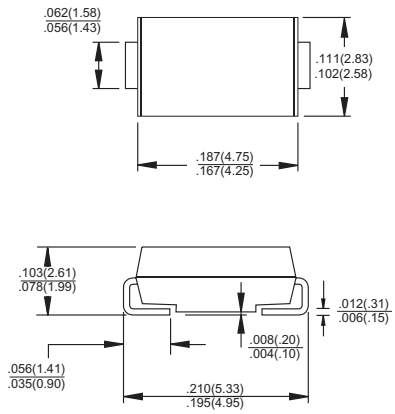
1SMA4741 THRU 1SMA4764

Surface Mount Silicon Zener Diode

Voltage Range
11 to 200 Volts
1.0 Watts Peak Power

SMA/DO-214AC



Dimensions in inches and (millimeters)

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 μA above 11V
- ✧ High temperature soldering guaranteed: 260^{O}C / 10 seconds at terminals
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0

Mechanical Data

- ✧ Case: Molded plastic over passivated junction
- ✧ Terminals: Solder plated solderable per MIL-STD-750, Method 2025
- ✧ Polarity:Color Band denotes positive end (cathode)
- ✧ Standard packaging: 12mm tape (EIA-481)
- ✧ Weight: 0.002 ounces, 0.064 gram

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A=50^{O}C, Derate above 50 ^{O}C (Note 1)	P_D	1.0 6.67	Watts mW/ ^{O}C
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2)	I_{FSM}	10.0	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	^{O}C

Notes: 1. Mounted on 5.0mm^2 (0.013mm thick) land areas.

2. Measured on 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted) VF=1.2V max, IF=200mA for all types.

Device (Note 1)	Device Marking Code	Nominal Zener Voltage Vz @ Izt Voltage (Notes 2 & 3)	Test Current IZT mA	Maximum Zener Impedance (Note 4)			Leakage Current		Surge Current @ TA = 25°C Ir - mA (Note 5)
				ZZT @ IZT	ZZK @ IZK		IR @ VR		
				Ohms	Ohms	mA	uA Max	Volts	
1SMA4741	741A	11	23	8	700	0.25	5.0	8.4	414
1SMA4742	742A	12	21	9	700	0.25	5.0	9.1	380
1SMA4743	743A	13	19	10	700	0.25	5.0	9.9	344
1SMA4744	744A	15	17	14	700	0.25	5.0	11.4	304
1SMA4745	745A	16	15.5	16	700	0.25	5.0	12.2	285
1SMA4746	746A	18	14.0	20	750	0.25	5.0	13.7	250
1SMA4747	747A	20	12.5	22	750	0.25	5.0	15.2	225
1SMA4748	748A	22	11.5	23	750	0.25	5.0	16.7	205
1SMA4749	749A	24	10.5	25	750	0.25	5.0	18.2	190
1SMA4750	750A	27	9.5	35	750	0.25	5.0	20.6	170
1SMA4751	751A	30	8.5	40	1000	0.25	5.0	22.8	150
1SMA4752	752A	33	7.5	45	1000	0.25	5.0	25.1	135
1SMA4753	753A	36	7.0	50	1000	0.25	5.0	27.4	125
1SMA4754	754A	39	6.5	60	1000	0.25	5.0	29.7	115
1SMA4755	755A	43	6.0	70	1500	0.25	5.0	32.7	110
1SMA4756	756A	47	5.5	80	1500	0.25	5.0	35.8	95
1SMA4757	757A	51	5.0	95	1500	0.25	5.0	38.8	90
1SMA4758	758A	56	4.5	110	2000	0.25	5.0	42.6	80
1SMA4759	759A	62	4.0	125	2000	0.25	5.0	47.1	70
1SMA4760	760A	68	3.7	150	2000	0.25	5.0	51.7	65
1SMA4761	761A	75	3.3	175	2000	0.25	5.0	56.0	60
1SMA4762	762A	82	3.0	200	3000	0.25	5.0	62.2	55
1SMA4763	763A	91	2.8	250	3000	0.25	5.0	69.2	50
1SMA4764	764A	100	2.5	350	3000	0.25	5.0	76.0	45

Notes:

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_Z) Measurement. Guarantees the zener voltage when messured at 90 seconds while maintaining the lead temperature (T_L) at 30°C± 1°C, from the diode body.
4. Zener Impedance (ZZ) Derivation. The zener impedance is derived from the 1000 cycle ac voltage, which results when an ac current having and rms value equal to 10% of the dc zener current (IZT or IZK) is superimposed on IZT or IZK.
5. Surge Current (Ir) 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, IZT, per JEDEC registration; however, actual device capability is as described in Figure 10.

