

## Features

- Wide Voltage Range Available
- Small Outline Package For Space Savings
- Surface Mount Package
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

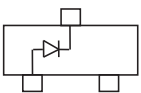
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance : 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Conditions
Power Dissipation	$P_D$	200mW	Note 1
Maximum Forward Voltage	$V_F$	0.9V	$I_F=10mA$

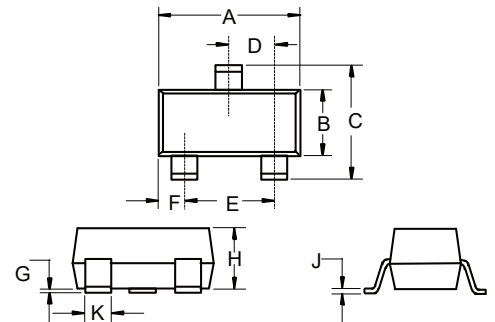
Note:1. Mounted on FR4 PC Board With Our Suggested Solder Pad Layout .

## Internal Structure



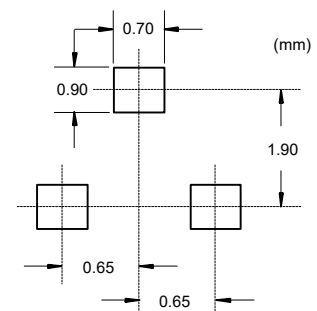
# 200 mWatt Zener Diodes 2.4V to 39 Volts

## SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	

## Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC Part Number	Nominal Zener Voltage <sup>(2,3)</sup>	Test Current	Maximum Zener Impedance <sup>(4)</sup>			Maximum Reverse Leakage Current		Marking Code	
	V <sub>Z</sub>		I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	I <sub>ZK</sub>	Z <sub>ZK</sub>	I <sub>R</sub>		V <sub>R</sub>
	V		mA	Ω	mA	Ω	μA		V
MMBZ5221BW	2.4	20	30	0.25	1200	100	1.0	KC1/C1	
MMBZ5222BW	2.5	20	30	0.25	1250	100	1.0	KC2/C2	
MMBZ5223BW	2.7	20	30	0.25	1300	75	1.0	KC3/C3	
MMBZ5225BW	3.0	20	29	0.25	1600	50	1.0	KC5/C5	
MMBZ5226BW	3.3	20	28	0.25	1600	25	1.0	KG1/D1	
MMBZ5227BW	3.6	20	24	0.25	1700	15	1.0	KG2/D2	
MMBZ5228BW	3.9	20	23	0.25	1900	10	1.0	KG3/D3	
MMBZ5229BW	4.3	20	22	0.25	2000	5.0	1.0	KG4/D4	
MMBZ5230BW	4.7	20	19	0.25	1900	5.0	2.0	KG5/D5	
MMBZ5231BW	5.1	20	17	0.25	1600	5.0	2.0	KE1/E1	
MMBZ5232BW	5.6	20	11	0.25	1600	5.0	3.0	KE2/E2	
MMBZ5234BW	6.2	20	7.0	0.25	1000	5.0	4.0	KE4/E4	
MMBZ5235BW	6.8	20	5.0	0.25	750	3.0	5.0	KE5/E5	
MMBZ5236BW	7.5	20	6.0	0.25	500	3.0	6.0	KF1/F1	
MMBZ5237BW	8.2	20	8.0	0.25	500	3.0	6.5	KF2/F2	
MMBZ5239BW	9.1	20	10	0.25	600	3.0	7.0	KF4/F4	
MMBZ5240BW	10	20	17	0.25	600	3.0	8.0	KF5/F5	
MMBZ5241BW	11	20	22	0.25	600	2.0	8.4	KH1/H1	
MMBZ5242BW	12	20	30	0.25	600	1.0	9.1	KH2/H2	
MMBZ5243BW	13	9.5	13	0.25	600	0.5	9.9	KH3/H3	
MMBZ5244BW	14	9.0	15	0.25	600	0.1	10	KH4/H4	
MMBZ5245BW	15	8.5	16	0.25	600	0.1	11	KH5/H5	
MMBZ5246BW	16	7.8	17	0.25	600	0.1	12	KJ1/J1	
MMBZ5248BW	18	7.0	21	0.25	600	0.1	14	KJ3/J3	
MMBZ5250BW	20	6.2	25	0.25	600	0.1	15	KJ5/J5	
MMBZ5251BW	22	5.6	29	0.25	600	0.1	17	KK1/K1	
MMBZ5252BW	24	5.2	33	0.25	600	0.1	18	KK2/K2	
MMBZ5254BW	27	5.0	41	0.25	600	0.1	21	KK4/K4	
MMBZ5255BW	28	4.5	44	0.25	600	0.1	21	KK5/K5	
MMBZ5256BW	30	4.2	49	0.25	600	0.1	23	KM1/M1	
MMBZ5257BW	33	3.8	58	0.25	700	0.1	25	KM2/M2	
MMBZ5258BW	36	3.4	70	0.25	700	0.1	27	KM3/M3	
MMBZ5259BW	39	3.2	80	0.25	800	0.1	30	KM4/M4	

