



# DATA SHEET

## 1SMA4728~1SMA4764

### SURFACE MOUNT SILICON ZENER DIODE

**VOLTAGE** 3.3 to 100 Volts **POWER** 1.0 Watts

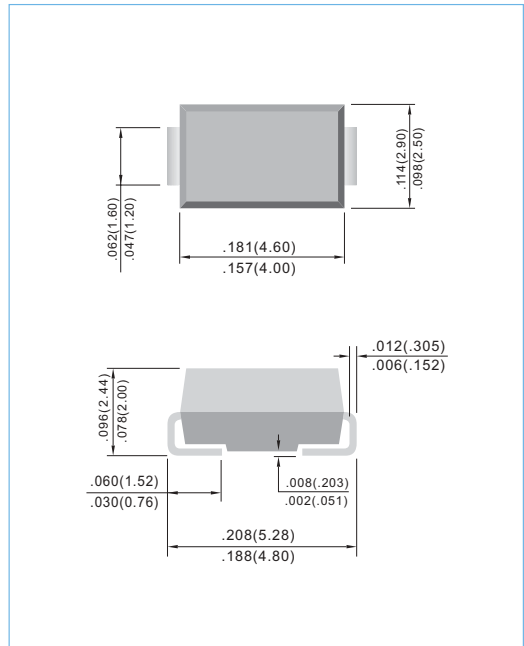
**SMA/DO-214AC** Unit: inch (mm)

#### 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 5.0 $\mu$ A above 11V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Pb free product are available : 99% Sn above can meet Rohs environment substance directive request

#### MECHANICAL DATA

Case: JEDEC DO-214AC, Molded plastic over passivated junction.  
 Terminals: Solder plated, solderable per MIL-STD-202G, Method 208  
 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.

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

#### NOTES:

- Mounted on 5.0mm2 (.013mm thick) land areas.
- Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .



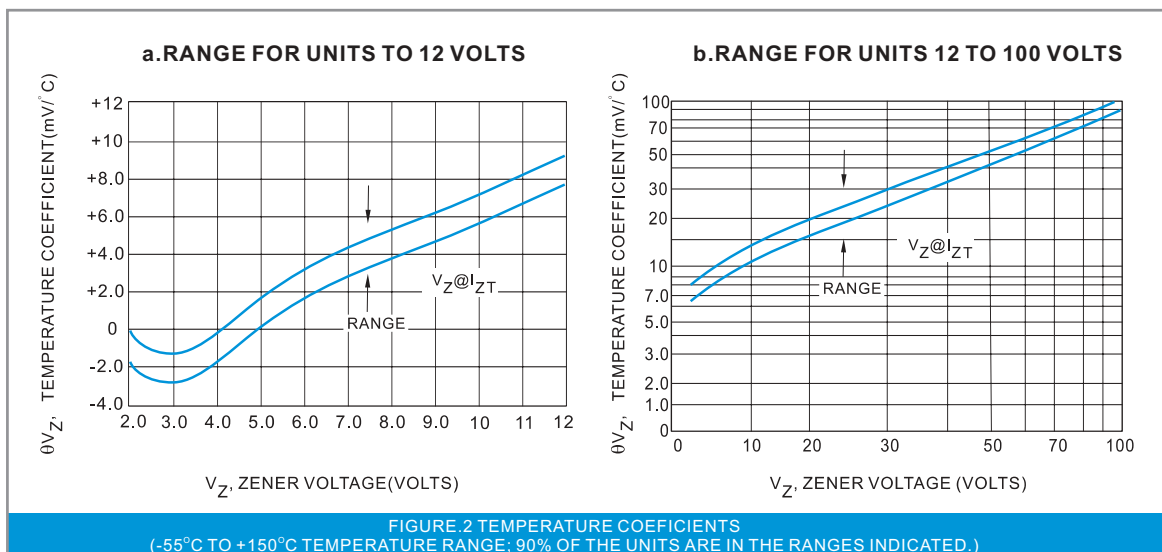
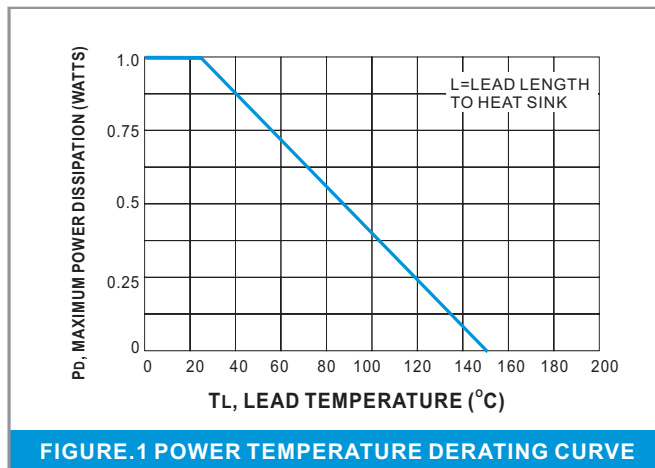
Part Number	$V_Z @ I_{ZT}$			Maximum Zener Impedance				Maximum Leakage Current		Marking Code	Package
				$Z_{ZT} @ I_{ZT}$		$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$			
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA	V		
1.0 Watt ZENER Diodes -- continued											
1SMA4728	3.3	3.1	3.5	10.0	76.0	400	1.00	100	1.0	728B	SMA
1SMA4729	3.6	3.4	3.8	10.0	69.0	400	1.00	100	1.0	729B	SMA
1SMA4730	3.9	3.7	4.1	9.0	64.0	400	1.00	50	1.0	730B	SMA
1SMA4731	4.3	4.1	4.5	9.0	58.0	400	1.00	10	1.0	731B	SMA
1SMA4732	4.7	4.5	4.9	8.0	53.0	500	1.00	10	1.0	732B	SMA
1SMA4733	5.1	4.8	5.4	7.0	49.0	550	1.00	10	1.0	733B	SMA
1SMA4734	5.6	5.3	5.9	5.0	45.0	600	1.00	10	2.0	734B	SMA
1SMA4735	6.2	5.9	6.5	2.0	41.0	700	1.00	10	3.0	735B	SMA
1SMA4736	6.8	6.5	7.1	3.5	37.0	700	1.00	10	4.0	736B	SMA
1SMA4737	7.5	7.1	7.9	4.0	34.0	700	0.50	10	5.0	737B	SMA
1SMA4738	8.2	7.8	8.6	4.5	31.0	700	0.50	10	6.0	738B	SMA
1SAM4739	9.1	8.6	9.6	5.0	28.0	700	0.50	10	7.0	739B	SMA
1SMA4740	10.0	9.5	10.5	7.0	25.0	700	0.25	10	7.6	740B	SMA
1SMA4741	11.0	10.5	11.6	8.0	23.0	700	0.25	0.1	8.4	741B	SMA
1SMA4742	12.0	11.4	12.6	9.0	21.0	700	0.25	0.1	9.1	742B	SMA
1SMA4743	13.0	12.4	13.7	10.0	19.0	700	0.25	0.1	9.9	743B	SMA
1SMA4744	15.0	14.3	15.8	14.0	17.0	700	0.25	0.1	11.4	744B	SMA
1SMA4745	16.0	15.2	16.8	16.0	15.5	700	0.25	0.1	12.2	745B	SMA
1SMA4746	18.0	17.1	18.9	20.0	14.0	750	0.25	0.1	13.7	746B	SMA
1SMA4747	20.0	19.0	21.0	22.0	12.5	750	0.25	0.1	15.2	747B	SMA
1SMA4748	22.0	20.9	23.1	23.0	11.5	750	0.25	0.1	16.7	748B	SMA
1SMA4749	24.0	22.8	25.2	25.0	10.5	750	0.25	0.1	18.2	749B	SMA
1SMA4750	27.0	25.7	28.4	35.0	9.5	750	0.25	0.1	20.6	750B	SMA
1SMA4751	30.0	28.5	31.5	40.0	8.5	1000	0.25	0.1	22.8	751B	SMA
1SMA4752	33.0	31.4	34.7	45.0	7.5	1000	0.25	0.1	25.1	752B	SMA
1SMA4753	36.0	34.2	37.8	50.0	7.0	1000	0.25	0.1	27.4	753B	SMA
1SMA4754	39.0	37.1	41	60.0	6.5	1000	0.25	0.1	29.7	754B	SMA
1SMA4755	43.0	40.9	45.2	70.0	6.0	1500	0.25	0.1	32.7	755B	SMA
1SMA4756	47.0	44.7	49.4	80.0	5.5	1500	0.25	0.1	35.8	756B	SMA
1SMA4757	51.0	48.5	53.6	95.0	5.0	1500	0.25	0.1	38.8	757B	SMA
1SMA4758	56.0	53.2	58.8	110	4.5	2000	0.25	0.1	42.6	758B	SMA
1SMA4759	62.0	58.9	65.1	125	4.0	2000	0.25	0.1	47.1	759B	SMA
1SMA4760	68.0	64.6	71.4	150	3.7	2000	0.25	0.1	51.7	760B	SMA
1SMA4761	75.0	71.3	78.8	175	3.3	2000	0.25	0.1	56.0	761B	SMA
1SMA4762	82.0	77.9	86.1	200	3.0	3000	0.25	0.1	62.2	762B	SMA
1SMA4763	91.0	86.5	95.6	250	2.8	3000	0.25	0.1	69.2	763B	SMA
1SMA4764	100	95.0	105	350	2.5	3000	0.25	0.1	76.0	764B	SMA

