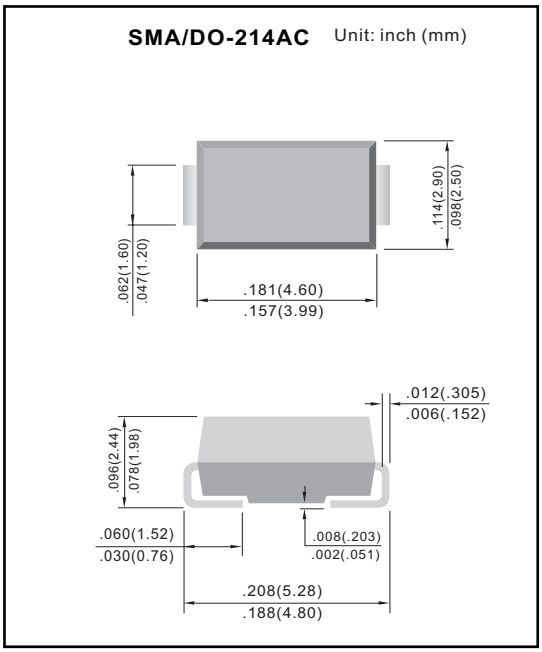
SURFACE MOUNT SILICON ZENER DIODE

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 1.0μA above 12V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- Pb free product : 99% Sn above can meet RoHS environment substance directive request



MECHANICALDATA

- 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.

	SYMBOLS	VALUE	UNITS
Pwak Pulse Power Dissipation on TA=70°C (Notes A) Derate above 70°C	P_D	1.5 15.0	Watts mW / °C
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	10	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

NOTES:

A.Mounted on 5.0mm2 (.013mm thick) land areas.

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

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

TYPE	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
	V_Z @ I_{ZT}	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R		I_{ZM}
	(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
1SMA5913B	3.3	113.6	10	500	1.0	100	1.0	454
1SMA5914B	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMA5915B	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMA5916B	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMA5917B	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMA5918B	5.1	73.5	4.0	350	1.0	5.0	2.0	294
1SMA5919B	5.6	66.9	2.0	250	1.0	5.0	3.0	267
1SMA5920B	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMA5921B	6.8	55.1	2.5	200	1.0	50	5.2	220
1SMA5922B	7.5	50.0	3.0	400	0.5	50	6.0	200
1SMA5923B	8.2	45.7	3.5	400	0.5	50	6.5	182
1SMA5924B	9.1	41.2	4.0	500	0.5	50	7.0	164
1SMA5925B	10	37.5	4.5	500	0.25	50	8.0	150
1SMA5926B	11	34.1	5.5	550	0.25	50	8.4	136
1SMA5927B	12	31.2	6.5	550	0.25	1.0	9.1	125
1SMA5928B	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMA5929B	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMA5930B	16	23.4	10	600	0.25	1.0	12.2	93
1SMA5931B	18	20.8	12	650	0.25	1.0	13.7	83
1SMA5932B	20	18.7	14	650	0.25	1.0	15.2	75
1SMA5933B	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMA5934B	24	15.6	19	700	0.25	1.0	18.2	62
1SMA5935B	27	13.9	23	700	0.25	1.0	20.6	55
1SMA5936B	30	12.5	26	750	0.25	1.0	22.8	50
1SMA5937B	33	11.4	33	800	0.25	1.0	25.1	45
1SMA5938B	36	10.4	38	850	0.25	1.0	27.4	41
1SMA5939B	39	9.6	45	900	0.25	1.0	29.7	38
1SMA5940B	43	8.7	53	950	0.25	1.0	32.7	34
1SMA5941B	47	8.0	67	1000	0.25	1.0	35.8	31
1SMA5942B	51	7.3	70	1100	0.25	1.0	38.8	29
1SMA5943B	56	6.7	86	1300	0.25	1.0	42.6	26
1SMA5944B	62	6.0	100	1500	0.25	1.0	47.1	24
1SMA5945B	68	5.5	120	1700	0.25	1.0	51.7	22
1SMA5946B	75	5.0	140	2000	0.25	1.0	56.0	20
1SMA5947B	82	4.6	160	2500	0.25	1.0	62.2	18
1SMA5948B	91	4.1	200	3000	0.25	1.0	69.2	16
1SMA5949B	100	3.7	250	3100	0.25	1.0	76.0	15
1SMA5950B	110	3.4	300	4000	0.25	1.0	83.6	13
1SMA5951B	120	3.1	380	4500	0.25	1.0	91.2	12
1SMA5952B	130	2.9	450	5000	0.25	1.0	98.8	11
1SMA5953B	150	2.5	600	6000	0.25	1.0	114.0	10
1SMA5954B	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMA5955B	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMA5956B	200	1.9	1200	8000	0.25	1.0	152.0	7.0
1SMA5957B	240	1.5	1600	9000	0.25	1.0	182.4	6.0

