

Features

- Low Profile Package
- Ideal for Automated Placement
- Fully Automotive Qualified to AEC-Q101
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note2) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings(@ 25°C Unless Otherwise Specified)

Parameter	Symbol	Rating	Unit
DC Power Dissipation at $T_L = 75^\circ\text{C}$	P_D	2	W
Maximum Instantaneous Forward Voltage@ $I_F=200\text{mA}$	V_F	1.5	V
Operating Junction Temperature Range	T_J	-55~175	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~175	$^\circ\text{C}$

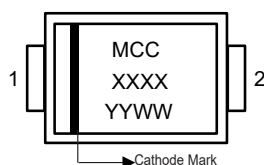
Thermal Characteristics(@ 25°C Unless Otherwise Specified)

Parameter	Symbol	Rating	Unit
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	50	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	120	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	30	$^\circ\text{C/W}$

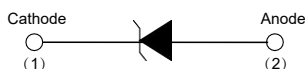
Note:

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.4" x 0.4" (10 mm x 10 mm) copper pad areas
4. The VZ type numbers listed indicate a tolerance of +/-5%

Simplified outline

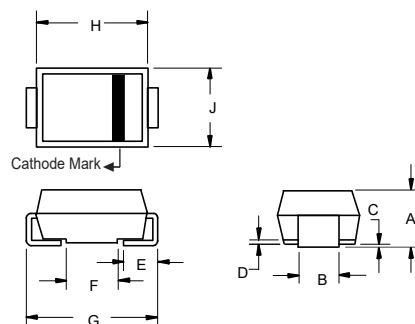


Graphic symbol



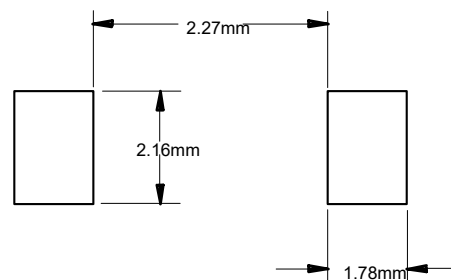
2 Watt Zener Diode 6.8 to 220 Volts

SMA (DO-214AC) LEAD FRAME



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.075	0.096	1.90	2.44	
B	0.050	0.064	1.27	1.63	
C	0.002	0.008	0.051	0.203	
D	---	0.020	---	0.51	
E	0.030	0.060	0.76	1.52	
F	0.065	0.091	1.65	2.32	
G	0.189	0.220	4.80	5.59	
H	0.157	0.187	4.00	4.75	
J	0.090	0.115	2.25	2.92	

