



# MMBZ5221BTS - MMBZ5259BTS

## TRIPLE SURFACE MOUNT ZENER DIODE ARRAY

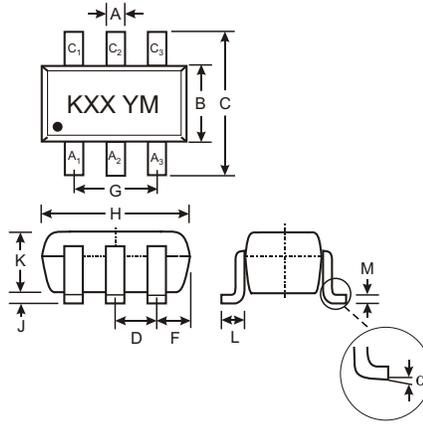
NEW PRODUCT

### Features

- Three Isolated Zeners in Ultra-Small Surface Mount Package
- Ideally Suited for Automated Assembly Processes

### Mechanical Data

- Case: SOT-363, Molded Plastic
- Case material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Orientation: See Diagram
- Marking: Marking Code (See Table on Page 2)
- Weight: 0.006 grams (approx.)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 2) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Power Dissipation (Note 1)	P <sub>d</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150	°C

### Ordering Information (Note 4)

Device	Packaging	Shipping
(Type Number)-7*	SOT-363	3000/Tape & Reel

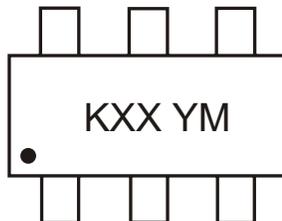
\* Add "-7" to the appropriate type number in Table 1 from Sheet 2 example: 6.2V Zener = MMBZ5234BTS-7.

- Notes:
1. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration test pulse used to minimize self-heating effect.
  3. f = 1KHz.
  4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)		Maximum Reverse Leakage Current (Note 2)	
		V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub> = 0.25mA	I <sub>R</sub>	@ V <sub>R</sub>
		Nom (V)	Min (V)	Max (V)	mA	Ω		μA	V
MMBZ5221BTS	KSB	2.4	2.28	2.52	20	30	1200	100	1.0
MMBZ5223BTS	KSC	2.7	2.57	2.84	20	30	1300	75	1.0
MMBZ5225BTS	KSD	3.0	2.85	3.15	20	30	1600	50	1.0
MMBZ5226BTS	KSE	3.3	3.14	3.47	20	28	1600	25	1.0
MMBZ5227BTS	KSF	3.6	3.42	3.78	20	24	1700	15	1.0
MMBZ5228BTS	KSG	3.9	3.71	4.10	20	23	1900	10	1.0
MMBZ5229BTS	KSH	4.3	4.09	4.52	20	22	2000	5.0	1.0
MMBZ5230BTS	KS1	4.7	4.47	4.94	20	19	1900	5.0	2.0
MMBZ5231BTS	KS2	5.1	4.85	5.36	20	17	1600	5.0	2.0
MMBZ5232BTS	KS3	5.6	5.32	5.88	20	11	1600	5.0	3.0
MMBZ5233BTS	KRF	6.0	5.70	6.30	20	7	1600	5.0	3.5
MMBZ5234BTS	KS4	6.2	5.89	6.51	20	7	1000	5.0	4.0
MMBZ5235BTS	KS5	6.8	6.46	7.14	20	5	750	3.0	5.0
MMBZ5236BTS	KS6	7.5	7.13	7.88	20	6	500	3.0	6.0
MMBZ5237BTS	KS7	8.2	7.79	8.61	20	8	500	3.0	6.5
MMBZ5238BTS	KRG	8.7	8.27	9.14	20	8	600	3.0	6.5
MMBZ5239BTS	KS8	9.1	8.65	9.56	20	10	600	3.0	7.0
MMBZ5240BTS	KS9	10	9.50	10.50	20	17	600	3.0	8.0
MMBZ5241BTS	KR1	11	10.45	11.55	20	22	600	2.0	8.4
MMBZ5242BTS	KR2	12	11.40	12.60	20	30	600	1.0	9.1
MMBZ5243BTS	KR3	13	12.35	13.65	9.5	13	600	0.5	9.9
MMBZ5245BTS	KR4	15	14.25	15.75	8.5	16	600	0.1	11
MMBZ5246BTS	KR5	16	15.20	16.80	7.8	17	600	0.1	12
MMBZ5248BTS	KR6	18	17.10	18.90	7.0	21	600	0.1	14
MMBZ5250BTS	KR7	20	19.00	21.00	6.2	25	600	0.1	15
MMBZ5251BTS	KR8	22	20.90	23.10	5.6	29	600	0.1	17
MMBZ5252BTS	KR9	24	22.80	25.20	5.2	33	600	0.1	18
MMBZ5254BTS	KRA	27	25.65	28.35	5.0	41	600	0.1	21
MMBZ5255BTS	KRH	28	26.60	29.40	4.5	44	600	0.1	21
MMBZ5256BTS	KRB	30	28.50	31.50	4.2	49	600	0.1	23
MMBZ5257BTS	KRC	33	31.35	34.65	3.8	58	700	0.1	25
MMBZ5258BTS	KRD	36	34.20	37.80	3.4	70	700	0.1	27
MMBZ5259BTS	KRE	39	37.05	40.95	3.2	80	800	0.1	30

Notes: 2. Short duration test pulse used to minimize self-heating effect.  
3. f = 1KHz.

**Marking Information**


KXX = Product Type Marking Code  
YM = Date Code Marking  
Y = Year ex: N = 2002  
M = Month ex: 9 = September

Date Code Key

<b>Year</b>	2002	2003	2004	2005	2006	2007	2008	2009
<b>Code</b>	N	P	R	S	T	U	V	W

<b>Month</b>	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Code</b>	1	2	3	4	5	6	7	8	9	O	N	D

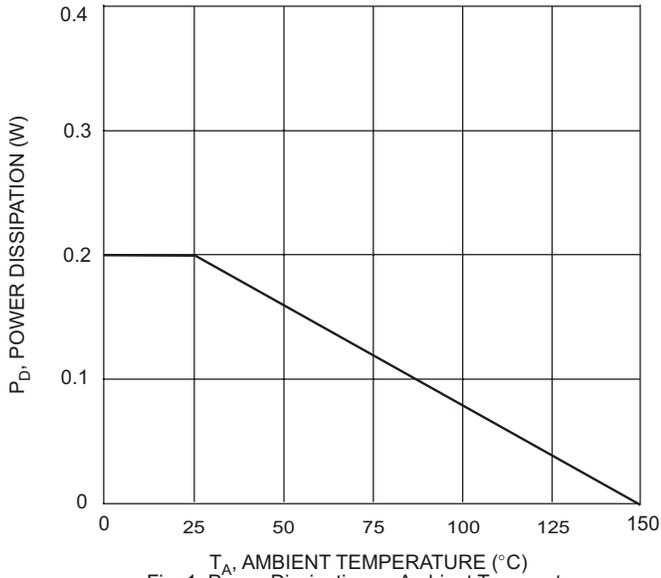


Fig. 1 Power Dissipation vs Ambient Temperature

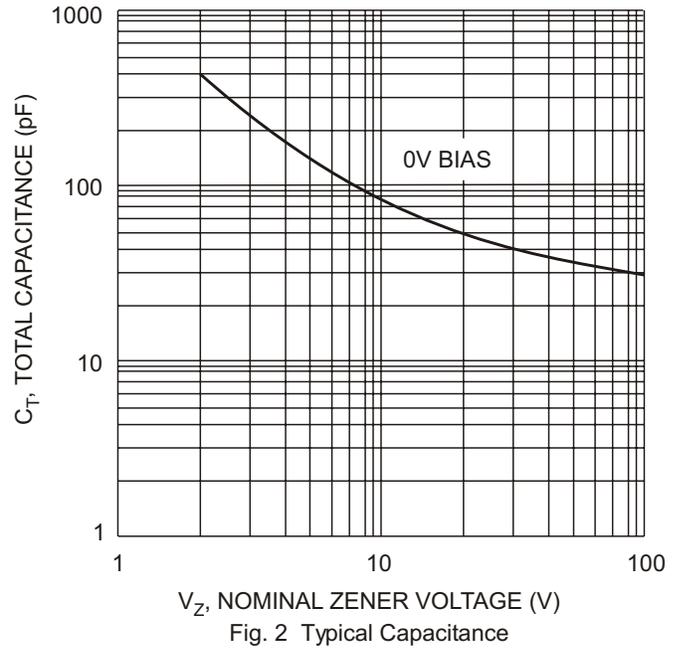


Fig. 2 Typical Capacitance

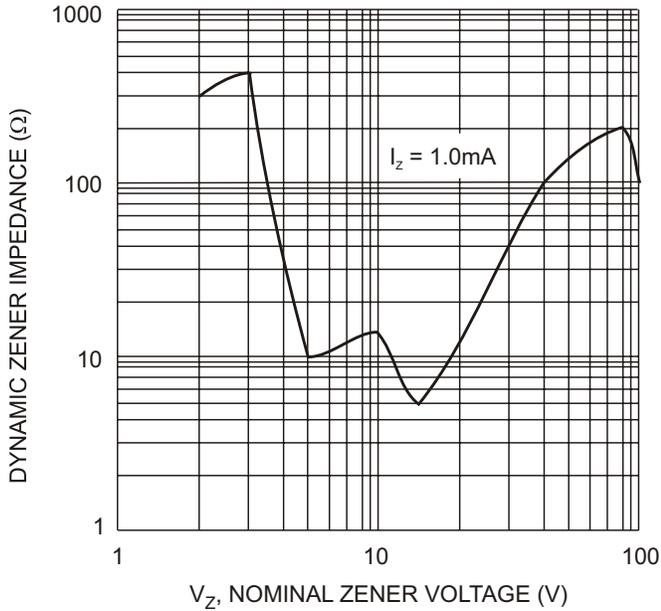


Fig. 3 Zener Voltage vs. Zener Impedance

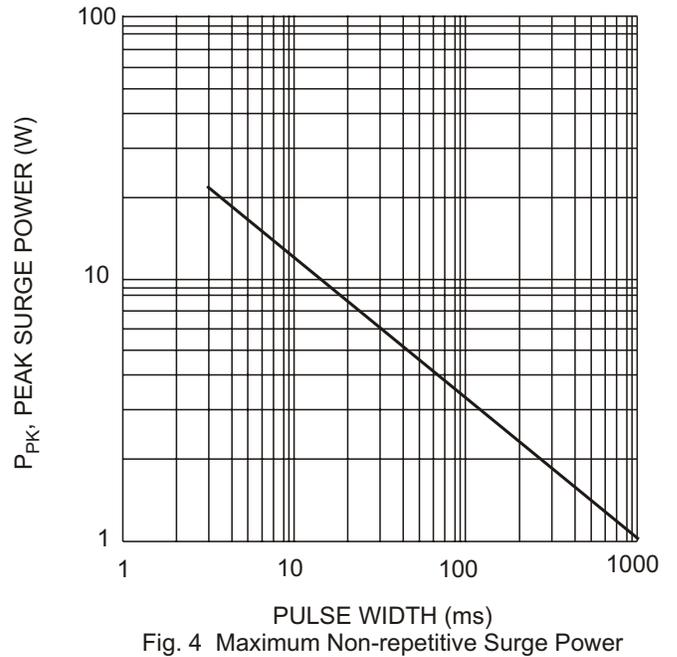


Fig. 4 Maximum Non-repetitive Surge Power