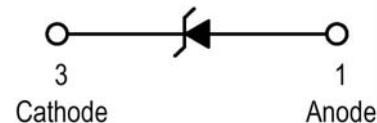
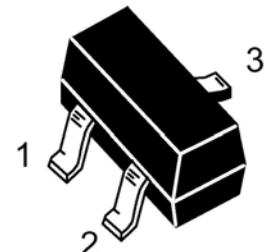




# Zener diode

## Features

1. High reliability
2. Wide voltage range available
3. Low reverse current level
4. Small outline package for space savings
5. Surface mount package



## Applications

Voltage stabilization

## Absolute Maximum Ratings

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$T_{\text{amb}} \leqslant 75^\circ\text{C}$		$P_V$	410	mW
Z-current			$I_Z$	$P_V/V_Z$	mA
Junction temperature			$T_j$	150	°C
Storage temperature range			$T_{\text{stg}}$	-55~+150	°C

## Maximum Thermal Resistance

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$I=9.5\text{mm}(3/8")$ $T_L=\text{constant}$	$R_{\text{thJA}}$	300	K/W

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

## Electrical Characteristics

$T_j=25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=10\text{mA}$		$V_F$			0.9	V

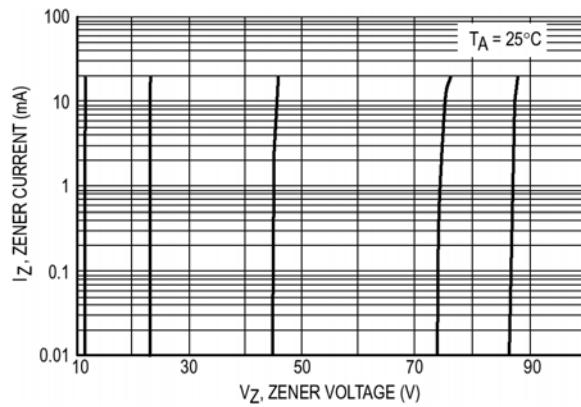
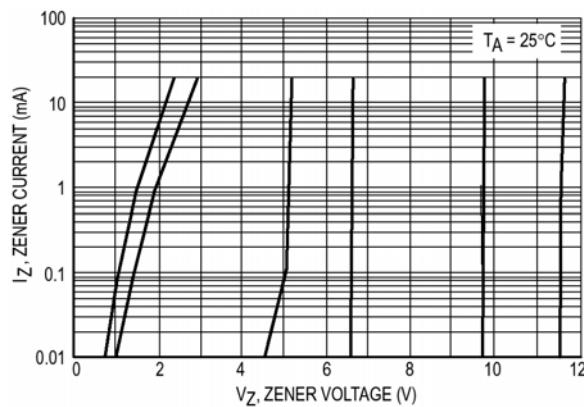
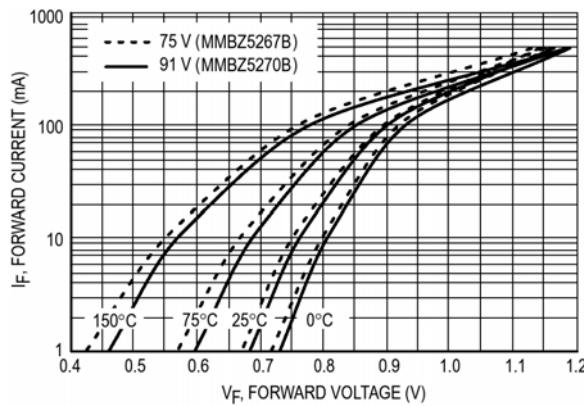
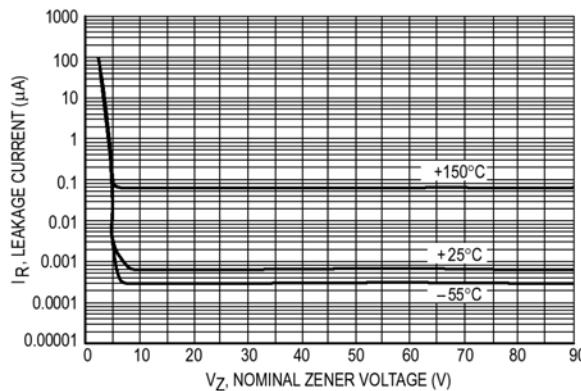
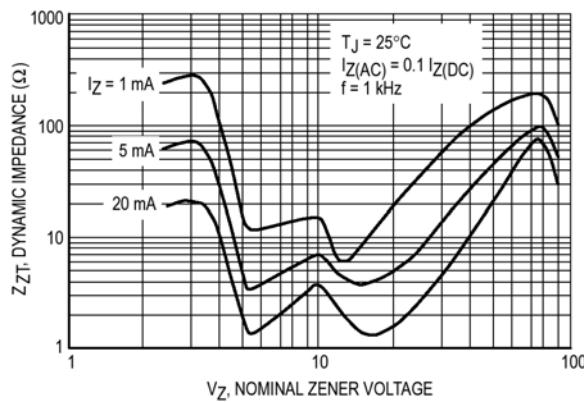
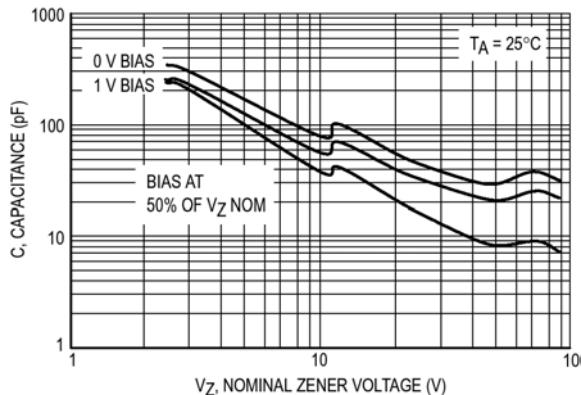
**Excel Semiconductor**



