

# 1SMA4728-AU~1SMA4757-AU

## SURFACE MOUNT SILICON ZENERDIODE

**VOLTAGE** 3.3 to 51 Volt    **POWER** 1 Watt

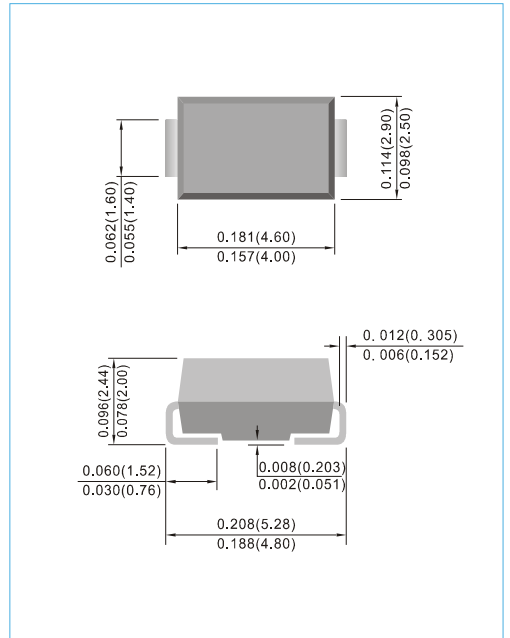
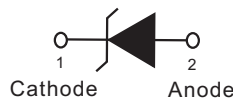
**SMA / DO-214AC**    Unit : inch(mm)

### FEATURES

- For surface mounted applications in order to optimize board space
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

### 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 cathode end
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.0023 ounces, 0.0679 grams



## 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 °C	$P_D$	1.0	Watts
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	10	Amps
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 150	°C

### NOTES:

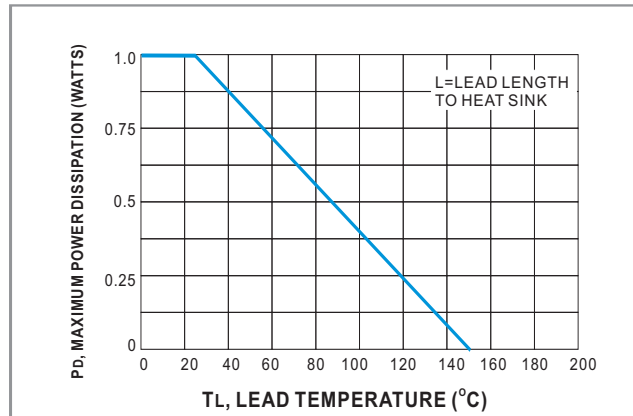
- Mounted on 5mm<sup>2</sup> (0.013mm thick) land areas.
- Measured on 8.3ms, and single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of ± 5%.

