



# THE DATASHEET OF SMAZ33-TP



**Features**

- 1.0W Power Dissipation
- High Surge Capability
- Ideally Suited for Automatic Assembly
- Standard  $V_z$  Tolerance is +/- 5%
- 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 Compliant. See Ordering Information)

**Maximum Ratings**

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Junction to Terminal: 30°C/W Junction to Terminal
- Thermal Resistance: 100°C/W Junction to Ambient

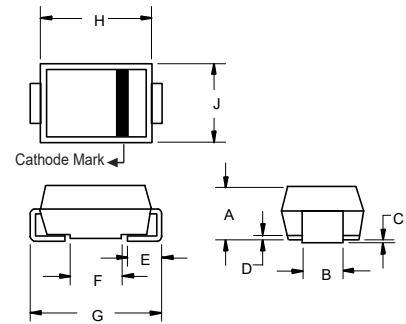
Parameter	Symbol	Rating	Conditions
Zener Current	$I_{ZM}$	Pd/Vz mA	
Power Dissipation	$P_{tot}$	1.0W	$T_A=50^\circ\text{C}$

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.

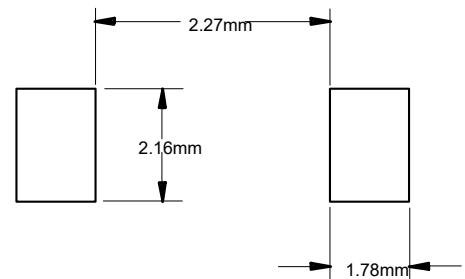
**1 Watt  
Zener Diode  
5.1V - 39V Volts**

**SMA (DO-214AC)  
LEAD FRAME**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.079	0.096	2.00	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	0.181	4.00	4.60	
J	0.090	0.115	2.25	2.92	

**SUGGESTED SOLDER PAD LAYOUT**



**Electrical Characteristics @ 25°C Unless Otherwise Specified,  $V_F=1.2$  V max ,  $I_F=200$  mA for all types**

MCC Part Number	Zener Voltage			Maximum Zener Impedance		Maximum Zener Impedance		Reverse Current		Maximum Zener Current (Note 3)	Marking Code
	$V_Z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT}$	$I_{ZK}$	$Z_{ZK}$	$I_R(\text{Max})$	$V_R$	$I_{ZM}$	
	Min.(V)	Nom(V)	Max.(V)	mA	$\Omega$	mA	$\Omega$	$\mu\text{A}$	V	mA	
SMAZ5V1	4.84	5.10	5.40	100	5.0	1.0	500	2.5	1.0	196	Z5V1
SMAZ5V6	5.32	5.60	5.88	100	2.0	2.0	250	5.0	2.0	179	Z5V6
SMAZ6V2	5.89	6.20	6.51	100	2.0	2.0	200	5.0	3.0	161	Z6V2
SMAZ6V8	6.46	6.80	7.14	100	2.0	1.0	200	5.0	4.0	147	Z6V8
SMAZ7V5	7.13	7.50	7.88	100	2.0	1.0	450	5.0	5.0	133	Z7V5
SMAZ8V2	7.79	8.20	8.61	100	2.0	1.0	200	5.0	6.0	122	Z8V2
SMAZ9V1	8.65	9.10	9.56	50	4.0	1.0	200	5.0	7.0	110	Z9V1
SMAZ10	9.50	10.00	10.50	50	4.0	1.0	200	1.0	7.6	100	Z10
SMAZ12	11.40	12.00	12.60	50	7.0	1.0	150	1.0	9.1	83	Z12
SMAZ15	14.25	15.00	15.75	50	10.0	1.0	150	1.0	11.4	67	Z15
SMAZ16	15.20	16.00	16.80	25	15.0	1.0	150	0.5	12.2	63	Z16
SMAZ18	17.10	18.00	18.90	25	15.0	1.0	150	0.5	13.7	56	Z18
SMAZ20	19.00	20.00	21.00	25	15.0	1.0	180	0.5	15.2	50	Z20
SMAZ22	20.90	22.00	23.10	25	15.0	1.0	180	0.5	16.7	45	Z22
SMAZ24	22.80	24.00	25.20	25	15.0	1.0	180	0.5	18.2	42	Z24
SMAZ27	25.65	27.00	28.35	25	15.0	1.0	200	0.5	20.5	37	Z27
SMAZ30	28.50	30.00	31.50	25	15.0	1.0	250	0.5	22.8	33	Z30
SMAZ33	31.35	33.00	34.65	25	15.0	1.0	300	0.5	25.1	30	Z33
SMAZ36	34.20	36.00	37.80	10	40.0	1.0	350	0.5	27.4	28	Z36
SMAZ39	37.05	39.00	40.95	10	40.0	1.0	450	0.5	29.6	26	Z39