SUGGESTED SOLDER PAD LAYOUT



XXXX = Marking code YYWW = Date Code

Electrical Characteristics @ 25°C Unless Otherwise Specified

Part Number	Nominal Zener Voltage			Test Current	Maximum Dynamic Impedance Resistance			Maximum Reverse leakage Current		Maximum DC Zener Current	Marking Code
	$V_Z @ I_{ZT} \text{ (Note 4)}$			I_{ZT}	$Z_{ZT} \text{ at } I_{ZT}$	$Z_{ZK} \text{ at } I_{ZK}$	I_{ZK}	I_R	V_R	I_{ZM}	
	Min(V)	Nom(V)	Max(V)	mA	Ω	Ω	mA	μA	V	mA	
SMA2Z6.8AQ	6.46	6.8	7.14	73.5	2.0	700	1.00	10.0	4.0	266.0	2Z6.8A
SMA2Z7.5AQ	7.13	7.5	7.88	66.5	2.0	700	0.50	10.0	5.0	242.0	2Z7.5A
SMA2Z8.2AQ	7.79	8.2	8.61	61.0	2.3	700	0.50	10.0	6.0	220.0	2Z8.2A
SMA2Z9.1AQ	8.65	9.1	9.56	55.0	2.5	700	0.50	10.0	7.0	200.0	2Z9.1A
SMA2Z10AQ	9.50	10.0	10.50	50.0	3.5	700	0.25	10.0	7.6	182.0	2Z10A
SMA2Z11AQ	10.45	11.0	11.55	45.5	4.0	700	0.25	1.0	8.4	166.0	2Z11A
SMA2Z12AQ	11.40	12.0	12.60	41.5	4.5	700	0.25	1.0	9.1	152.0	2Z12A
SMA2Z13AQ	12.35	13.0	13.65	38.5	5.0	700	0.25	0.5	9.9	138.0	2Z13A
SMA2Z14AQ	13.30	14.0	14.70	35.7	5.5	700	0.25	0.5	10.6	130.0	2Z14A
SMA2Z15AQ	14.25	15.0	15.75	33.4	7.0	700	0.25	0.5	11.4	122.0	2Z15A
SMA2Z16AQ	15.20	16.0	16.80	31.2	8.0	700	0.25	0.5	12.2	114.0	2Z16A
SMA2Z17AQ	16.15	17.0	17.85	29.4	9.0	750	0.25	0.5	13.0	107.0	2Z17A
SMA2Z18AQ	17.10	18.0	18.90	27.8	10.0	750	0.25	0.5	13.7	100.0	2Z18A
SMA2Z19AQ	18.05	19.0	19.95	26.3	11.0	750	0.25	0.5	14.4	95.0	2Z19A
SMA2Z20AQ	19.00	20.0	21.00	25.0	11.0	750	0.25	0.5	15.2	90.0	2Z20A
SMA2Z22AQ	20.90	22.0	23.10	22.8	12.0	750	0.25	0.5	16.7	82.0	2Z22A
SMA2Z24AQ	22.80	24.0	25.20	20.8	13.0	750	0.25	0.5	18.2	76.0	2Z24A
SMA2Z27AQ	25.65	27.0	28.35	18.5	18.0	750	0.25	0.5	20.6	68.0	2Z27A
SMA2Z30AQ	28.50	30.0	31.50	16.6	20.0	1000	0.25	0.5	22.5	60.0	2Z30A
SMA2Z33AQ	31.35	33.0	34.65	15.1	23.0	1000	0.25	0.5	25.1	55.0	2Z33A
SMA2Z36AQ	34.20	36.0	37.80	13.9	25.0	1000	0.25	0.5	27.4	50.0	2Z36A
SMA2Z39AQ	37.05	39.0	40.95	12.8	30.0	1000	0.25	0.5	29.7	47.0	2Z39A
SMA2Z43AQ	40.85	43.0	45.15	11.6	35.0	1500	0.25	0.5	32.7	43.0	2Z43A
SMA2Z47AQ	44.65	47.0	49.35	10.6	40.0	1500	0.25	0.5	35.8	39.0	2Z47A
SMA2Z51AQ	48.45	51.0	53.55	9.8	48.0	1500	0.25	0.5	38.8	36.0	2Z51A
SMA2Z56AQ	53.20	56.0	58.80	9.0	55.0	2000	0.25	0.5	42.6	32.0	2Z56A
SMA2Z62AQ	58.90	62.0	65.10	8.1	60.0	2000	0.25	0.5	47.1	29.0	2Z62A
SMA2Z68AQ	64.60	68.0	71.40	7.4	75.0	2000	0.25	0.5	51.7	27.0	2Z68A
SMA2Z75AQ	71.25	75.0	78.75	6.7	90.0	2000	0.25	0.5	56.0	24.0	2Z75A
SMA2Z82AQ	77.90	82.0	86.10	6.1	100.0	3000	0.25	0.5	62.2	22.0	2Z82A
SMA2Z91AQ	86.45	91.0	95.55	5.5	125.0	3000	0.25	0.5	69.2	20.0	2Z91A
SMA2Z100AQ	95.00	100.0	105.00	5.0	175.0	3000	0.25	0.5	76.0	18.0	2Z100A
SMA2Z110AQ	104.50	110.0	115.50	4.5	250.0	4000	0.25	0.5	83.6	17.0	2Z110A
SMA2Z120AQ	114.00	120.0	126.00	4.2	325.0	4500	0.25	0.5	91.2	15.0	2Z120A
SMA2Z130AQ	123.50	130.0	136.50	3.8	400.0	5000	0.25	0.5	98.8	14.0	2Z130A
SMA2Z140AQ	133.00	140.0	147.00	3.6	500.0	5500	0.25	0.5	106.4	13.0	2Z140A
SMA2Z150AQ	142.50	150.0	157.50	3.3	575.0	6000	0.25	0.5	114.0	12.0	2Z150A
SMA2Z160AQ	152.00	160.0	168.00	3.1	650.0	6500	0.25	0.5	121.6	11.0	2Z160A
SMA2Z170AQ	161.50	170.0	178.50	2.9	675.0	7000	0.25	0.5	130.4	11.0	2Z170A
SMA2Z180AQ	171.00	180.0	189.00	2.8	725.0	7000	0.25	0.5	136.8	10.0	2Z180A
SMA2Z190AQ	180.50	190.0	199.50	2.6	825.0	8000	0.25	0.5	144.8	10.0	2Z190A
SMA2Z200AQ	190.00	200.0	210.00	2.5	1900.0	9990	0.25	0.5	152.0	9.0	2Z200A
SMA2Z220AQ	209.00	220.0	231.00	2.0	2000.0	8500	0.25	0.5	167.0	8.0	2Z220A

