1SMA4741~1SMA4754

SURFACE MOUNT SILICON ZENER DIODE

Voltage Range 11-39 Volts
Power 1.0mWatts

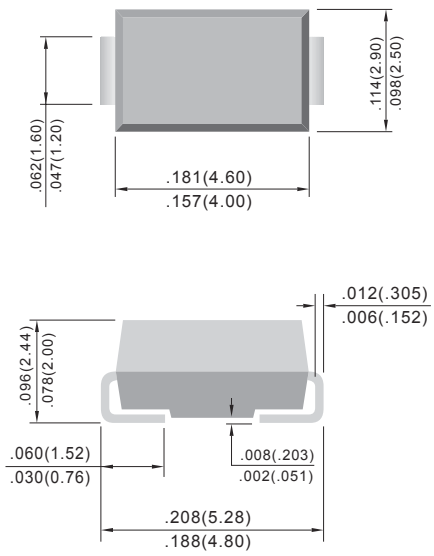
Features

* 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 μ above 11V
* Plastic package has Underwriters Laboratory Flammability Classification 94V-O
* High temperature soldering : 260°C /10 seconds at terminals
* Both normal and Pb free product are available :
  Normal : 80~95% Sn, 5~20% Pb
  Pb free: 98.5% Sn above

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

SMA/DO-214AC



Dimensions in millimeters

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Units
Pwak Pulse Power Dissipation on TA=50°C (Notes A) Derate above 50°C	P_D	1.0 6.67	W atts 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:

1. Mounted on 5.0mm2 (.013mm thick) land areas.
2. Measured on8.3ms, and single half sine-wave or equivalent square wave ,duty cycle=4 pulses per minute maximum.
3. 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				Leakage Current		Marking Code
	V_Z @ I_{ZT}			Z_{ZT} @ I_{ZT}	I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R		
	Nom. V	Min. V	Max. V	Ohms	mA	Ohms	mA	uA	V	
1.0 Watt ZENER										
1SMA4741	11	10.5	11.6	8.0	23.0	700	0.25	0.1	8.4	741B
1SMA4742	12	11.4	12.6	9.0	21.0	700	0.25	0.1	9.1	742B
1SMA4743	13	12.4	13.7	10.0	19.0	700	0.25	0.1	9.9	743B
1SMA4744	15	14.3	15.8	14.0	17.0	700	0.25	0.1	11.4	744B
1SMA4745	16	15.2	16.8	16.0	15.5	700	0.25	0.1	12.2	745B
1SMA4746	18	17.1	18.9	20.0	14.0	750	0.25	0.1	13.7	746B
1SMA4747	20	19.0	21.0	22.0	12.5	750	0.25	0.1	15.2	747B
1SMA4748	22	20.9	23.1	23.0	11.5	750	0.25	0.1	16.7	748B
1SMA4749	24	22.8	25.2	25.0	10.5	750	0.25	0.1	18.2	749B
1SMA4750	27	25.7	28.4	35.0	9.5	750	0.25	0.1	20.6	750B
1SMA4751	30	28.5	31.5	40.0	8.5	1000	0.25	0.1	22.8	751B
1SMA4752	33	31.4	34.7	45.0	7.5	1000	0.25	0.1	25.1	752B
1SMA4753	36	34.2	37.8	50.0	7.0	1000	0.25	0.1	27.4	753B
1SMA4754	39	37.1	41.0	60.0	6.5	1000	0.25	0.1	29.7	754B

Rating And Characteristic Curves

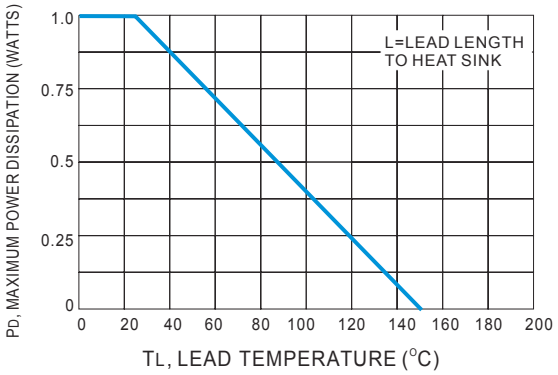

Fig.1 Power Temperature Derating Curve

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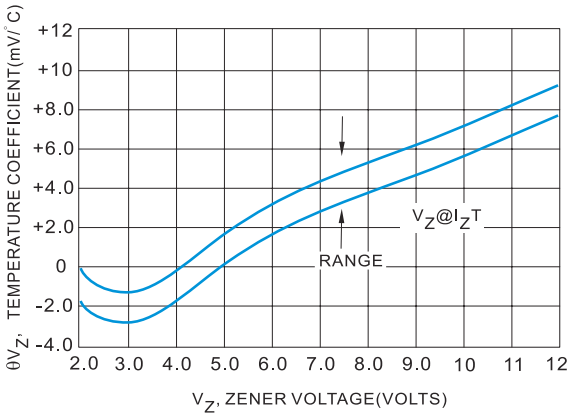
a - RAMGE FPR IMOTS TP 12 VOLTS