Note:

2. Tolerance and Type Number Designation. The Type Numbers Listed Have a Standard Tolerance on The Nominal Zener Voltage of ±5%.
3. Zener Voltage (V<sub>Z</sub>) Measurement. Guarantees The Zener Voltage When Measured at 90 Seconds While Maintaining The Lead Temperature (T<sub>L</sub>) at 25°C, from The Diode Body.
4. Zener Impedance (Z<sub>Z</sub>) Derivation. The zener Impedance is Derived from The 60 Cycle AC Voltage, Which Results When an AC Current Having an rms Value Equal to 10% of the DC Zener Current (I<sub>ZT</sub> or I<sub>ZK</sub>) is Superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>.

## Curve Characteristics

Fig. 1 - Power Derating Curve

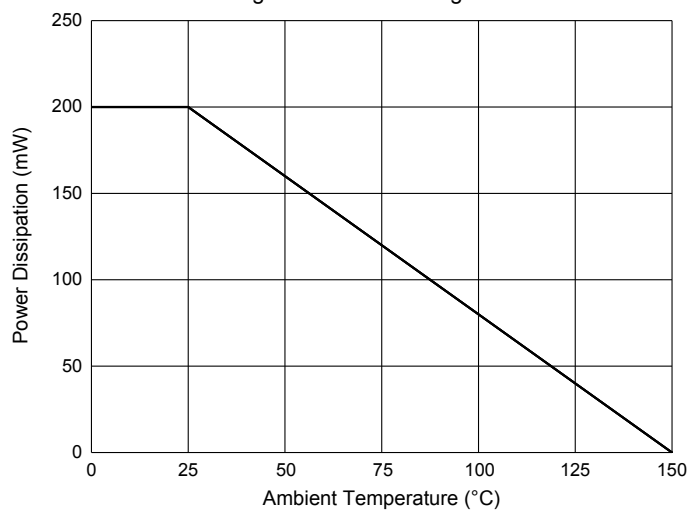
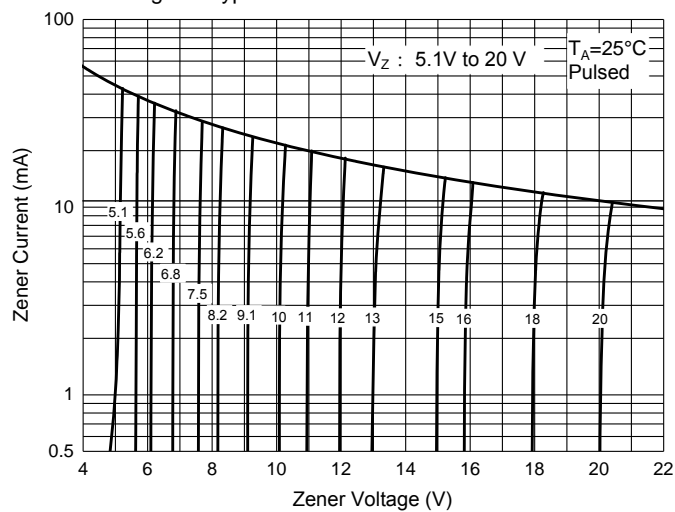


Fig. 2 - Typical Zener Breakdown Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp** . does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp** . and all the companies whose products are represented on our website, harmless against all damages.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.