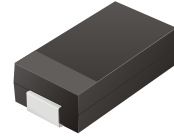


# SURFACE MOUNT ZENER DIODE

## CZRA4741 - CZRA4764

Voltage: 11- 100 Volts  
Power: 1.0 Watts



### FEATURES

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Typical  $I_R$  less than 5.0uA above 11V
- High temperature soldering :  
260°C / 10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O

### MECHANICAL DATA

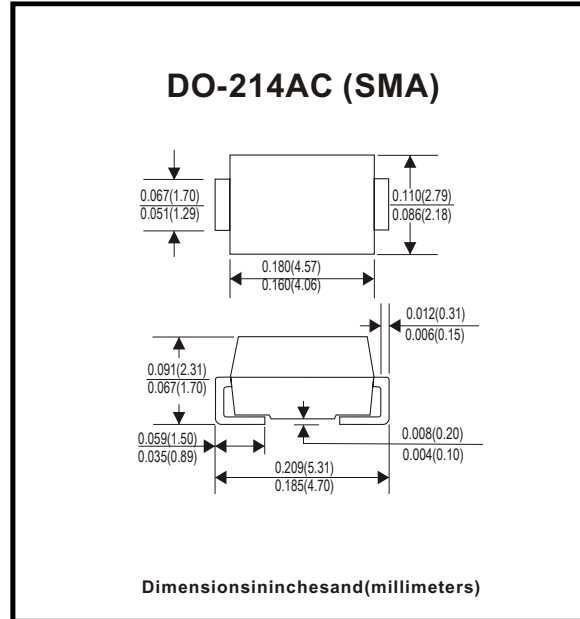
Case: JEDEC DO-214AC, Molded plastic over passivated junction

Terminals: Solder plated, solderable per MIL-STD-750, method 2026

Polarity: Color band denotes positive end(cathode)

Standard Packaging: 12mm tape(EIA-481)

Weight: 0.002 ounce, 0.064 gram



### Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on $T_A=50^\circ\text{C}$ (Note A) Derate above 50°C	$P_D$	1.0 6.67	Watts mW/°C
Peak forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Note B)	$I_{FSM}$	10	Amps
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

NOTES:

A. Mounted on 5.0mm<sup>2</sup> (.013mm thick) land areas.

B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

<b>ELECTRICAL CHARACTERISTICS</b>								
(T <sub>A</sub> =25°C unless otherwise noted) (V <sub>F</sub> =1.2Volts Max, I <sub>F</sub> =200mA for all types.)								
Device (Note 1.)	Nominal Zener Voltage V <sub>Z</sub> @ I <sub>ZT</sub> (Note 2, 3)	Test current I <sub>ZT</sub>	Maximum Zener Impedance (Note 4)			Leakage Current		Surge Current @T <sub>A</sub> =25°C (Note 5)
			Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	
	(Volts)	(mA)	(Ohms)	(Ohms)	(mA)	(uA)	(Volts)	I <sub>r</sub> - mA
CZRA4741	11	23	8	700	0.25	5	8.4	414
CZRA4742	12	21	9	700	0.25	5	9.1	380
CZRA4743	13	19	10	700	0.25	5	9.9	344
CZRA4744	15	17	14	700	0.25	5	11.4	304
CZRA4745	16	15.5	16	700	0.25	5	12.2	285
CZRA4746	18	14	20	750	0.25	5	13.7	250
CZRA4747	20	12.5	22	750	0.25	5	15.2	225
CZRA4748	22	11.5	23	750	0.25	5	16.7	205
CZRA4749	24	10.5	25	750	0.25	5	18.2	190
CZRA4750	27	9.5	35	750	0.25	5	20.6	170
CZRA4751	30	8.5	40	1000	0.25	5	22.8	150
CZRA4752	33	7.5	45	1000	0.25	5	25.1	135
CZRA4753	36	7	50	1000	0.25	5	27.4	125
CZRA4754	39	6.5	60	1000	0.25	5	29.7	115
CZRA4755	43	6	70	1500	0.25	5	32.7	110
CZRA4756	47	5.5	80	1500	0.25	5	35.8	95
CZRA4757	51	5	95	1500	0.25	5	38.8	90
CZRA4758	56	4.5	110	2000	0.25	5	42.6	80
CZRA4759	62	4	125	2000	0.25	5	47.1	70
CZRA4760	68	3.7	150	2000	0.25	5	51.7	65
CZRA4761	75	3.3	175	2000	0.25	5	56	60
CZRA4762	82	3	200	3000	0.25	5	62.2	55
CZRA4763	91	2.8	250	3000	0.25	5	69.2	50
CZRA4764	100	2.5	350	3000	0.25	5	76	45

NOTE:

1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ± 5%.
2. Specials Available Include:
  - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
  - B. Matched sets.
3. Zener Voltage (V<sub>Z</sub>) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T<sub>L</sub>) at 30°C ± 1°C, from the diode body.
4. Zener Impedance (Z<sub>Z</sub>) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>.
5. Surge Current (I<sub>r</sub>) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I<sub>ZT</sub>, per JEDEC registration; however, actual device capability is as described in Figure 5.