Curve Characteristics

Fig. 1 - Power Derating Curve

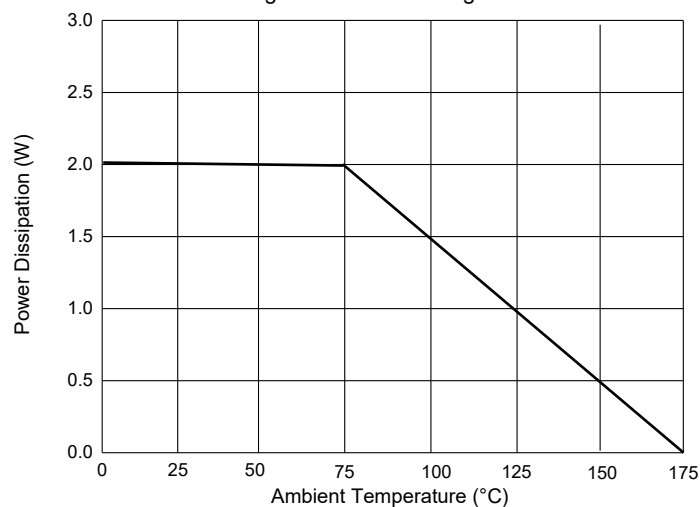


Fig. 2 - Typical Forward Characteristics

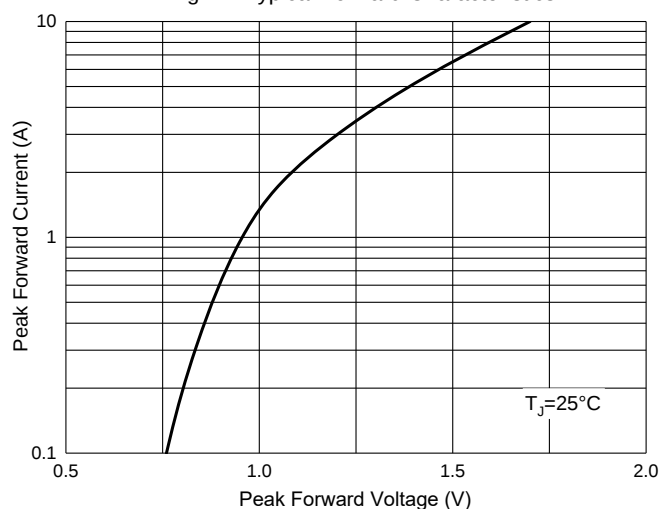


Fig. 3 - Pulse Waveform

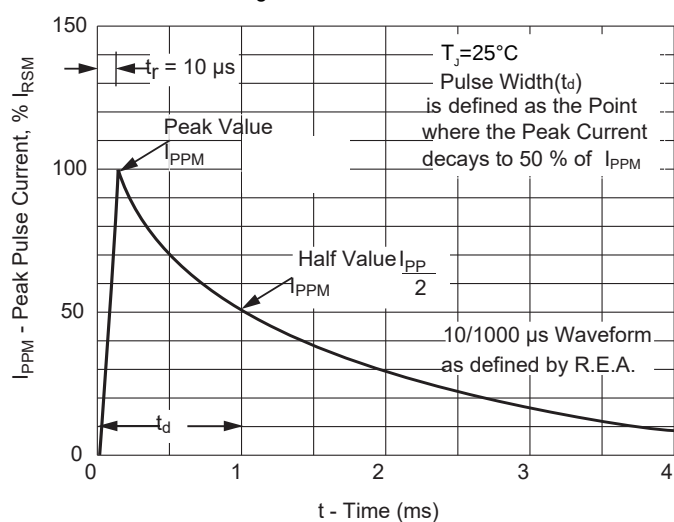
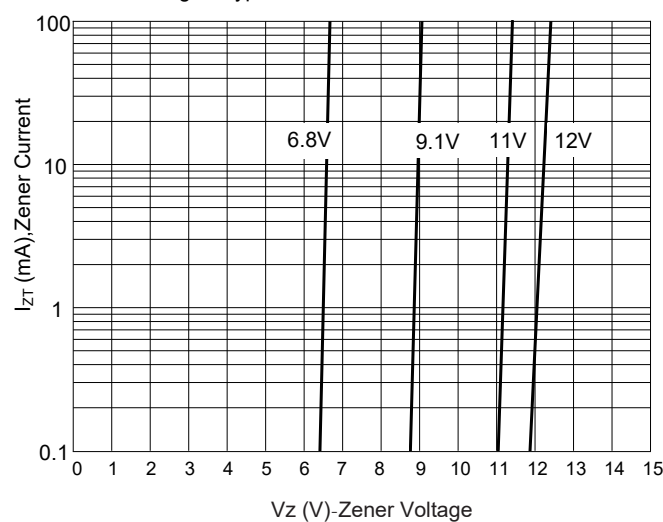


Fig. 4 - Typical Zener Breakdown Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:7.5Kpcs/Reel

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