Type	Marking	$V_{Znom}$ <sup>1)</sup>	$I_{ZT}$ for		$r_{zIT}$	$r_{zIK}$ at	$I_{ZK}$	$I_R$ at		$V_R$	$TK_{VZ}$
			V	mA				$\mu A$	V		
MMBZ5221B	18A	2.4	20	<30	<1200	0.25	<100	1.0	<-0.085		
MMBZ5222B	18B	2.5	20	<30	<1250	0.25	<100	1.0	<-0.085		
MMBZ5223B	18C	2.7	20	<30	<1300	0.25	<75	1.0	<-0.080		
MMBZ5224B	18D	2.8	20	<30	<1400	0.25	<75	1.0	<-0.080		
MMBZ5225B	18E	3.0	20	<29	<1600	0.25	<50	1.0	<-0.075		
MMBZ5226B	8A	3.3	20	<28	<1600	0.25	<25	1.0	<-0.070		
MMBZ5227B	8B	3.6	20	<24	<1700	0.25	<15	1.0	<-0.065		
MMBZ5228B	8C	3.9	20	<23	<1900	0.25	<10	1.0	<-0.060		
MMBZ5229B	8D	4.3	20	<22	<2000	0.25	<5	1.0	<+0.055		
MMBZ5230B	8E	4.7	20	<19	<1900	0.25	<5	2.0	<+0.030		
MMBZ5231B	8F	5.1	20	<17	<1600	0.25	<5	2.0	<+0.030		
MMBZ5232B	8G	5.6	20	<11	<1600	0.25	<5	3.0	<+0.038		
MMBZ5233B	8H	6.0	20	<7	<1600	0.25	<5	3.5	<+0.038		
MMBZ5234B	8J	6.2	20	<7	<1000	0.25	<5	4.0	<+0.045		
MMBZ5235B	8K	6.8	20	<5	<750	0.25	<3	5.0	<+0.050		
MMBZ5236B	8L	7.5	20	<6	<500	0.25	<3	6.0	<+0.058		
MMBZ5237B	8M	8.2	20	<8	<500	0.25	<3	6.5	<+0.062		
MMBZ5238B	8N	8.7	20	<8	<600	0.25	<3	6.5	<+0.065		
MMBZ5239B	8P	9.1	20	<10	<600	0.25	<3	7.0	<+0.068		
MMBZ5240B	8Q	10	20	<17	<600	0.25	<3	8.0	<+0.075		
MMBZ5241B	8R	11	20	<22	<600	0.25	<2	8.4	<+0.076		
MMBZ5242B	8S	12	20	<30	<600	0.25	<1	9.1	<+0.077		
MMBZ5243B	8T	13	9.5	<13	<600	0.25	<0.5	9.9	<+0.079		
MMBZ5244B	8U	14	9.0	<15	<600	0.25	<0.1	10	<+0.082		
MMBZ5245B	8V	15	8.5	<16	<600	0.25	<0.1	11	<+0.082		
MMBZ5246B	8W	16	7.8	<17	<600	0.25	<0.1	12	<+0.083		
MMBZ5247B	8X	17	7.4	<19	<600	0.25	<0.1	13	<+0.084		
MMBZ5248B	8Y	18	7.0	<21	<600	0.25	<0.1	14	<+0.085		
MMBZ5249B	8Z	19	6.6	<23	<600	0.25	<0.1	15	<+0.086		
MMBZ5250B	81A	20	6.2	<25	<600	0.25	<0.1	16	<+0.086		
MMBZ5251B	81B	22	5.6	<29	<600	0.25	<0.1	17	<+0.087		
MMBZ5252B	81C	24	5.2	<33	<600	0.25	<0.1	18	<+0.088		
MMBZ5253B	81D	25	5.0	<35	<600	0.25	<0.1	19	<+0.089		
MMBZ5254B	81E	27	4.6	<41	<600	0.25	<0.1	21	<+0.090		
MMBZ5255B	81F	28	4.5	<44	<600	0.25	<0.1	21	<+0.091		
MMBZ5256B	81G	30	4.2	<49	<600	0.25	<0.1	23	<+0.091		
MMBZ5257B	81H	33	3.8	<58	<700	0.25	<0.1	25	<+0.092		
MMBZ5258B	81J	36	3.4	<70	<700	0.25	<0.1	27	<+0.093		
MMBZ5259B	81K	39	3.2	<80	<800	0.25	<0.1	30	<+0.094		
MMBZ5260B	18F	43	3.0	<93	<900	0.25	<0.1	33	<+0.095		
MMBZ5261B	81M	47	2.7	<105	<1000	0.25	<0.1	36	<+0.095		
MMBZ5262B	81N	51	2.5	<125	<1100	0.25	<0.1	39	<+0.096		
MMBZ5263B	81P	56	2.2	<150	<1300	0.25	<0.1	43	<+0.096		
MMBZ5264B	81Q	60	2.1	<170	<1400	0.25	<0.1	46	<+0.097		
MMBZ5265B	81R	62	2.0	<185	<1400	0.25	<0.1	47	<+0.097		
MMBZ5266B	81S	68	1.8	<230	<1600	0.25	<0.1	52	<+0.097		
MMBZ5267B	81T	75	1.7	<270	<1700	0.25	<0.1	58	<+0.098		