b - RAMGE FPR IMOTS TP 12 TO 100 VOLTS

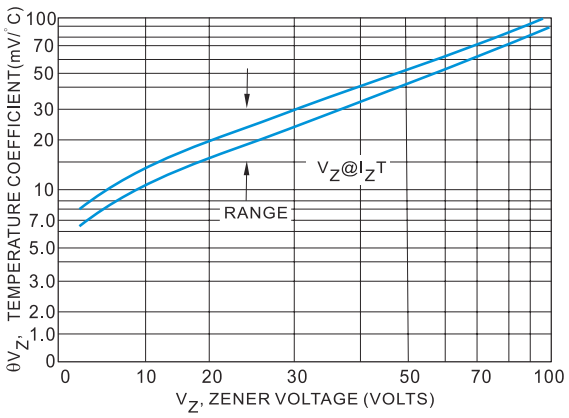


Fig.2 Temperature Coeficients
(-55°C To +150°C Temperature Range; 90% Of The Units Are In The Ranges Indicated.)

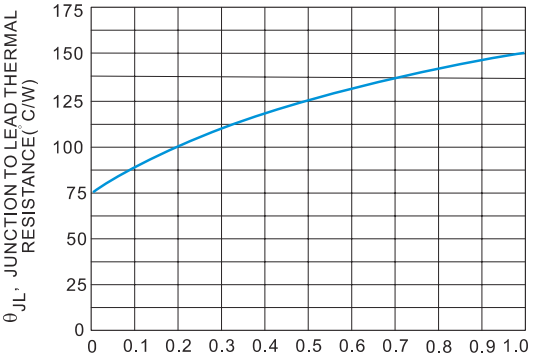


Fig.3 Typical Thermal Resistance Versus Lead Length

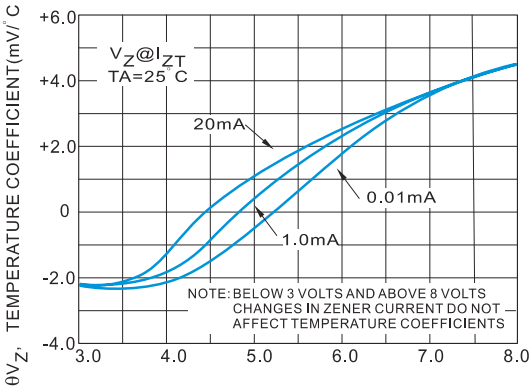
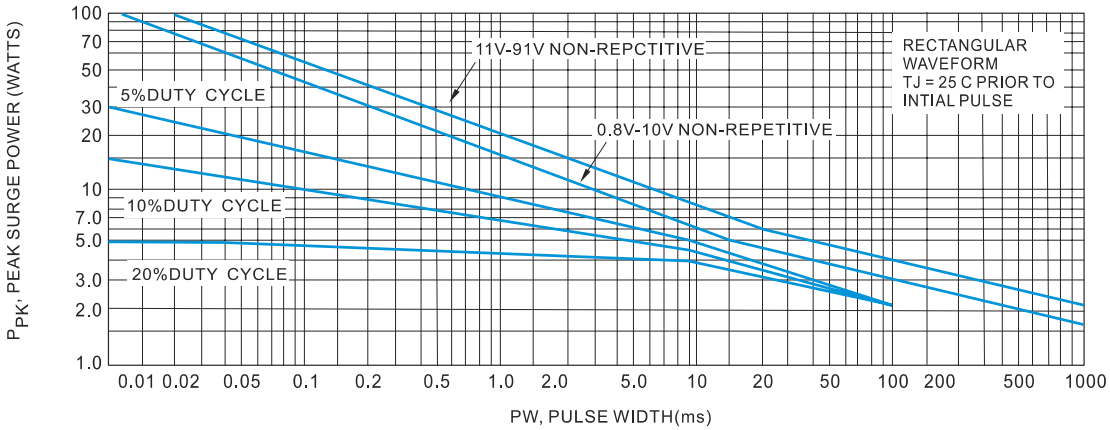


Fig.4 Effect Of Zener Current



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

Fig.5 Maximum Surge Power

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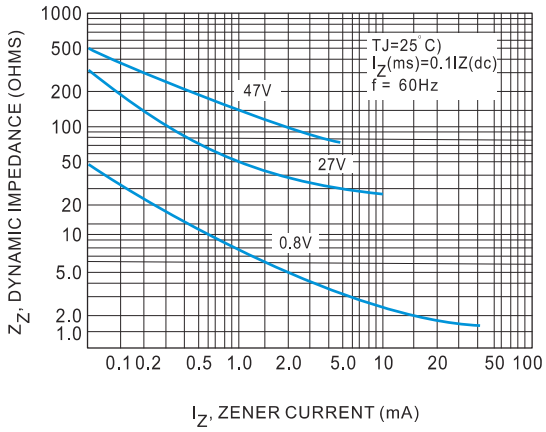