Note :

(1) Suffix " B " indicates ± 5% tolerance, suffix " A " indicates ± 10% tolerance.

(2) Marking Number:Ellipsis the " 1SMA" only print the " 5913B thru 5957B" .

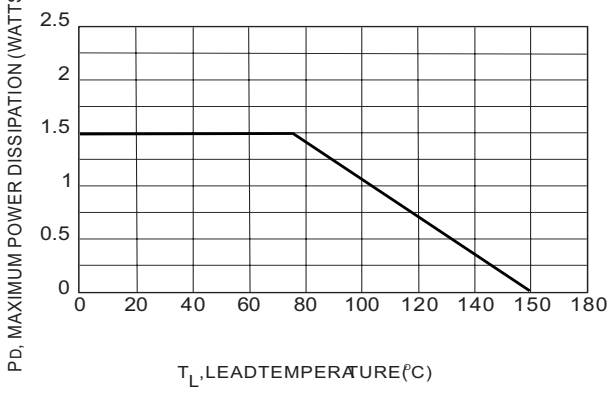


Fig.1 Steady State Power Derating

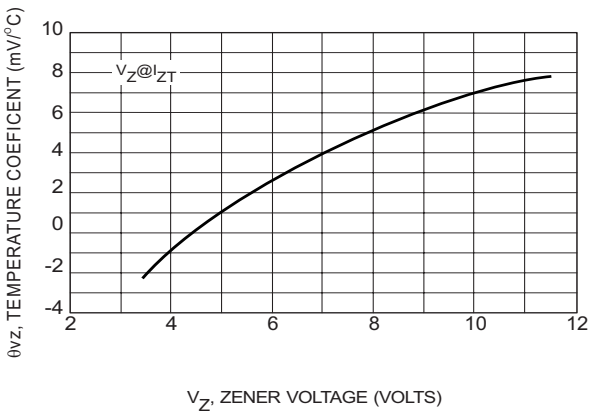


Fig.2 Zener Voltage - to 12 volts

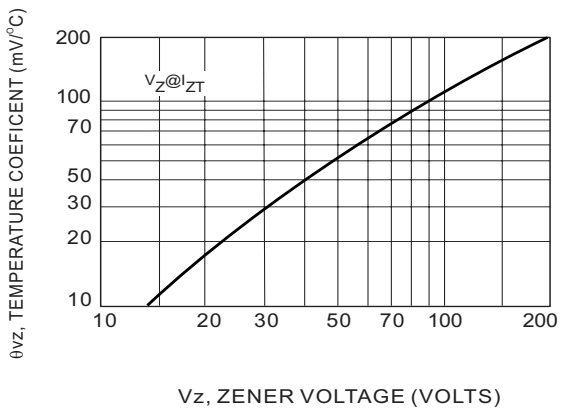


Fig.3 Zener Voltage - 14 to 200 Volts

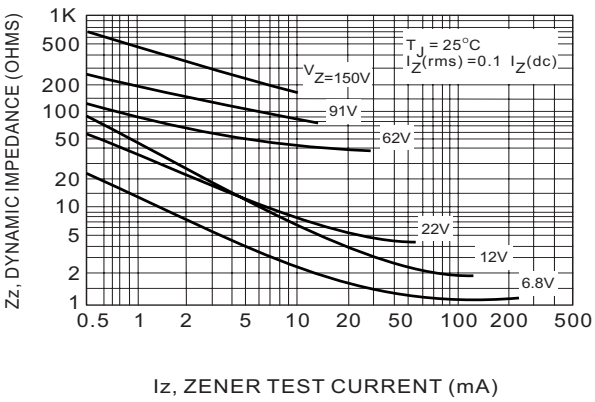


Fig.4 Effect of Zener Current

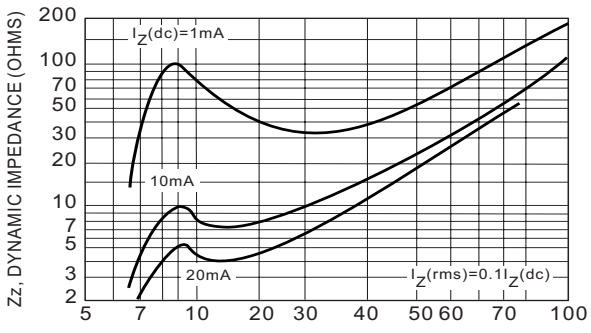


Fig.5 Effect of Zener Voltage

