SMA5913B THRU 1SMA5957B

Surface Mount Power Voltage-Regulating Diodes

FEATURES

* For surface mount application
* Built-in strain relief
* Excellent clamping capability
* Low profile package
* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
* Typical I_R less than 1 A above 10V
* High temperature soldering guaranteed: 260°C / 10 seconds at terminals

MECHANICAL DATA

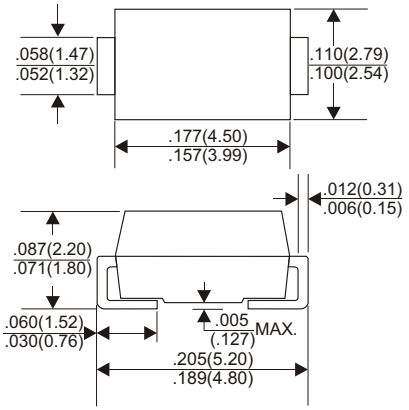
* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: Solderable per MIL-STD-202, method 208 guranteed
* Polarity: Color band denotes cathode end except Bidirectional
* Mounting position: Any
* Weight: 0.063 grams

VOLTAGE RANGE

3.3 to 240 Volts

1500mW

DO-214AC(SMA)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Maximum steady state power dissipation at T_L = 75 °C (fig. 1) (1)	P_{tot}	1500	mW
Maximum steady state power dissipation at T_A = 25 °C (fig. 1) (2)	P_{tot}	500	mW
Maximum instantaneous forward voltage at 200 mA for all types (3)	V_F	1.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +150	°C
Typical thermal resistance, junction to lead	$R_{\theta JL}$ (1)	50	°C/W
Typical thermal resistance, junction to ambient	$R_{\theta JA}$ (2)	250	°C/W

Notes

(1) Mounted on PCB with 5.0 mm x 5.0 mm copper pads attached to each terminal
(2) Mounted on minimum recommended pad layout
(3) Pulse test: 300 µs pulse width, 1 % duty cycle

