °C with lead length 0.375" (9.5 mm)

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
Z4KE100-E3/54	0.350	54	5500	13" diameter paper tape and reel
Z4KE100HE3/54 (1)	0.350	54	5500	13" diameter paper tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

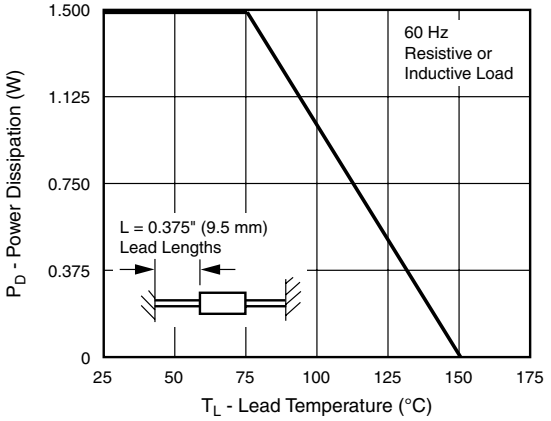


Figure 1. Power Derating Curve

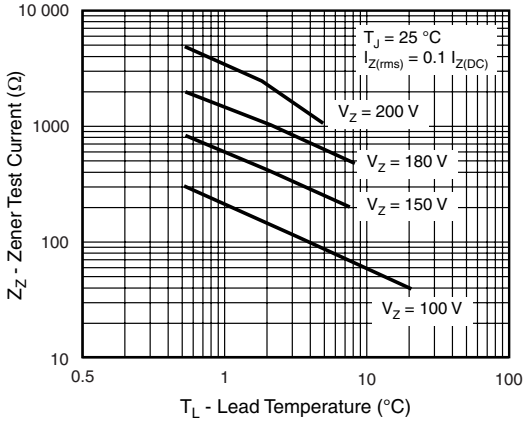


Figure 2. Typical Zener Impedance

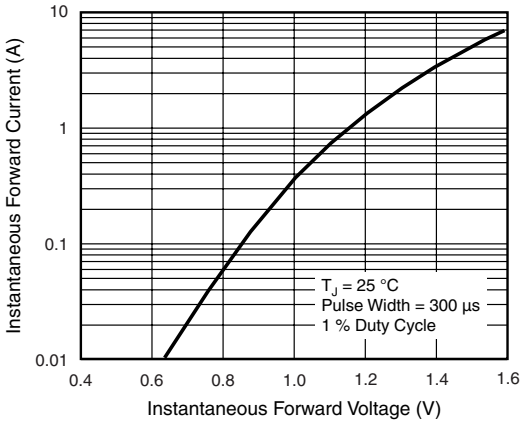


Figure 3. Typical Instantaneous Forward Characteristics

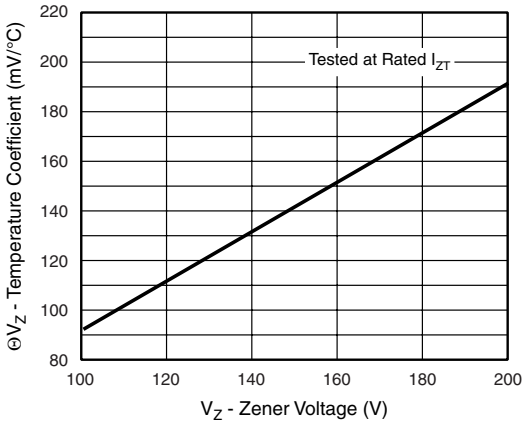


Figure 5. Typical Temperature Coefficients

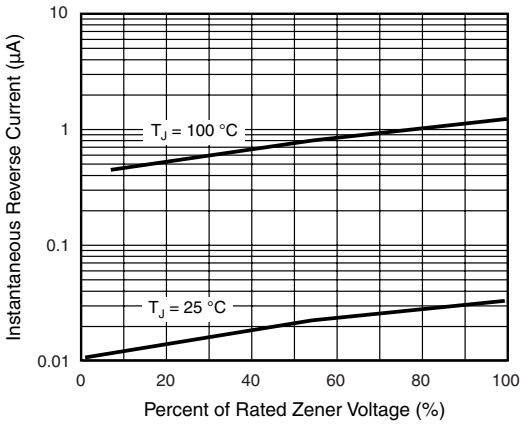


Figure 4. Typical Reverse Characteristics

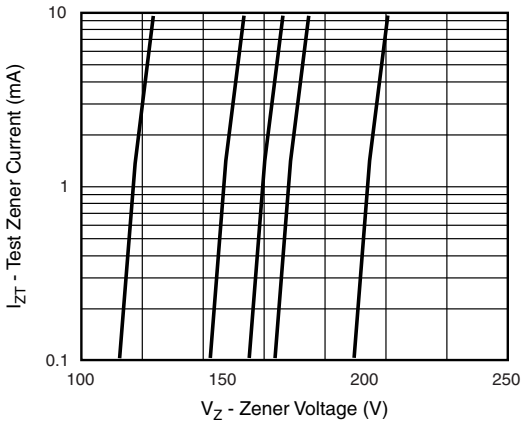
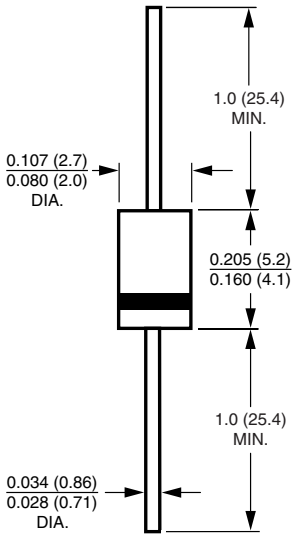


Figure 6. Typical Zener Voltage

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



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