RATINGS AND CHARACTERISTIC CURVES (1SMA4741 THRU 1SMA4764)

FIG.1- POWER TEMPERATURE DERATING CURVE

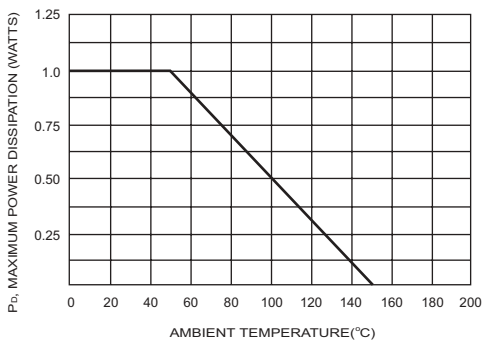


FIG.2- TYPICAL FORWARD CHARACTERISTICS

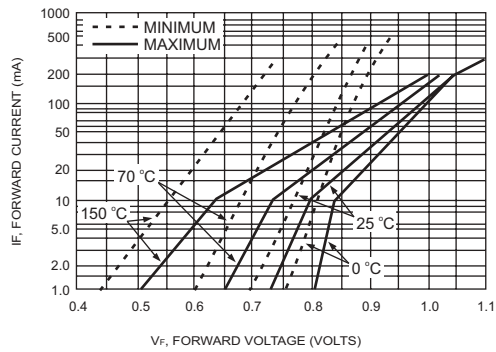


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

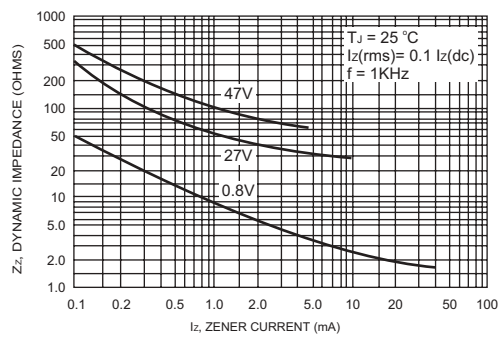


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

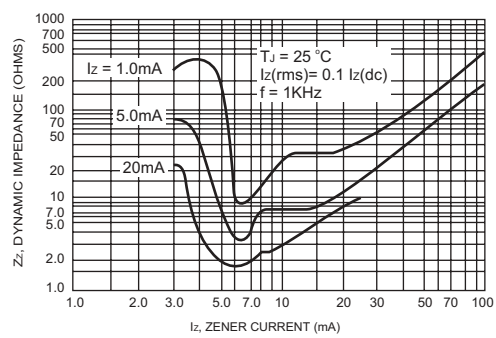


FIG.5- TYPICAL LEAKAGE CURRENT

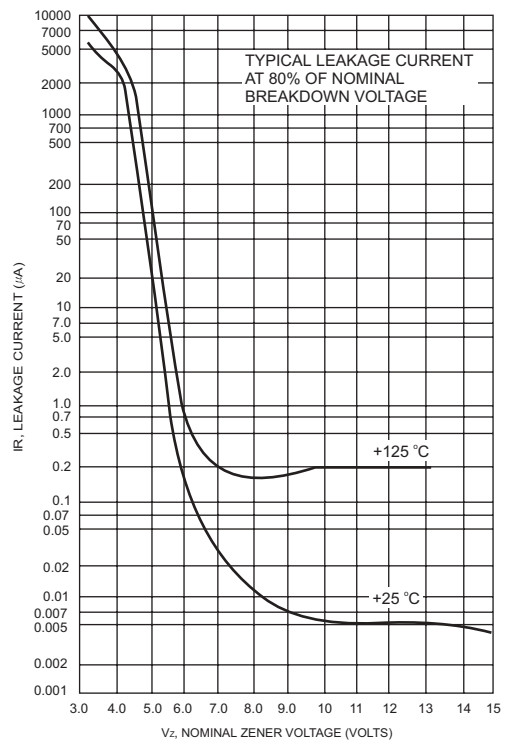


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FIG.6- TYPICAL CAPACITANCE versus Vz

