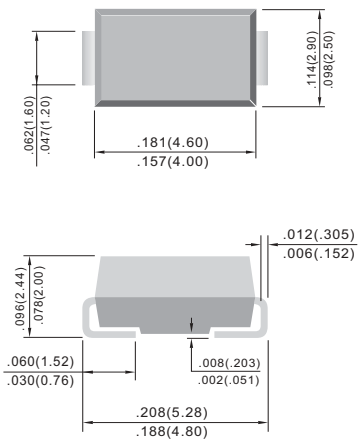
DATA SHEET

1SMA5913~1SMA5956

SURFACE MOUNT SILICON ZENER DIODE

VOLTAGE- 3.3 to 200 Volts Power - 1.5 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 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 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-750
Method 2026
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

Ratings at 25 ℃ ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	VALUE	UNITS
Pwak Pulse Power Dissipation on TA=50℃ (Notes A) Derate above 50℃	P_D	1.5 15.0	Watts mW/℃
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{Fsm}	10	Amps
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-50+150	℃

NOTES:

A. Mounted on 5.0mm^2 (.013mm thick) land ares.

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

Part Number	Marking Code	V_Z @ I_{ZT}			Maximum Zener Impedance				Maximum Leakage Current		Package
					Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}		I_R @V_R		
		Nom. V	Min. V	Max. V	O	mA	O	mA	uA	V	
1SMA5913	913A	3.3	3.13	3.47	10	113.6	500	1.00	100.0	1.0	SMA/DO-214AC
1SMA5914	914A	3.6	3.42	3.78	9	104.2	500	1.00	75.0	1.0	SMA/DO-214AC
1SMA5915	915A	3.9	3.70	4.10	7.5	96.1	500	1.00	25.0	1.0	SMA/DO-214AC
1SMA5916	916A	4.3	4.08	4.52	6	87.2	500	1.00	5	1.0	SMA/DO-214AC
1SMA5917	917A	4.7	4.46	4.94	5	79.8	500	1.00	5	1.5	SMA/DO-214AC
1SMA5918	918A	5.1	4.84	5.36	4	73.5	350	1.00	5	2.0	SMA/DO-214AC
1SMA5919	919A	5.6	5.32	5.88	2	66.9	250	1.00	5	3.0	SMA/DO-214AC
1SMA5920	920A	6.2	5.89	6.51	2	60.5	200	1.00	5	4.0	SMA/DO-214AC
1SMA5921	921A	6.8	6.46	7.14	2.5	55.1	200	1.00	5	5.2	SMA/DO-214AC
1SMA5922	922A	7.5	7.12	7.88	3	50.0	400	0.50	5	6.0	SMA/DO-214AC
1SMA5923	923A	8.2	7.79	8.61	3.5	45.7	400	0.50	5	6.5	SMA/DO-214AC
1SMA5924	924A	9.1	8.64	9.56	4	41.2	500	0.50	5	7.0	SMA/DO-214AC
1SMA5925	925A	10	9.50	10.50	4.5	37.5	500	0.25	5	8.0	SMA/DO-214AC
1SMA5926	926A	11	10.45	11.55	5.5	34.1	550	0.25	1	8.4	SMA/DO-214AC
1SMA5927	927A	12	11.40	12.60	6.5	31.2	550	0.25	1	9.1	SMA/DO-214AC
1SMA5928	928A	13	12.35	13.65	7	28.8	550	0.25	1	9.9	SMA/DO-214AC
1SMA5929	929A	15	14.25	15.75	9	25.0	600	0.25	1	11.4	SMA/DO-214AC
1SMA5930	930A	16	15.20	16.80	10	23.4	600	0.25	1	12.2	SMA/DO-214AC
1SMA5931	931A	18	17.10	18.90	12	20.8	650	0.25	1	13.7	SMA/DO-214AC
1SMA5932	932A	20	19.00	21.00	14	18.7	650	0.25	1	15.2	SMA/DO-214AC
1SMA5933	933A	22	20.90	23.10	17.5	17.0	650	0.25	1	16.7	SMA/DO-214AC
1SMA5934	934A	24	22.80	25.20	19	15.6	700	0.25	1	18.2	SMA/DO-214AC
1SMA5935	935A	27	25.65	28.35	23	13.9	700	0.25	1	20.6	SMA/DO-214AC
1SMA5936	936A	30	28.50	31.50	28	12.5	750	0.25	1	22.8	SMA/DO-214AC
1SMA5937	937A	33	31.35	34.65	33	11.4	800	0.25	1	25.1	SMA/DO-214AC
1SMA5938	938A	36	34.20	37.80	38	10.4	850	0.25	1	27.4	SMA/DO-214AC
1SMA5939	939A	39	37.05	41	45	9.6	900	0.25	1	29.7	SMA/DO-214AC
1SMA5940	940A	43	40.85	45.2	53	8.7	950	0.25	1	32.7	SMA/DO-214AC
1SMA5941	941A	47	44.65	49.4	67	8.0	1000	0.25	1	35.8	SMA/DO-214AC
1SMA5942	942A	51	48.45	53.6	70	7.3	1100	0.25	1	38.8	SMA/DO-214AC
1SMA5943	943A	56	53.2	58.8	86	6.7	1300	0.25	1	42.6	SMA/DO-214AC
1SMA5944	944A	62	58.9	65.1	100	6.0	1500	0.25	1	47.1	SMA/DO-214AC
1SMA5945	945A	68	64.6	71.4	120	5.5	1700	0.25	1	51.7	SMA/DO-214AC
1SMA5946	946A	75	71.25	78.8	140	5.0	2000	0.25	1	56	SMA/DO-214AC
1SMA5947	947A	82	77.9	86.1	160	4.6	2500	0.25	1	62.2	SMA/DO-214AC
1SMA5948	948A	91	86.45	95.6	200	4.1	3000	0.25	1	69.2	SMA/DO-214AC
1SMA5949	949A	100	95	105	250	3.7	3100	0.25	1	76	SMA/DO-214AC
1SMA5950	950A	110	104.5	116	300	3.4	4000	0.25	1	83.6	SMA/DO-214AC
1SMA5951	951A	120	114	126	380	3.1	4500	0.25	1	91.2	SMA/DO-214AC