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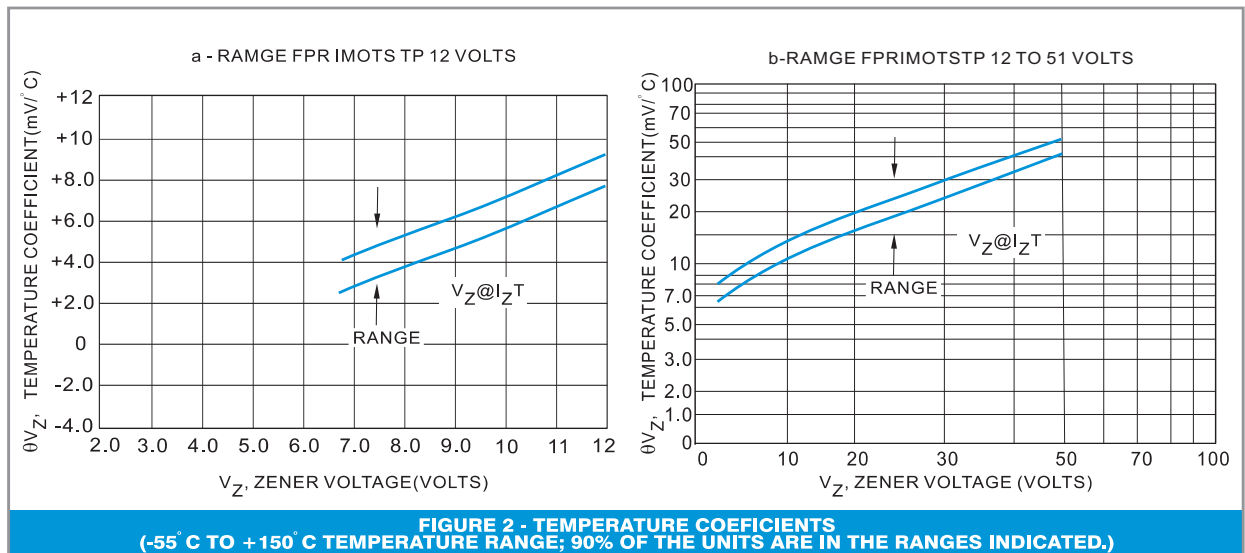
Part Number	Nominal Zener Voltage			Maximum Zener Impedance				Max Reverse Leakage Current		Marking Code
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>		
	Nom. V	Min. V	Max. V	Ω	mA	Ω	mA	μA Max.	V	
1SMA4728-AU	3.3	3.1	3.5	10	76	400	1	100	1	728B
1SMA4730-AU	3.9	3.7	4.1	9	64	400	1	50	1	730B
1SMA4731-AU	4.3	4.1	4.5	9	58	400	1	10	1	731B
1SMA4732-AU	4.7	4.5	4.9	8	53	500	1	10	1	732B
1SMA4733-AU	5.1	4.8	5.4	7	49	550	1	10	1	733B
1SMA4734-AU	5.6	5.3	5.9	5	45	600	1	10	2	734B
1SMA4735-AU	6.2	5.9	6.5	2	41	700	1	10	3	735B
1SMA4736-AU	6.8	6.46	7.14	3.5	37	700	1	5	4	736B
1SMA4737-AU	7.5	7.13	7.88	4	34	700	0.5	5	5	737B
1SMA4738-AU	8.2	7.79	8.61	4.5	31	700	0.5	5	6	738B
1SMA4739-AU	9.1	8.65	9.56	5	28	700	0.5	0.5	7	739B
1SMA4740-AU	10	9.5	10.5	7	25	700	0.25	0.5	7.6	740B
1SMA4741-AU	11	10.45	11.55	8	23	700	0.25	0.1	8.4	741B
1SMA4742-AU	12	11.4	12.6	9	21	700	0.25	0.1	9.1	742B
1SMA4743-AU	13	12.35	13.65	10	19	700	0.25	0.1	9.9	743B
1SMA4744-AU	15	14.25	15.75	14	17	700	0.25	0.1	11.4	744B
1SMA4745-AU	16	15.2	16.8	16	15.5	700	0.25	0.1	12.2	745B
1SMA4746-AU	18	17.1	18.9	20	14	750	0.25	0.1	13.7	746B
1SMA4747-AU	20	19	21	22	12.5	750	0.25	0.1	15.2	747B
1SMA4748-AU	22	20.9	23.1	23	11.5	750	0.25	0.1	16.7	748B
1SMA4749-AU	24	22.8	25.2	25	10.5	750	0.25	0.1	18.2	749B
1SMA4750-AU	27	25.65	28.35	35	9.5	750	0.25	0.1	20.6	750B
1SMA4751-AU	30	28.5	31.5	40	8.5	1000	0.25	0.1	22.8	751B
1SMA4752-AU	33	31.35	34.65	45	7.5	1000	0.25	0.1	25.1	752B
1SMA4753-AU	36	34.2	37.8	50	7	1000	0.25	0.1	27.4	753B
1SMA4754-AU	39	37.05	40.95	60	6.5	1000	0.25	0.1	29.7	754B
1SMA4755-AU	43	40.85	45.15	70	6	1500	0.25	0.1	32.7	755B
1SMA4756-AU	47	44.65	49.35	80	5.5	1500	0.25	0.1	35.8	756B
1SMA4757-AU	51	48.45	53.55	95	5	1500	0.25	0.1	38.8	757B