Notes: 3.Device mounted on FR-4 PCB, 1 inch x0.85 inch x 0.062 inch

**Curve Characteristics**

Fig. 1 - Power Derating Curve

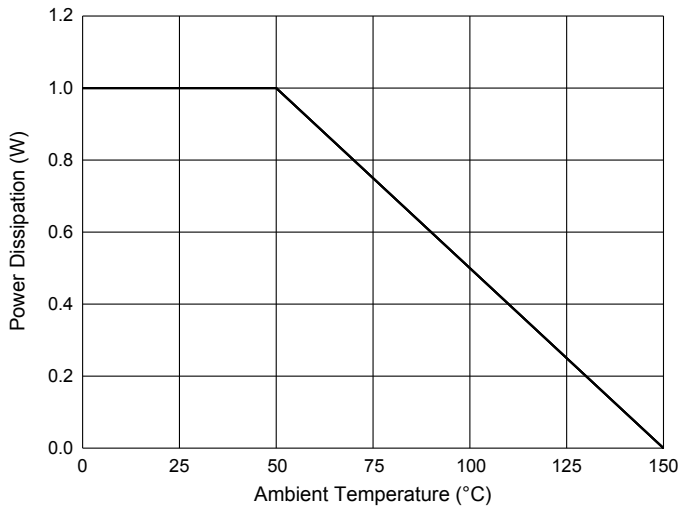


Fig. 2 - Typical Zener Breakdown Characteristics

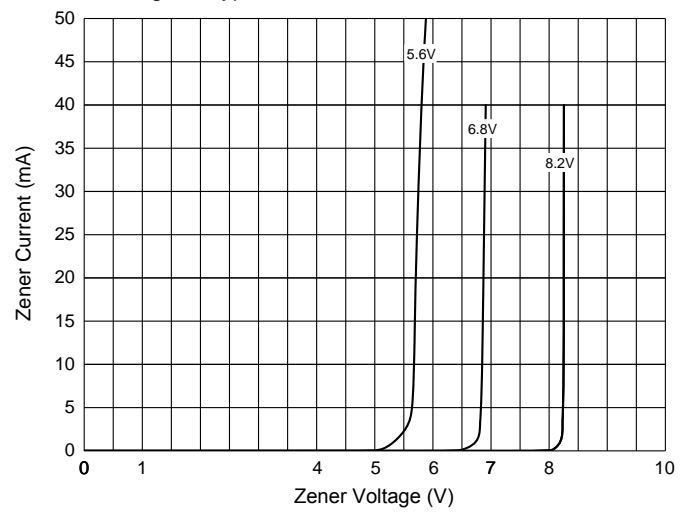
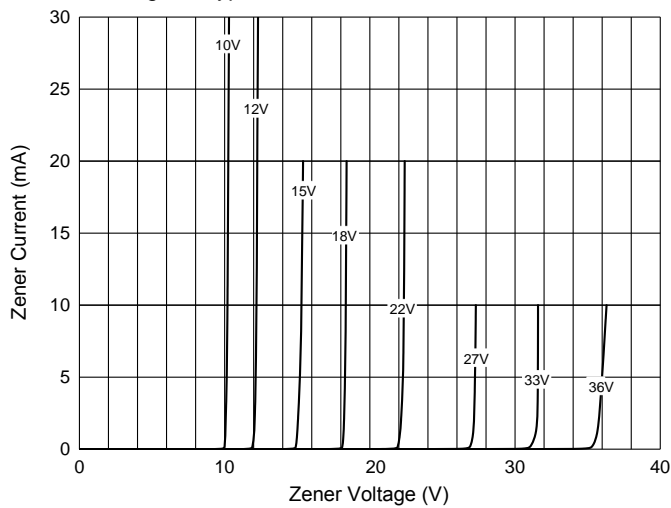


Fig. 3 - Typical Zener Breakdown Characteristics



## Ordering Information

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

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