

## ZENER DIODE

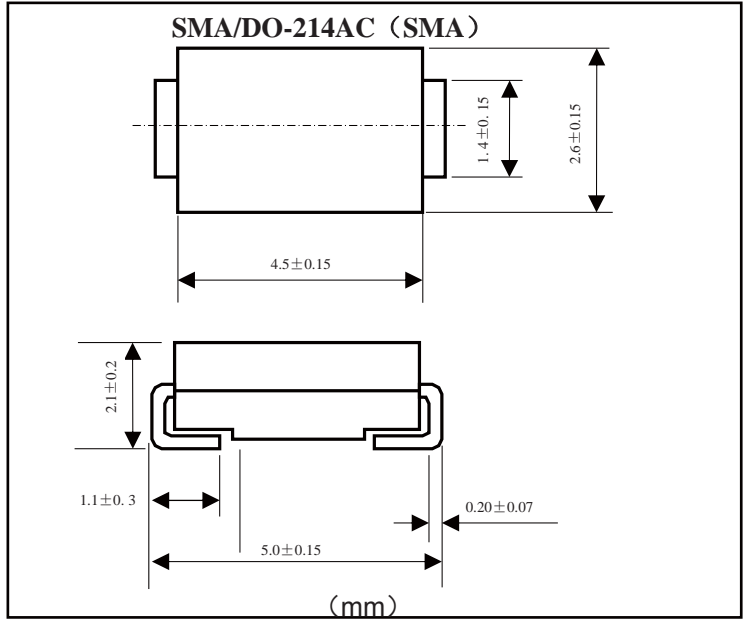
VOLTAGE RANGE: 3.3--- 240V  
PEAK PULSE POWER:1.5W

### FEATURES

- Low Zener impedance at low currents
- High reliability
- Resistance to soldering heat: The patch product is 250°C/10S, and the lead end is 1.5mm.

### MECHANICAL DATA

- Case: SMA
- Plastic packaging material: UL94V-O approved flame retardant epoxy material
- Mounting Position: Any
- Polarity: color circle means cathode



## MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 C ambient temperature unless otherwise specified

parameter name	symbol	Numerical value	unit
Zener current	$I_Z$ MAX	See table	mA
Dissipated power @ $T_L = 75^\circ\text{C}$ (Note 1)	$P_t$	1.5	W
Forward voltage @ $I_F = 200$ mA	$V_F$	1.5	V
Thermal impedance (knot to the surrounding environment, note 1)	$R_{\theta(ja)}$	28	$^\circ\text{C/W}$
Use and storage temperature range (patch)	$T_J, T_{STG}$	-55~+150	$^\circ\text{C}$
Use and storage temperature range (axial)		-55~+175	

note:

The patch is mounted with a 5 x 5 mm heat sink copper strip at the end of the lead.



## RATINGS AND CHARACTERISTIC CURVES

Electrical Specification ( $T_A=25^\circ\text{C}$  unless otherwise specified)

MODEL  ( Note:1)	Zener voltage	Measuring current	Maximum Zener impedance			Maximum reverse leakage current		Maximum DC Zener current
	$V_{Z@I_{ZT}}$	$I_{ZT}$	$Z_{ZT}@I_{ZT}$ ( Note:2)	$Z_{ZK}@I_{ZK}$ ( Note: 3)	$I_{ZK}$	$I_{R@V_R}$	$V_R$	$I_{ZM}@50^\circ\text{C}$ ( Note:4)
	V	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V	mA
1SMA5913	3.3	113.6	10	500	1.0	100	1.0	454
1SMA5914	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMA5915	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMA5916	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMA5917	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMA5918	5.1	73.5	4.0	500	1.0	5.0	2.0	294
1SMA5919	5.6	66.9	2.0	500	1.0	5.0	3.0	267
1SMA5920	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMA5921	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1SMA5922	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1SMA5923	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1SMA5924	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1SMA5925	10	37.5	4.5	500	0.25	5.0	8.0	150
1SMA5926	11	34.1	5.5	550	0.25	5.0	8.4	136
1SMA5927	12	31.2	6.5	550	0.25	1.0	9.1	125
1SMA5928	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMA5929	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMA5930	16	23.4	10	600	0.25	1.0	12.2	93
1SMA5931	18	20.8	12	650	0.25	1.0	13.7	83
1SMA5932	20	18.7	14	650	0.25	1.0	15.2	75
1SMA5933	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMA5934	24	15.6	19	700	0.25	1.0	18.2	62
1SMA5935	27	13.9	23	700	0.25	1.0	20.6	55
1SMA5936	30	12.5	26	750	0.25	1.0	22.8	50
1SMA5937	33	11.4	33	800	0.25	1.0	25.1	45
1SMA5938	36	10.4	38	850	0.25	1.0	27.4	41
1SMA5939	39	9.6	45	900	0.25	1.0	29.7	38
1SMA5940	43	8.7	53	950	0.25	1.0	32.7	34
1SMA5941	47	8.0	67	1000	0.25	1.0	35.8	31
1SMA5942	51	7.3	70	1100	0.25	1.0	38.8	29
1SMA5943	56	6.7	86	1300	0.25	1.0	42.6	26
1SMA5944	62	6.0	100	1500	0.25	1.0	47.1	24
1SMA5945	68	5.5	120	1700	0.25	1.0	51.7	22
1SMA5946	75	5.0	140	2000	0.25	1.0	56.0	20
1SMA5947	82	4.6	160	2500	0.25	1.0	62.2	18
1SMA5948	91	4.1	200	3000	0.25	1.0	69.2	16
1SMA5949	100	3.7	250	3100	0.25	1.0	76.0	15
1SMA5950	110	3.4	300	4000	0.25	1.0	83.6	13

# RATINGS AND CHARACTERISTIC CURVES

Electrical Specification ( $T_A = @25^\circ\text{C}$  unless otherwise specified)

MODEL (Note:1)	Zener voltage	Measuring current	Maximum Zener impedance			Maximum reverse leakage current		Maximum DC Zener current
	$V_{Z@I_{ZT}}$	$I_{ZT}$	$Z_{ZT}@I_{ZT}$ (Note:2)	$Z_{ZK}@I_{ZK}$ (Note:3)	$I_{ZK}$	$I_R@V_R$	$V_R$	$I_{ZM}@50^\circ\text{C}$ (Note:4)
	V	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V	mA
1SMA5951	120	3.1	380	4500	0.25	1.0	91.2	12
1SMA5952	130	2.9	450	5000	0.25	1.0	98.8	11
1SMA5953	150	2.5	600	6000	0.25	1.0	114.0	10
1SMA5954	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMA5955	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMA5956	200	1.9	1200	8000	0.25	1.0	152.0	7.0
1SMA5957	240	1.5	1600	9000	0.25	1.0	182.4	6.0

Note:

1. The standard type Zener voltage deviation is 10%, and the subscript "B" is a special type with a deviation of 5%.
2. For Zener impedance,  $I(\text{ac rms}) = 10\% I_{ZT}$
3. For Zener knee impedance,  $I(\text{ac rms}) = 10\% I_{ZK}$
4. The maximum Zener current value here is not absolute. In practical steady state applications, the product of voltage and current should not exceed the rated power value.

## Typical Characteristics

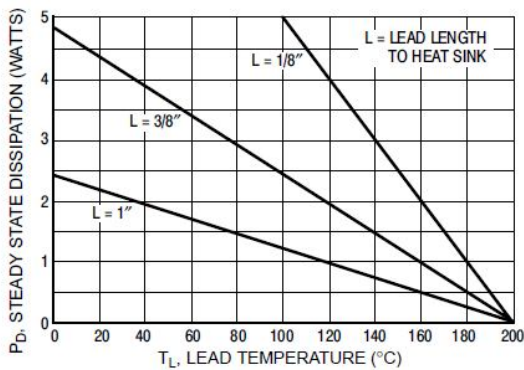


Figure 1. Power Temperature Derating Curve

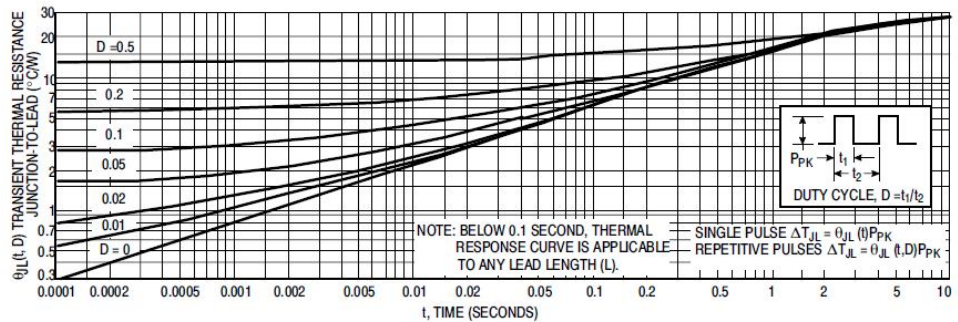


Figure 2. Typical Thermal Response L, Lead Length = 3/8 Inch

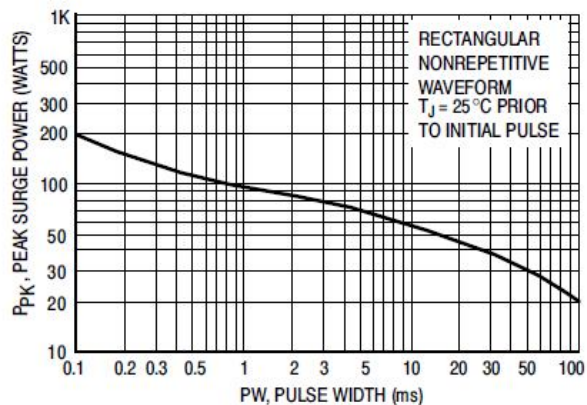


Figure 3. Maximum Surge Power