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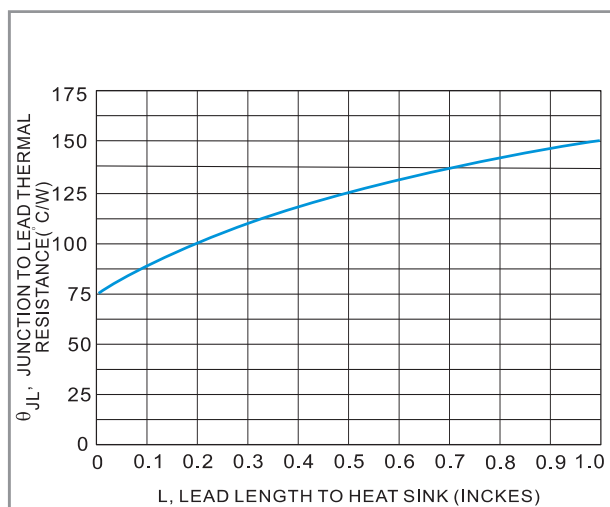
## RATING AND CHARACTERISTICS CURVES



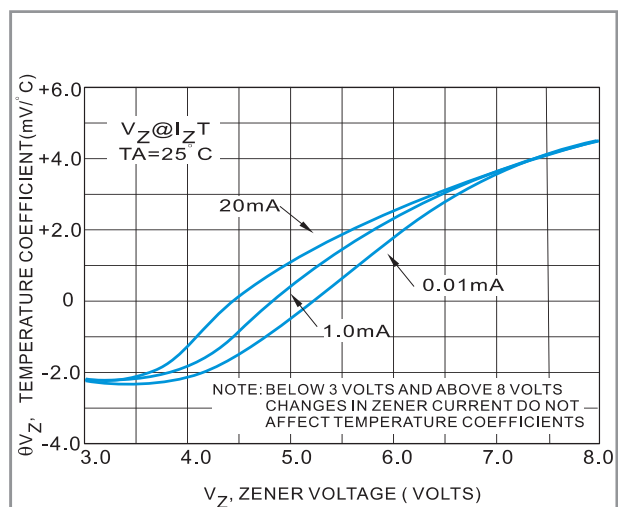
**FIGURE.1 POWER TEMPERATURE DERATING CURVE**



