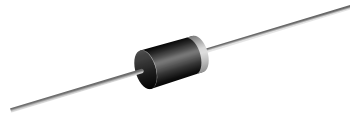


## Glass Passivated Power Voltage-Regulating Diodes



DO-204AL (DO-41)

### FEATURES

- Plastic MELF package
- Ideal for automated placement
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- Typical  $I_R$  less than 0.1  $\mu\text{A}$
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

### MECHANICAL DATA

**Case:** DO-204AL (DO-41)

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

**Polarity:** Color band denotes cathode end

MAJOR RATINGS AND CHARACTERISTICS	
$V_Z$	100 V to 200 V
$P_D$	1.5 W
$I_R$	0.5 $\mu\text{A}$
$T_j$ max.	150 °C

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 <sup>(2)</sup>
	$V_Z$ (V)		$I_{ZT}$ (mA)	$Z_{ZT}$ ( $\Omega$ )	$I_{ZK}$ (mA)	$Z_{ZK}$ ( $\Omega$ )	$V_R$ (V)	$I_R$ AT 25 °C ( $\mu\text{A}$ )	$I_R$ AT 100 °C ( $\mu\text{A}$ )	$V_{FM}$ (V)	$I_{ZM}$ (mA)
	MIN	MAX									
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

# Z4KE100 thru Z4KE200A

Vishay General Semiconductor



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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 <sup>(2)</sup>
	$V_Z$ (V)		$I_{ZT}$ (mA)	$Z_{ZT}$ ( $\Omega$ )	$I_{ZK}$ (mA)	$Z_{ZK}$ ( $\Omega$ )	$V_R$ (V)	$I_R$ AT 25 $^\circ\text{C}$ ( $\mu\text{A}$ )	$I_R$ AT 100 $^\circ\text{C}$ ( $\mu\text{A}$ )	$V_{FM}$ (V)	$I_{ZM}$ (mA)
	MIN	MAX									
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
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

**Note:**

- (1) Standard voltage tolerance is  $\pm 10\%$ , suffix "A" is  $\pm 5\%$
- (2) Maximum power dissipation is 1.5 watts at  $T_L = 75\text{ }^\circ\text{C}$  with lead length 0.375" (9.5 mm)

<b>ORDERING INFORMATION</b>				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
Z4KE100-E3/54	0.350	54	4000	13" Diameter Paper Tape & Reel

## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

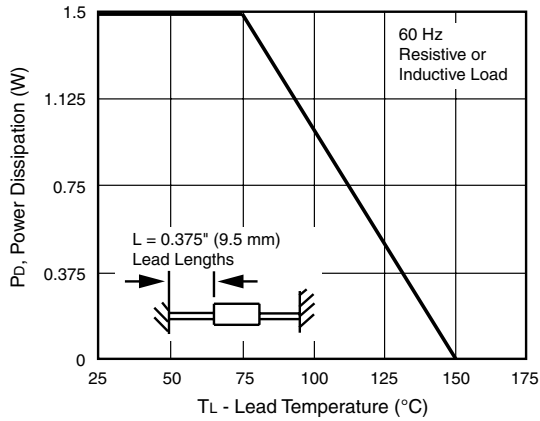


Figure 1. Power Derating Curve

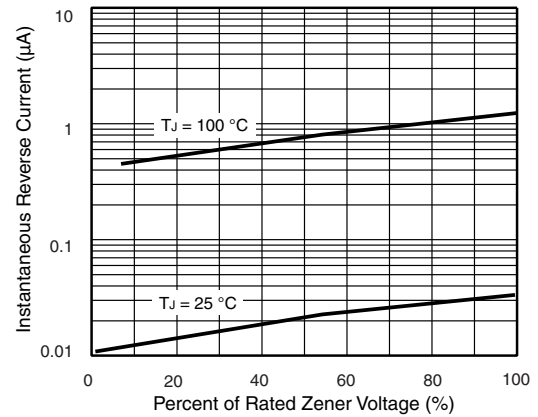


Figure 4. Typical Reverse Characteristics

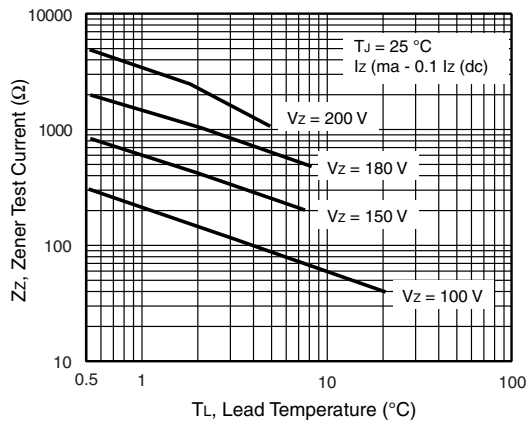


Figure 2. Typical Zener Impedance

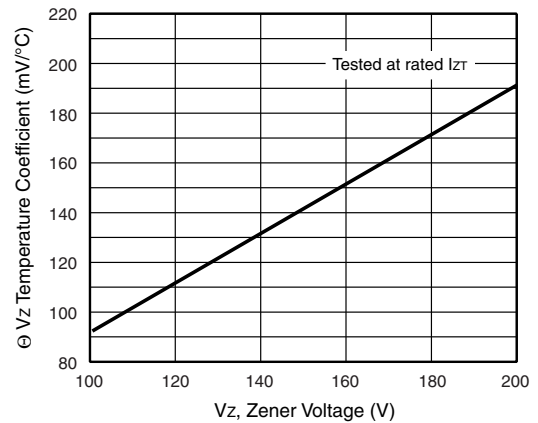


Figure 5. Typical Temperature Coefficients

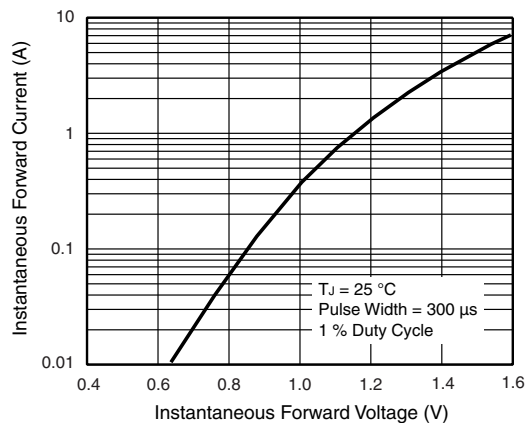


Figure 3. Typical Instantaneous Forward Characteristics

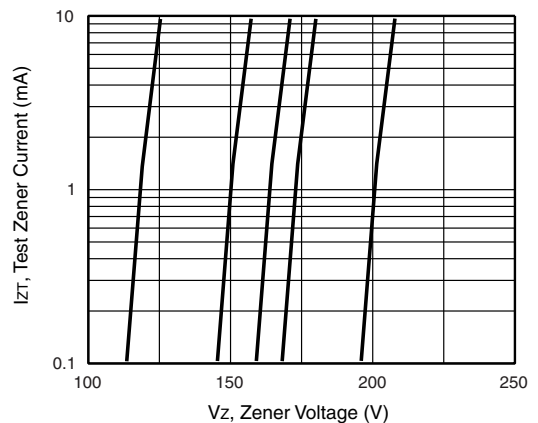
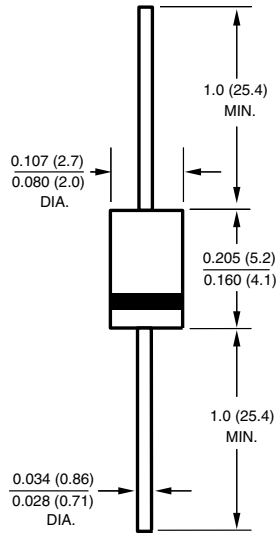


Figure 6. Typical Zener Voltage

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-204AL (DO-41)**





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