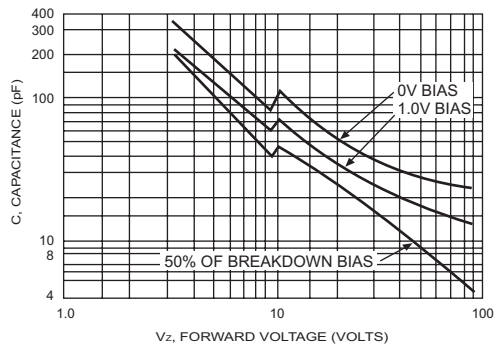

FIG.7- TEMPERATURE COEFFICIENTS

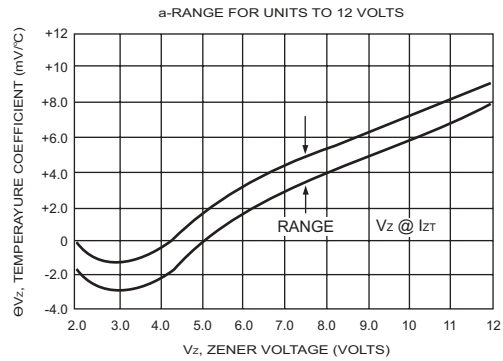

FIG.7- TEMPERATURE COEFFICIENTS

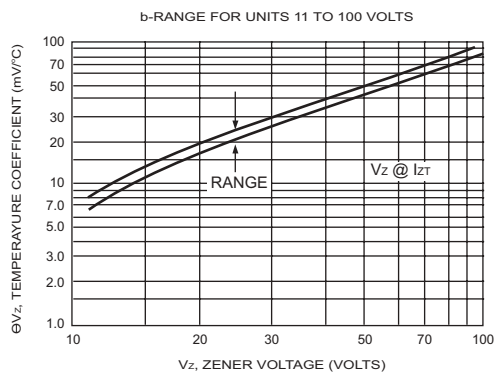

FIG.8- EFFECT OF ZENER CURRENT

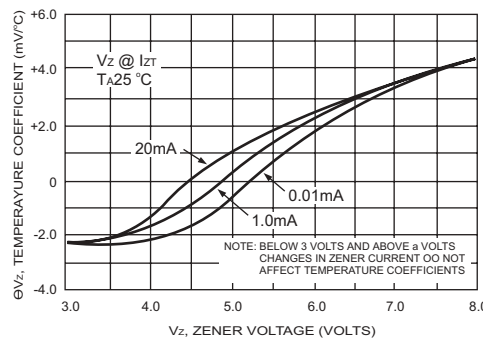

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FIG.9- MAXIMUM SURGE POWER

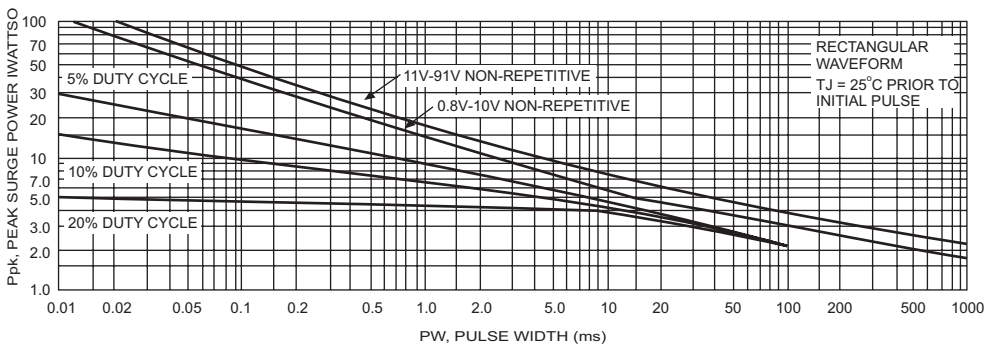

FIG.10- BREAKDOWN CHARACTERISTICS

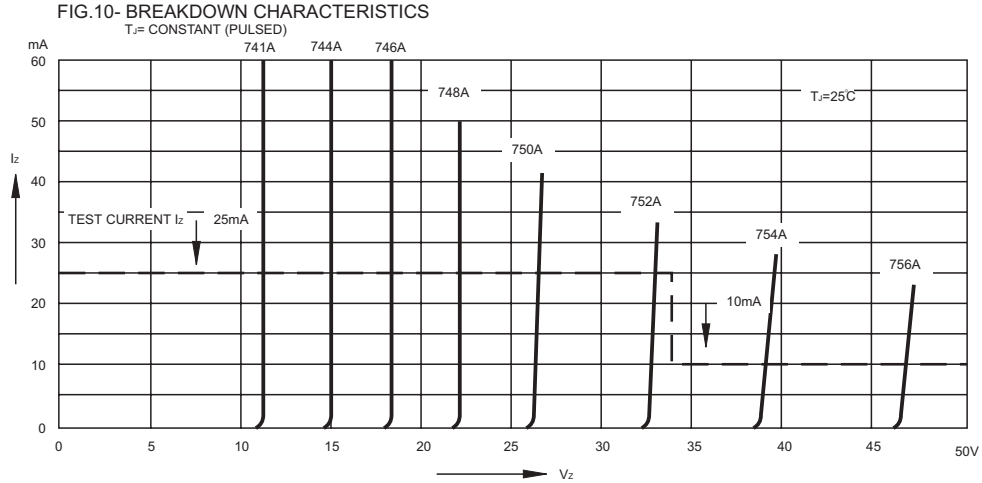

FIG.11- BREAKDOWN CHARACTERISTICS