**RATING AND CHARACTERISTICS CURVES**  
**CZRA4741 THRU CZRA4764**

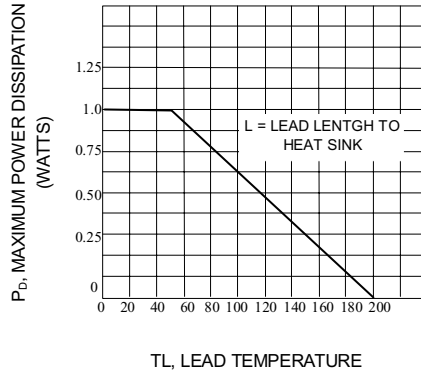


Fig. 1-POWER TEMPERATURE DERATING CURVE

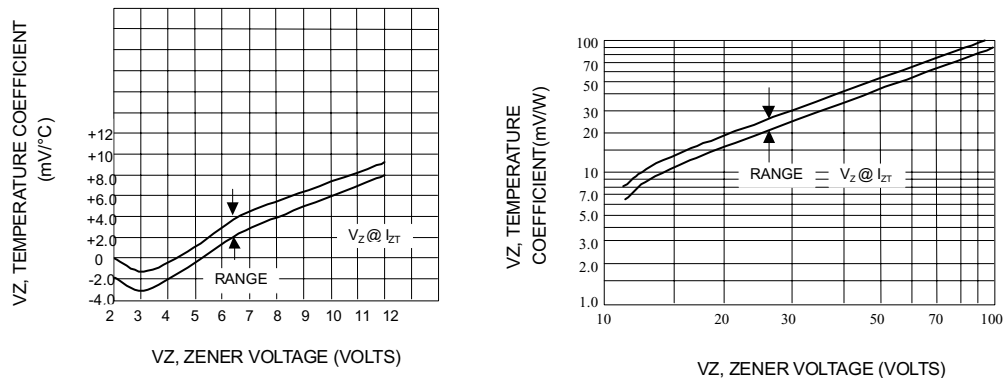


Fig. 2-TEMPERATURE COEFFICIENTS  
(-55°C TO +150°C TEMPERATURE RANGE; 90% OF THE UNITS ARE IN THE RANGES INDICATED.)

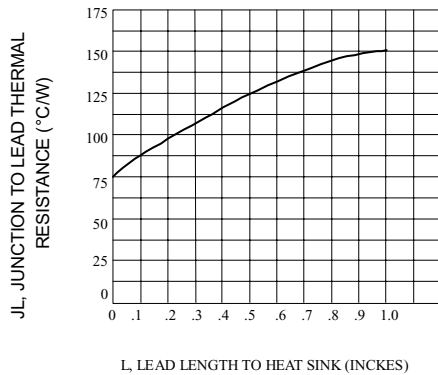


Fig.3-TYPICAL THERMAL RESISTANCE VERSUS LEAD LENGTH

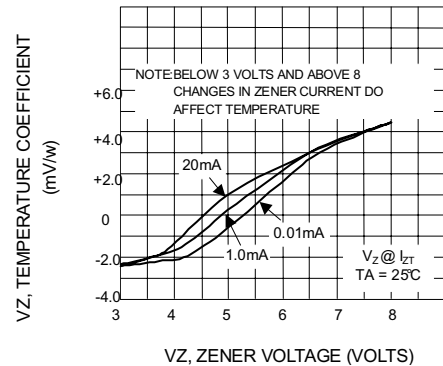
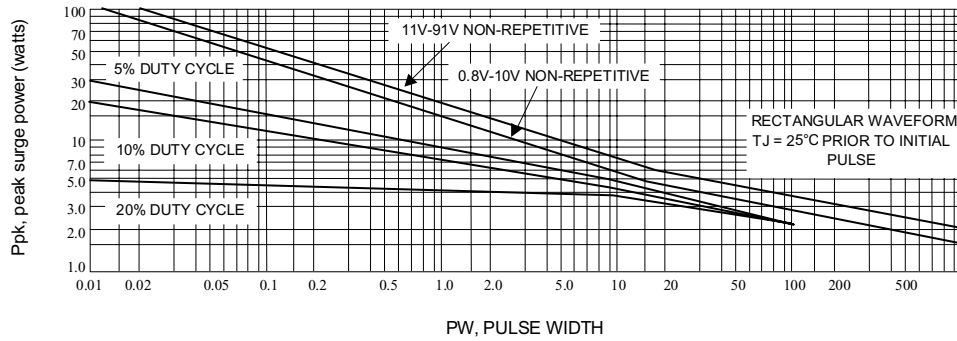


Fig. 4-EFFECT OF ZENER CURRENT

## RATING AND CHARACTERISTICS CURVES CZRA4741 THRU CZRA4764



This graph represents 90 percentile data point.  
For worst-case design characteristics, multiply surge power by 2/3

Fig. 5-MAXIMUM SURGE POWER

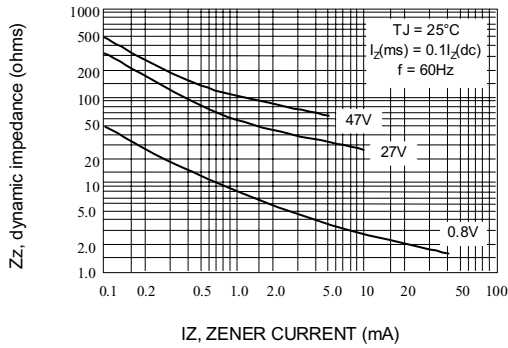


Fig. 6-EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

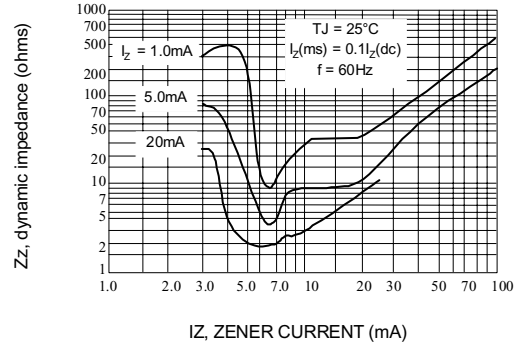


Fig. 7-EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE