RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

MM1Z5221B-
MM1Z5261B

SURFACE MOUNT ZENER DIODE

VOLTAGE RANGE 2.4 to 47 Volts POWER RATING 500 mWatts

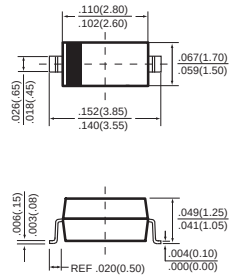
FEATURES

* Planar Die Construction
* 500mW Power Dissipation
* General Purpose, Medium Current
* Ldeally Suited for Automated Assembly Processes

MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-O rate flame retardant
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.01 gram

SOD-123



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

MAXIMUM RATINGES (@ T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Max. Steady State Power Dissipation @T_A=25°C (Note 1)	P_D	500	mW
Max. Operating Temperature Range	T_J	-65 to +150	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS (@ T_A = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Thermal Resistance Junction to Ambient (Note 1)	R θ_{JA}	-	-	350	°C/W
Max. Instantaneous Forward Voltage at I_F= 10mA	V_F	-	-	0.9	Volts

Note 1. Dveice mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25 mm^2.

ELECTRICAL CHARACTERISTICS (@TA=25°C unless otherwise specified)

TYPE	Zener voltage Range (Note 1) V_Z (V) @ I_{ZT}			Test current	Maximum Zener impedance			Maximum Reverse leakage current		MK
	Nom	Min	Max		Z_{ZT} at I_{ZT}	Z_{ZK}	at I_{ZK}	I_R	at V_R	
	Volts	Volts	Volts	I_{ZT} (mA)	(Ω)	(Ω)	(mA)	(uA)	(V)	
MM1Z5221B	2.4	2.28	2.52	20	30	1200	0.25	100	1.0	A4
MM1Z5223B	2.7	2.57	2.84	20	30	1300	0.25	75	1.0	B4
MM1Z5225B	3.0	2.85	3.15	20	30	1600	0.25	50	1.0	C4
MM1Z5226B	3.3	3.14	3.47	20	28	1600	0.25	25	1.0	D4
MM1Z5227B	3.6	3.42	3.78	20	24	1700	0.25	15	1.0	E4
MM1Z5228B	3.9	3.71	4.10	20	23	1900	0.25	10	1.0	F4
MM1Z5229B	4.3	4.09	4.52	20	22	2000	0.25	5.0	1.0	H4
MM1Z5230B	4.7	4.47	4.94	20	19	1900	0.25	5.0	2.0	J4
MM1Z5231B	5.1	4.85	5.36	20	17	1600	0.25	5.0	2.0	K4
MM1Z5232B	5.6	5.32	5.88	20	11	1600	0.25	5.0	3.0	M4
MM1Z5234B	6.2	5.89	6.51	20	7	1000	0.25	5.0	4.0	N4
MM1Z5235B	6.8	6.46	7.14	20	5	750	0.25	3.0	5.0	P4
MM1Z5236B	7.5	7.13	7.88	20	6	500	0.25	3.0	6.0	R4
MM1Z5237B	8.2	7.79	8.61	20	8	500	0.25	3.0	6.5	X4
MM1Z5239B	9.1	8.65	9.56	20	10	600	0.25	3.0	7.0	Y4
MM1Z5240B	10	9.50	10.50	20	17	600	0.25	3.0	8.0	Z4
MM1Z5241B	11	10.45	11.55	20	22	600	0.25	2.0	8.4	A5
MM1Z5242B	12	11.40	12.60	20	30	600	0.25	1.0	9.1	B5
MM1Z5243B	13	12.35	13.65	9.5	13	600	0.25	0.5	9.9	C5
MM1Z5245B	15	14.25	15.75	8.5	16	600	0.25	0.1	11	D5
MM1Z5246B	16	15.20	16.80	7.8	17	600	0.25	0.1	12	E5
MM1Z5248B	18	17.10	18.90	7.0	21	600	0.25	0.1	14	F5
MM1Z5249B	19	18.05	19.95	6.6	23	600	0.25	0.1	14	K9
MM1Z5250B	20	19.00	21.00	6.2	25	600	0.25	0.1	15	H5
MM1Z5251B	22	20.90	23.10	5.6	29	600	0.25	0.1	17	J5
MM1Z5252B	24	22.80	25.20	5.2	33	600	0.25	0.1	18	K5
MM1Z5253B	25	23.75	26.25	5.0	35	600	0.25	0.1	19	M9
MM1Z5254B	27	25.65	28.35	5.0	41	600	0.25	0.1	21	M5
MM1Z5256B	30	28.50	31.50	4.2	49	600	0.25	0.1	23	N5
MM1Z5257B	33	31.35	34.65	3.8	58	700	0.25	0.1	25	P5
MM1Z5258B	36	34.20	37.80	3.4	70	700	0.25	0.1	27	R5
MM1Z5259B	39	37.05	40.95	3.2	80	800	0.25	0.1	30	X5
MM1Z5260B	43	40.85	45.15	3.0	93	900	0.25	0.1	33	Y5
MM1Z5261B	47	44.65	49.35	2.7	105	1000	0.25	0.1	36	Z5

Note 1. Tested with pulses,Tp≤1.0ms.