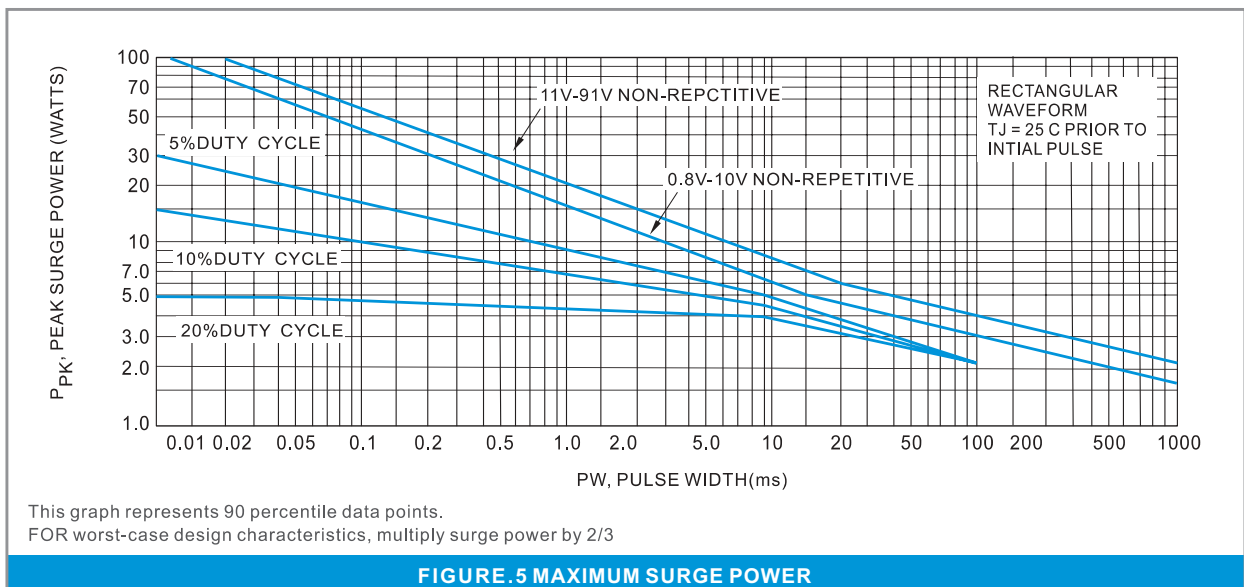
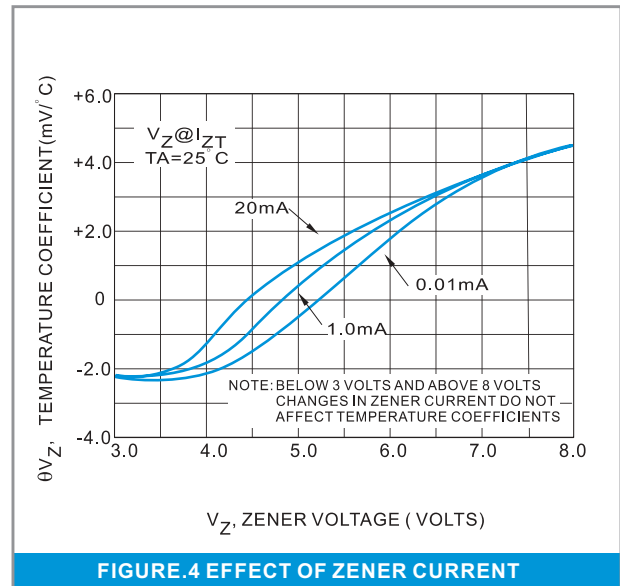
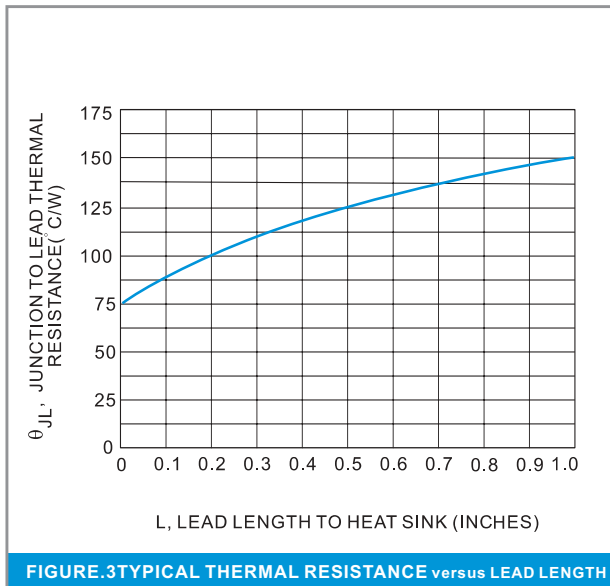