Part Number	Marking Code	V_Z @ I_{ZT}			Maximum Zener Impedance				Maximum Leakage Current		Package
					Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}		I_R @V_R		
		Nom. V	Min. V	Max.V	O	mA	O	mA	uA	V	
1SMA5952	952A	130	123.5	137	450	2.9	5000	0.25	1	98.8	SMA/DO-214AC
1SMA5953	953A	150	142.5	158	600	2.5	6000	0.25	1	114	SMA/DO-214AC
1SMA5954	954A	160	152	168	700	2.3	6500	0.25	1	121.6	SMA/DO-214AC
1SMA5955	955A	180	171	189	900	2.1	7000	0.25	1	136.8	SMA/DO-214AC
1SMA5956	956A	200	190	210	1200	1.9	8000	0.25	1	152	SMA/DO-214AC

RATING AND CHARACTERISTIC CURVES

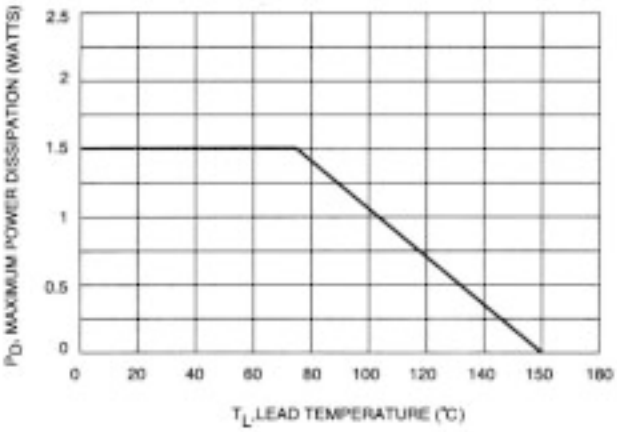


Figure 1. Steady State Power Derating

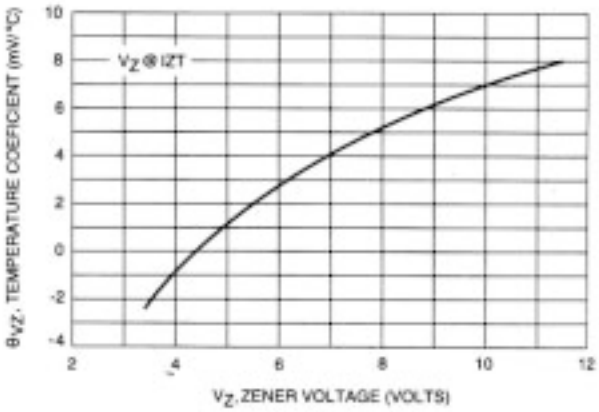


Figure 2. Zener Voltage—To 12 Volts

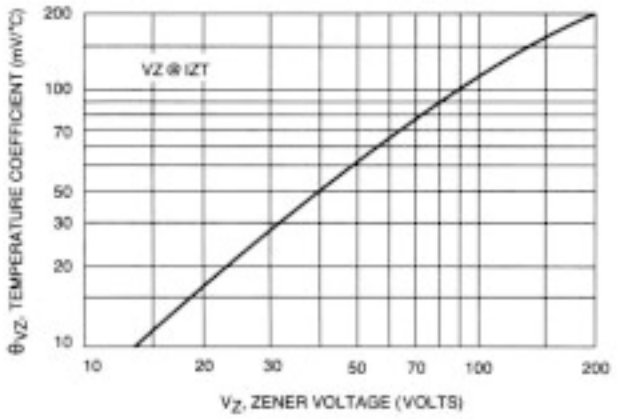