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

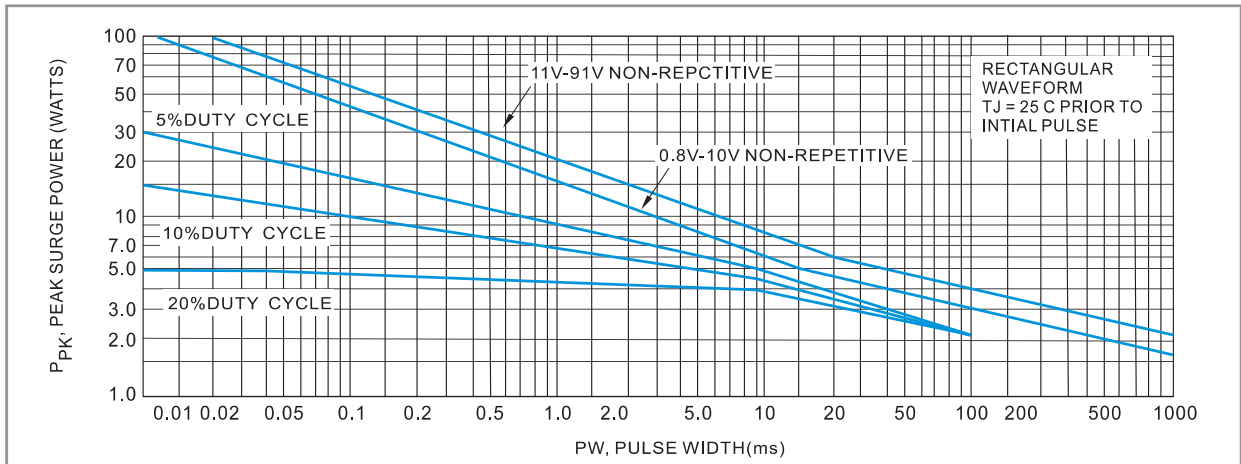


**FIGURE 3 - TYPICAL THERMAL RESISTANCE versus LEAD LENGTH**



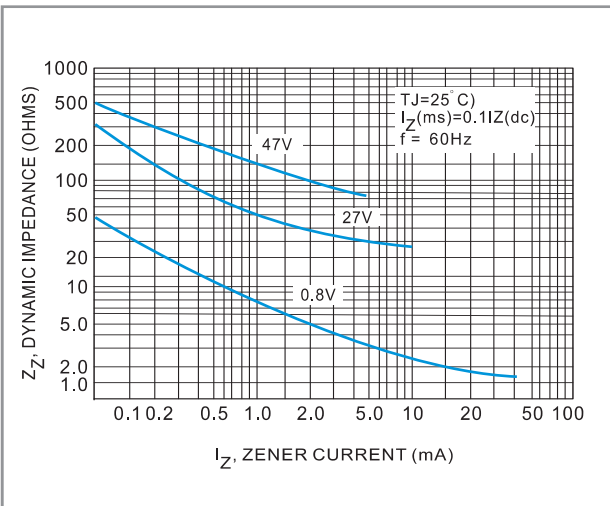
**FIGURE 4 - EFFECT OF ZENER CURRENT**

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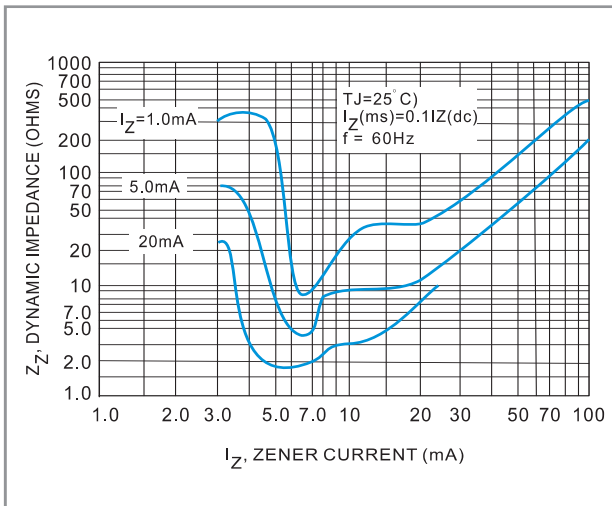


This graph represents 90 percentile data points.  
FOR worst-case design characteristics, multiply surge power by 2/3