**NOTE:**

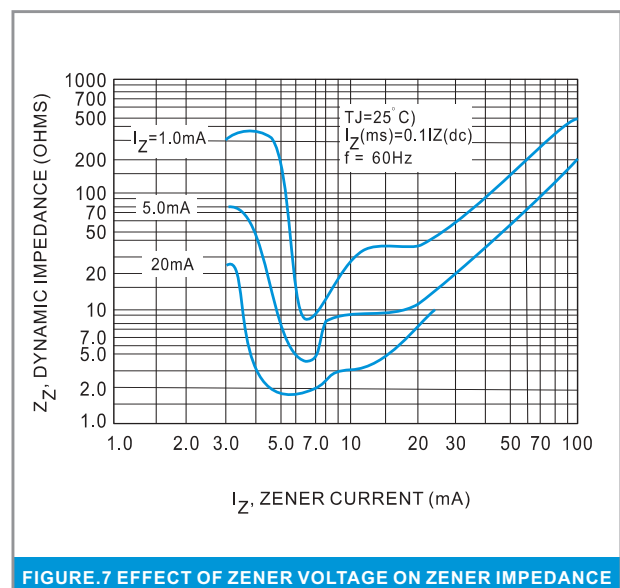
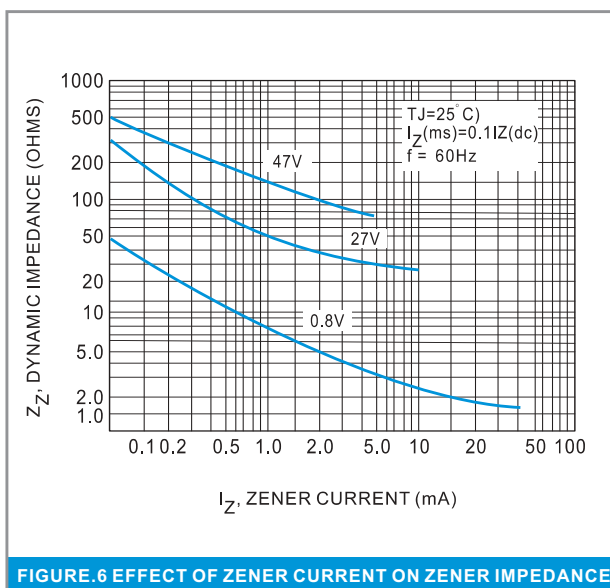
1. Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$
2. Specials Available Include:
  - A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
  - B. Matched sets.
3. Zener Voltage ( $V_Z$ ) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature ( $T_L$ ) at  $30^\circ\text{C} \pm 1^\circ\text{C}$ , from the diode body.
4. Zener Impedance ( $Z_Z$ ) 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 ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ .
5. Surge Current ( $I_r$ ) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2