Figure 3. Zener Voltage—14 To 200 Volts

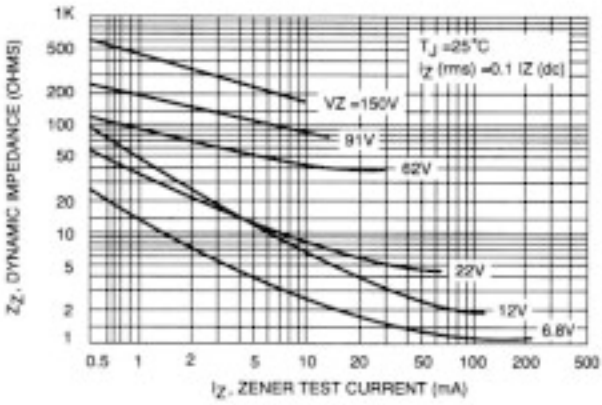


Figure 4. Effect of Zener Current

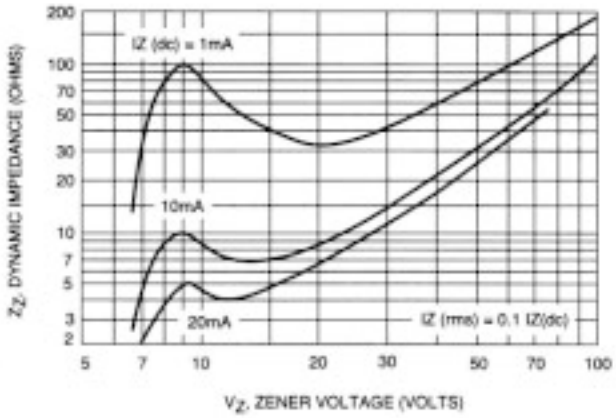


Figure 5. Effect of Zener Voltage

RATING AND CHARACTERISTIC CURVES

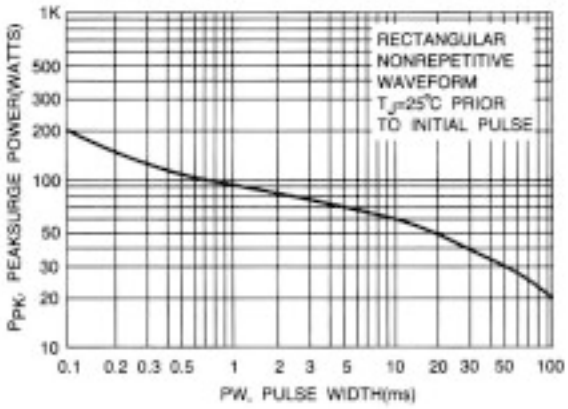


Figure 6. Maximum Surge Power

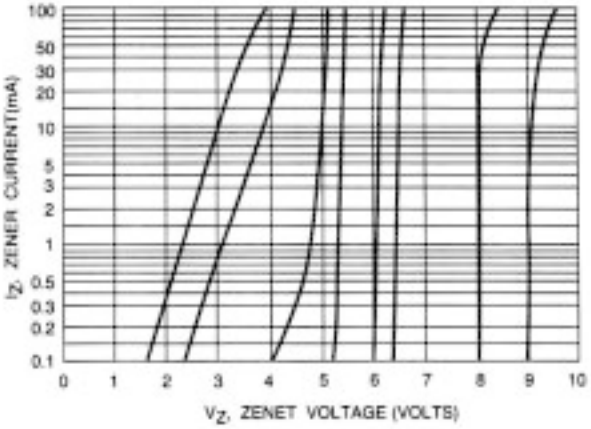


Figure 7. V_Z = 6.8 thru 10 Volts

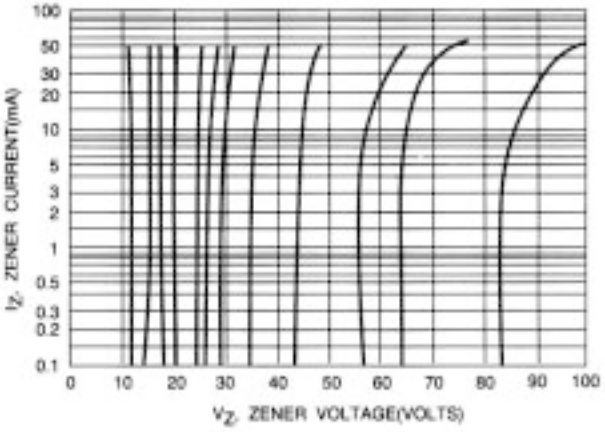


Figure 8. V_Z = 12 thru 82 Volts

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

NOTE 4. ZENER IMPEDANCE (Z_Z) DERIVATION
Z_{ZT} and Z_{ZK} are measured by dividing the ac voltage drop across the device by the accurrent applied. The specified limits are for $I_{Z(ac)} = 0.1\ I_Z$, (dc) with the ac freqency = 60Hz