Fig.6 Effect Of Zener Current On Zener Impedance

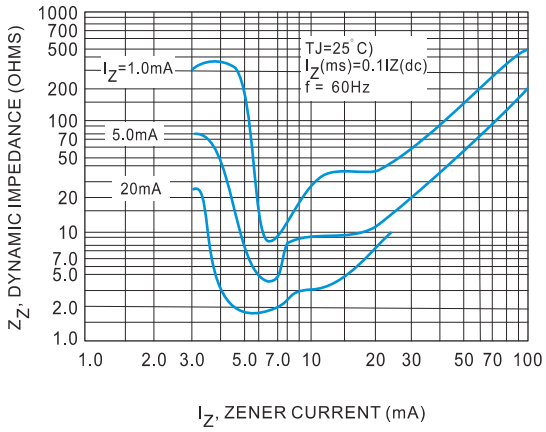

Fig.7 Effect Of Zener Voltage On Zener Impedance

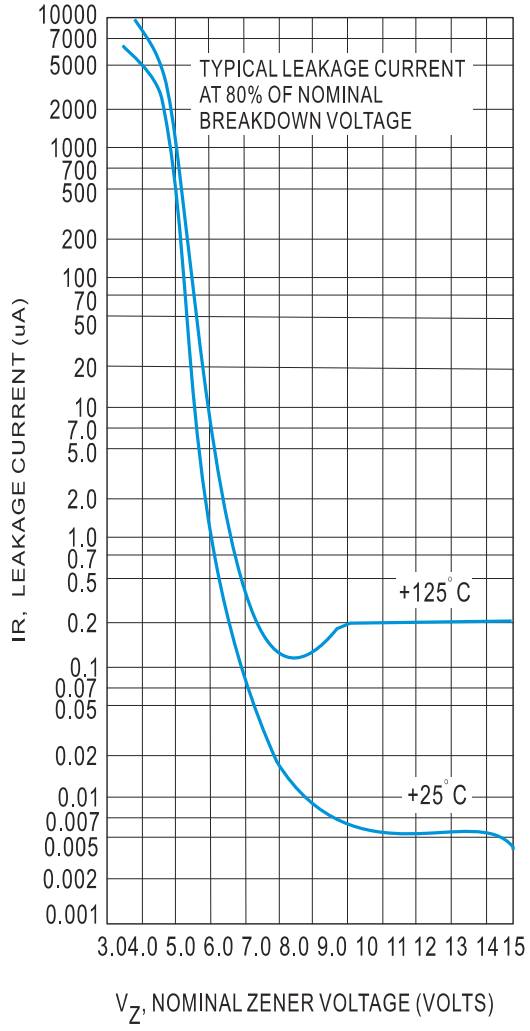

Fig.8 Typical Leakage Current

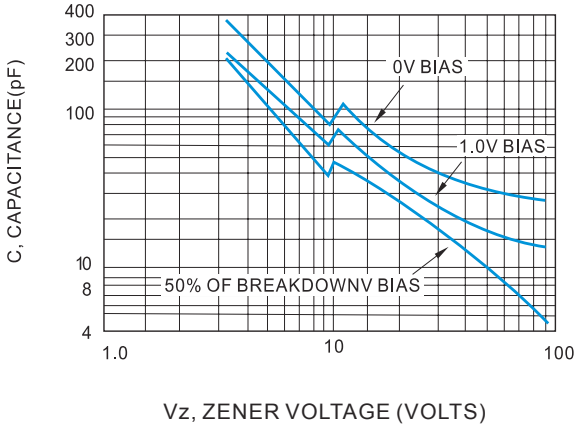

Fig.9 Typical Capacitance Versus Vz

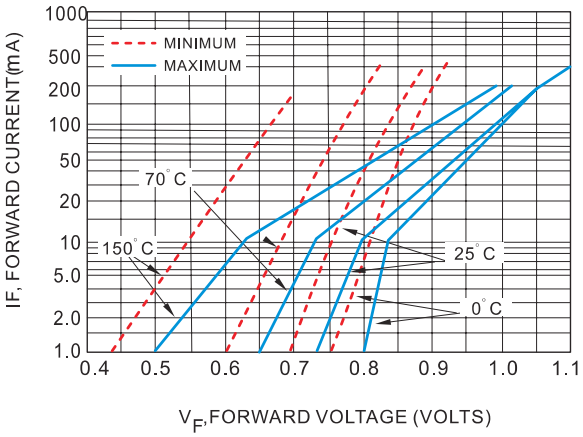

Fig.10 Typical Forward Characteristics