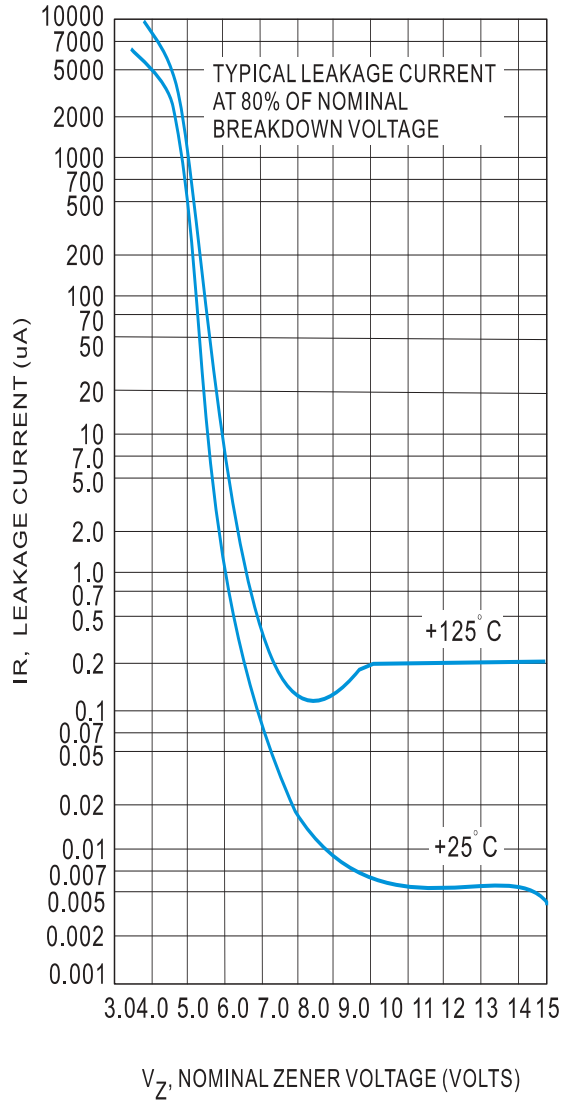
**RATING AND CHARACTERISTICS CURVES**



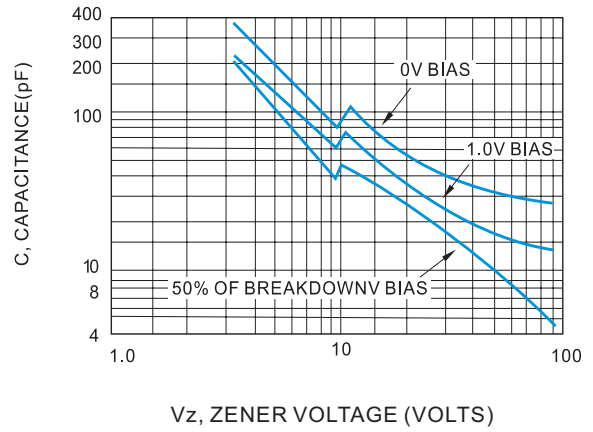


This graph represents 90 percentile data points.  
FOR worst-case design characteristics, multiply surge power by 2/3

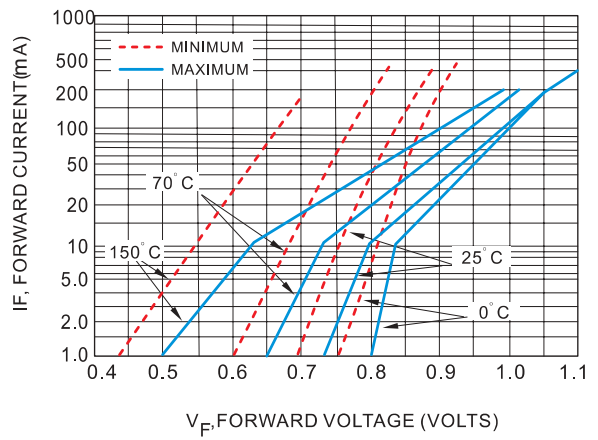




**FIGURE.8 TYPICAL LEAKAGE CURRENT**



**FIGURE.9 TYPICAL CAPACITANCE versus Vz**



**FIGURE.10 TYPICAL FORWARD CHARACTERISTICS**