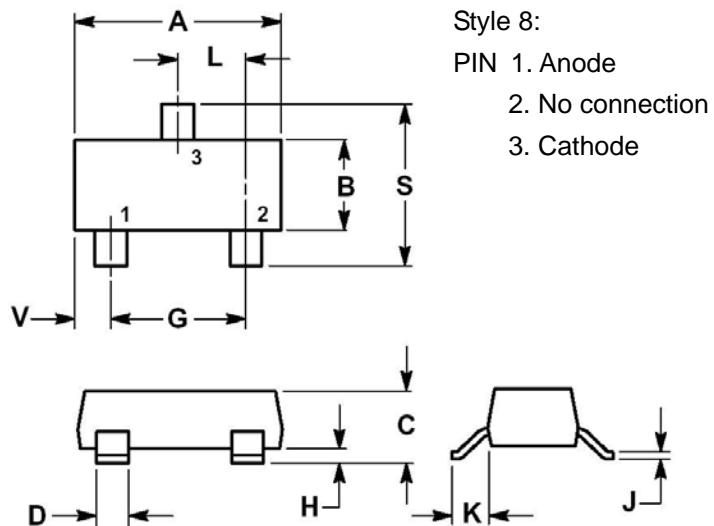
1) Based on DC-measurement at thermal equilibrium while maintaining the lead temperature( $T_L$ )at 30°C,  
9.5mm(3/8") from the diode body.

### Excel Semiconductor

**Characteristics ( $T_j=25^\circ\text{C}$  unless otherwise specified)****Figure 1. Zener voltage versus zener current****Figure 2. Typical forward voltage****Figure 3. Typical leakage current****Figure 4. Effect of zener voltage on zener impedance****Figure 5. Typical capacitance**

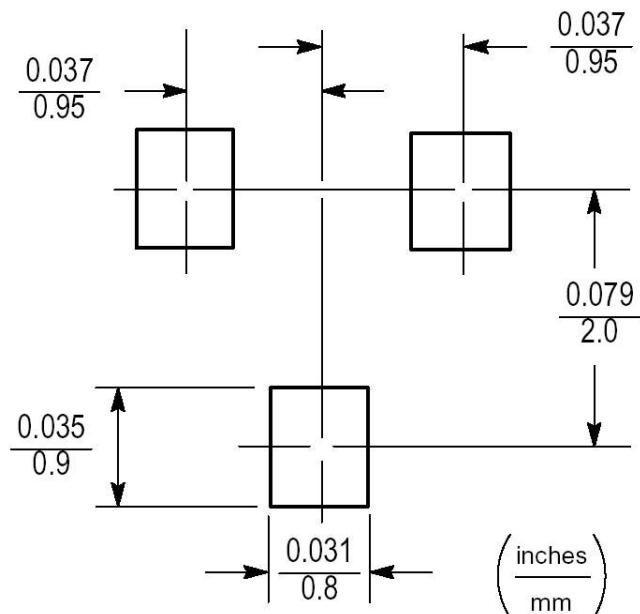


## Dimensions



Style 8:  
PIN 1. Anode  
2. No connection  
3. Cathode

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0180	0.0236	0.45	0.60
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.0984	2.10	2.50
V	0.0177	0.0236	0.45	0.60



SOT-23 Footprint

### Notes:

1. Dimensioning and tolerance per ANSI Y14.5M, 1982.
2. Controlling dimension: inch.
3. Maximum lead thickness includes lead finish thickness. Minimum lead thickness is the minimum thickness of base material.