RATING AND CHARACTERISTICS CURVES (MM1Z5221B-MM1Z5261B)

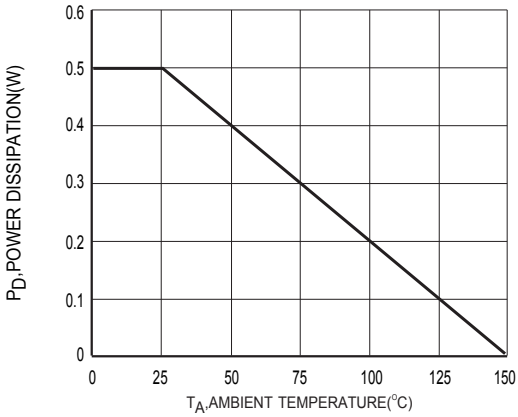


Figure 1 Power Dissipation vs Ambient Temperature

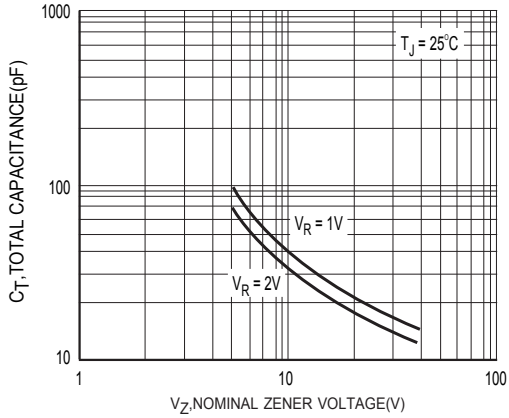


Figure 2 Typical Capacitance

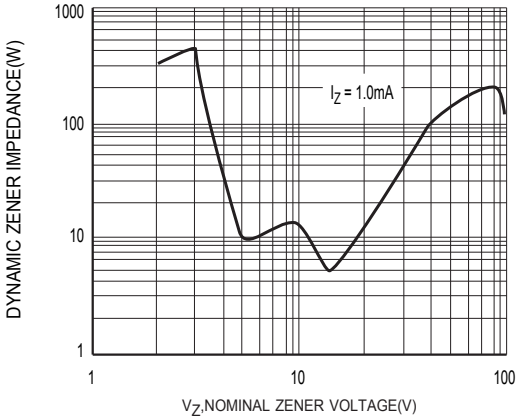


Figure 3 Zener Voltage vs Zener Impedence

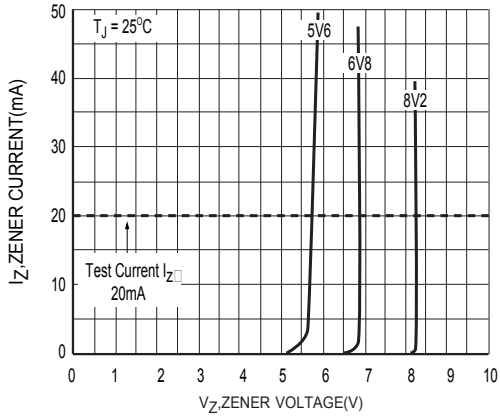


Figure 4 Zener Breakdown Characteristics

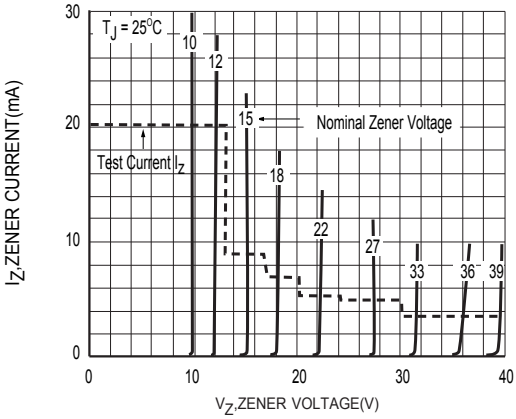


Figure 5 Zener Breakdown Characteristics

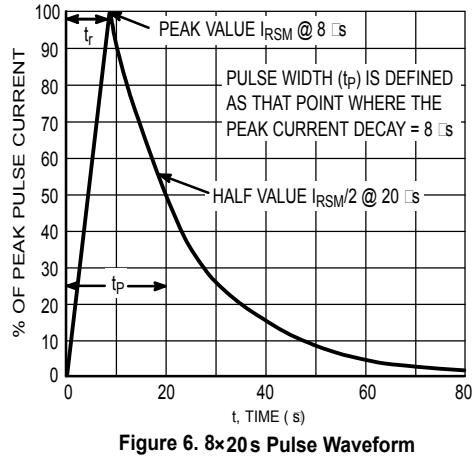


Figure 6. 8×20 s Pulse Waveform

DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.