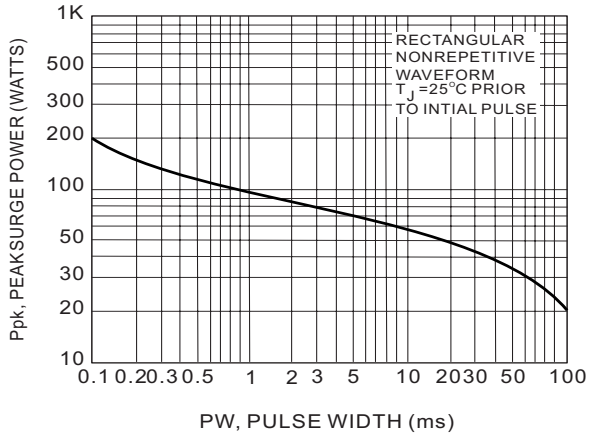


Fig.6 Maximum Surge Power

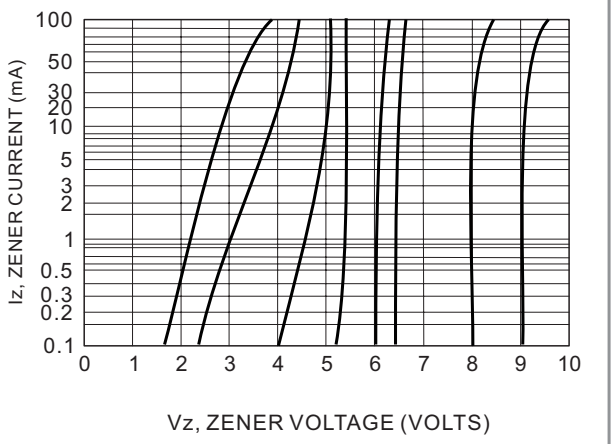


Fig.7 Vz = 6.8 thru 10 Volts

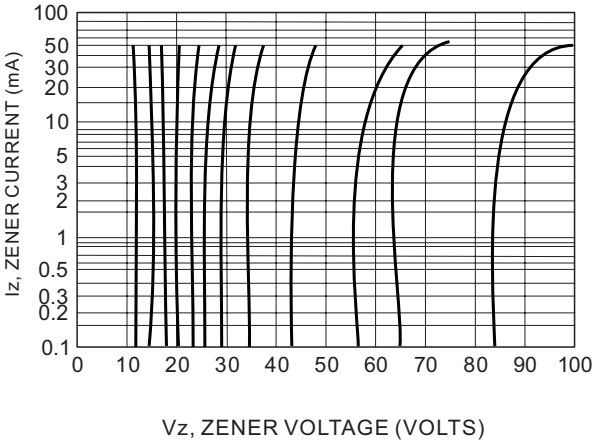


Fig.8 Vz = 12 thru 82 Volts

NOTE 3. ZENER VOLTAGE (Vz) MEASUREMENT
Nominal zener voltage is measured with the device function in thermal equilibrium with ambient temperature at 25°C

NOTE 4. ZENER IMPEDANCE (Zz) DERIVATION
Zzt and Zzk are measured by dividing the ac voltage drop across the device by the accurrent applied. The specified limits are for Iz(ac) = 0.1 Iz, (dc) with the ac freqency = 60Hz