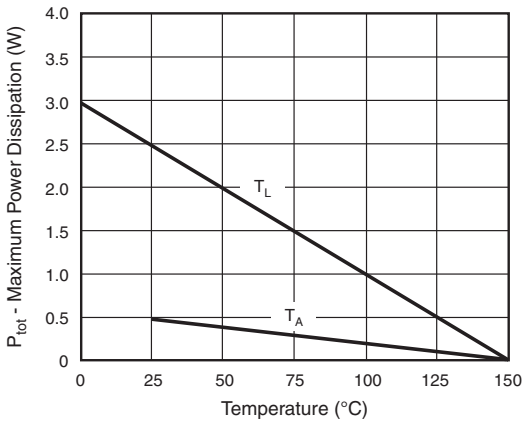


Fig. 1 - Steady State Power Derating

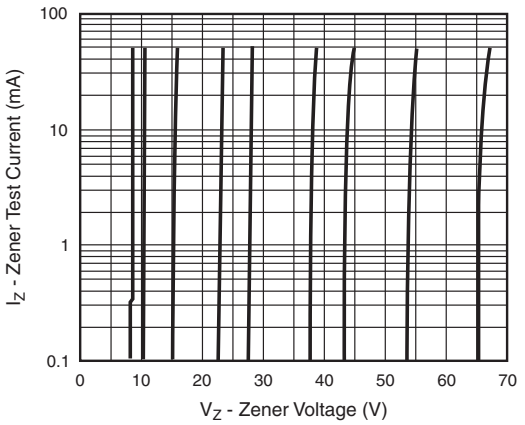


Fig. 3 - Typical Zener Voltage

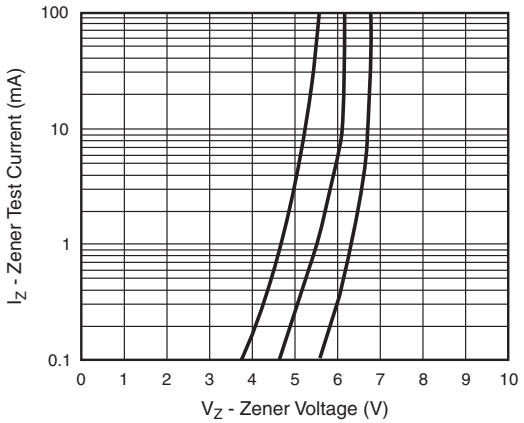


Fig. 2 - Typical Zener Voltage

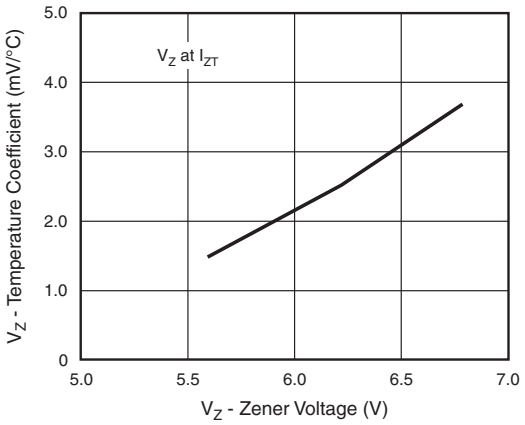


Fig. 4 - Typical Temperature Coefficients

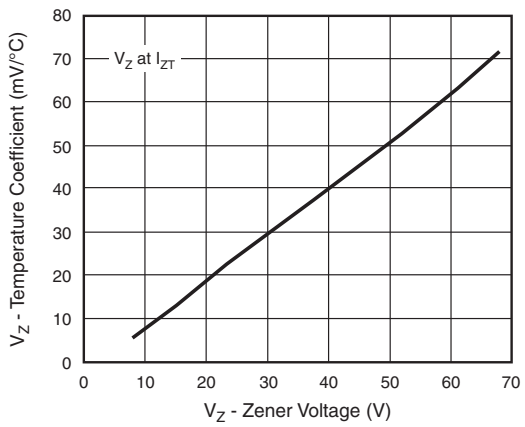


Fig. 5 - Typical Temperature Coefficients

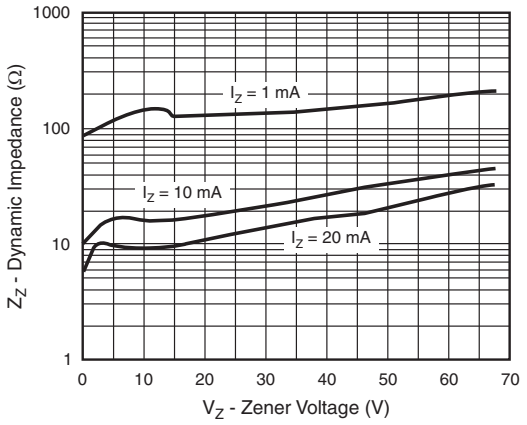


Fig. 6 - Typical Zener Impedance

Characteristics at T_a = 25°C

Type (note1)	Marking (note1)	Zener Voltage Range (note2)				Dynamic Impedance	Reverse Current		Admissible Zener Current
		V_{ZT} (at I_{ZT})			at I_{ZT}	Z_{ZT} (at I_{ZT})	I_R	at V_R	
		Min (V)	Nom (V)	Max (V)	(mA)	Max (Ω)	Max (μA)	(V)	I_{ZM} (mA)
1SMA5913B	913B	3.13	3.3	3.47	113.6	10	100	1	454
1SMA5914B	914B	3.42	3.6	3.78	104.2	9.0	75	1	416
1SMA5915B	915B	3.70	3.9	4.10	96.1	7.5	25	1	384
1SMA5916B	916B	4.08	4.3	4.52	87.2	6.0	5	1	348
1SMA5917B	917B	4.46	4.7	4.94	79.8	5.0	5	1.5	319
1SMA5918B	918B	4.84	5.1	5.36	73.5	4.0	5	2	294
1SMA5919B	919B	5.32	5.6	5.88	66.9	2.0	5	3	267
1SMA5920B	920B	5.89	6.2	6.51	60.5	2.0	5	4	241
1SMA5921B	921B	6.46	6.8	7.14	55	2.5	5	5.2	220
1SMA5922B	922B	7.12	7.5	7.88	50	3.0	5	6	200
1SMA5923B	923B	7.79	8.2	8.61	45.7	3.5	5	6.5	182
1SMA5924B	924B	8.60	9.1	9.56	41.2	4.0	5	7	164
1SMA5925B	925B	9.50	10	10.5	37.5	4.5	5	8	150
1SMA5926B	926B	10.4	11	11.6	34	5.5	1	8.4	136
1SMA5927B	927B	11.4	12	12.6	31.2	6.5	1	9	125
1SMA5928B	928B	12.35	13	14.1	28.8	7.0	1	9.9	115
1SMA5929B	929B	13.8	15	15.8	25	9.0	1	11.4	100
1SMA5930B	930B	15.2	16	16.8	23.4	10	1	12.2	93
1SMA5931B	931B	16.8	18	19.2	21	12	1	13.7	83
1SMA5932B	932B	19.0	20	21.2	19	14	1	15.2	75
1SMA5933B	933B	20.8	22	23.3	17	18	1	16.7	68
1SMA5934B	934B	22.8	24	25.2	16	19	1	18.2	62
1SMA5935B	935B	25.3	27	28.9	14	23	1	20.6	55
1SMA5936B	936B	28.2	30	32.0	12.5	26	1	23	50
1SMA5937B	937B	31.3	33	34.9	11.4	33	1	25	45
1SMA5938B	938B	34.2	36	37.9	10.4	38	1	27	41
1SMA5939B	939B	37.2	39	41.5	9.6	45	1	30	38
1SMA5940B	940B	40.9	43	45.6	8.7	53	1	33	34
1SMA5941B	941B	44.9	47	49.8	8.0	67	1	36	31
1SMA5942B	942B	48.6	51	54.0	7.3	70	1	39	29
1SMA5943B	943B	53.6	56	58.8	6.7	86	1	42	26
1SMA5944B	944B	58.9	62	65.6	6.0	100	1	47	24
1SMA5945B	945B	64.6	68	71.7	5.5	120	1	52	22
1SMA5946B	946B	71.2	75	78.8	5.0	140	1	57	20
1SMA5947B	947B	77.9	82	87.0	4.6	160	1	62	18
1SMA5948B	948B	86.0	91	96.0	4.1	200	1	69	16
1SMA5949B	949B	95.0	100	105	3.7	250	1	76	15
1SMA5950B	950B	104	110	116	3.4	300	1	84	13
1SMA5951B	951B	114	120	127	3.1	380	1	91	12
1SMA5952B	952B	125	130	142	2.9	450	1	100	11
1SMA5953B	953B	140	150	157	2.5	600	1	114	10
1SMA5954B	954B	152	160	168	2.3	700	1	121.6	9.0
1SMA5955B	955B	168	180	189	2.1	900	1	136.8	8.0
1SMA5956B	956B	189	200	211	1.9	1200	1	152	7.0
1SMA5957B	957B	228	240	252	1.5	1600	1	182.4	6.0

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

(2) V_{ZT} is tested with pulses (20 ms)