**FIGURE 5 - MAXIMUM SURGE POWER**

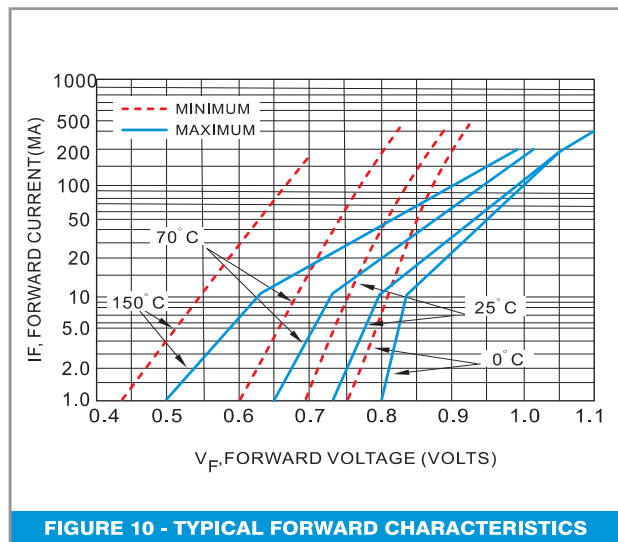
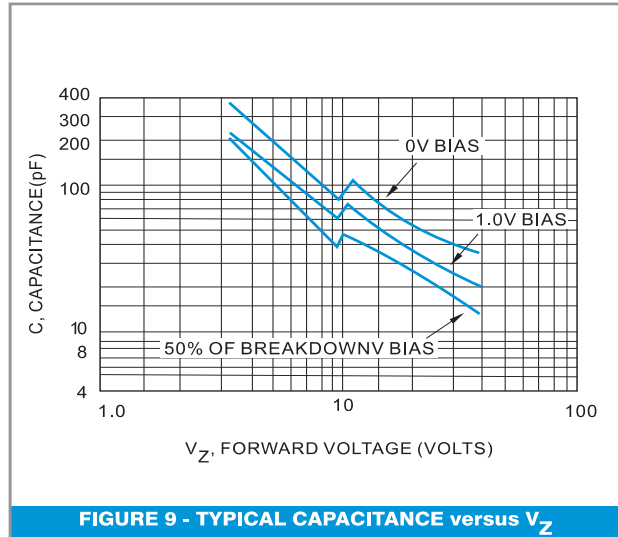
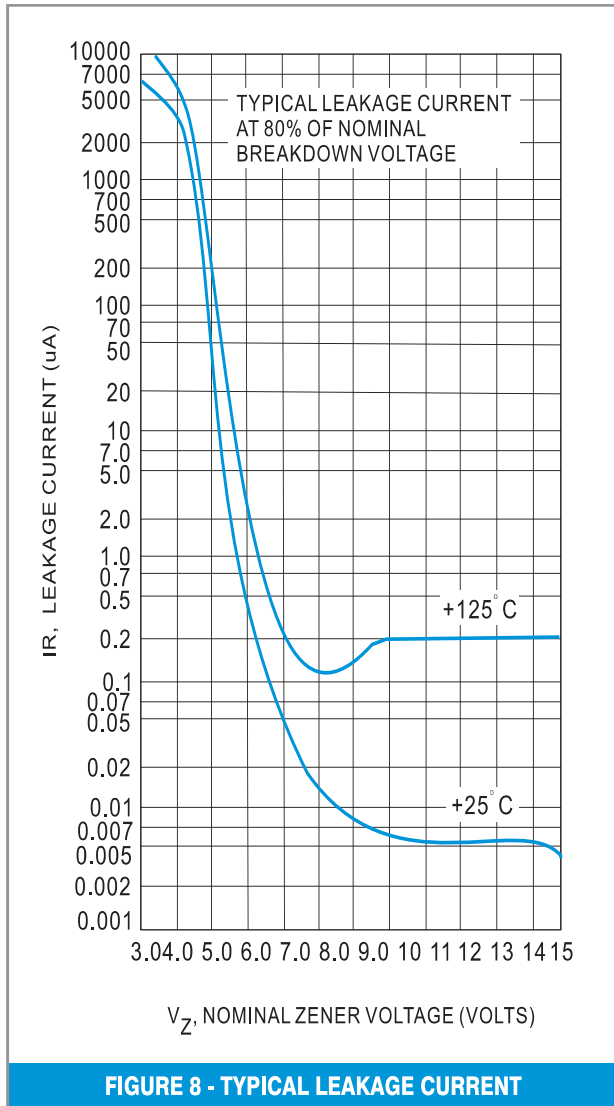


**FIGURE 6 - EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE**



**FIGURE 7 - EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**

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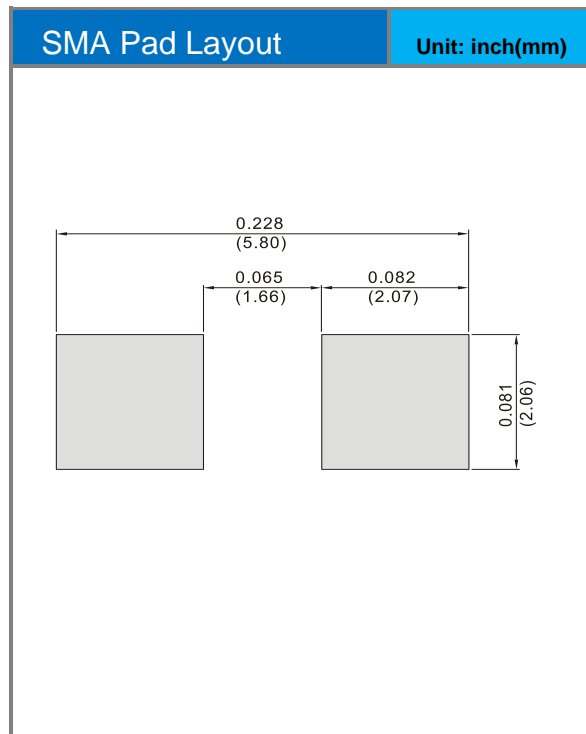


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## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
1SMA47xx-AU	SMA	1.8K pcs / 7" reel	See Table
1SMA47xx-AU	SMA	7.5K pcs / 13" reel	See Table

## Mounting Pad Layout



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