



Micro Commercial Components



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MMBZ5221B
THRU
MMBZ5259B

Features

- Halogen free available upon request by adding suffix "-HF"
Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
Epoxy meets UL 94 V-0 flammability rating
Moisture Sensitivity Level 1
Wide Voltage Range Available
Small Outline Package For Space Savings
High Temp Soldering: 260°C for 10 Seconds At Terminals
Surface Mount Package

Maximum Ratings

- Operating Junction Temperature: -55°C to +150°C
Storage Temperature: -55°C to +150°C
Maximum Thermal Resistance; 357°C/W Junction To Ambient

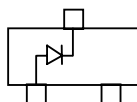
Maximum Ratings @ 25°C Unless Otherwise Specified

Table with 4 columns: Parameter, Symbol, Value, Unit. Rows include Zener Current (IF, 100 mA), Maximum Forward Voltage (VF, 1.2 V), Power Dissipation (Pd, 350 mWatt), and Peak Forward Surge Current (IFSM, 4.0 Amps).

NOTES:

- A. Mounted on FR4 PC board with our suggested solder pad layout.
B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

*Pin Configuration - Top View



350 mW
Zener Diode
2.4 to 39 Volts

SOT-23

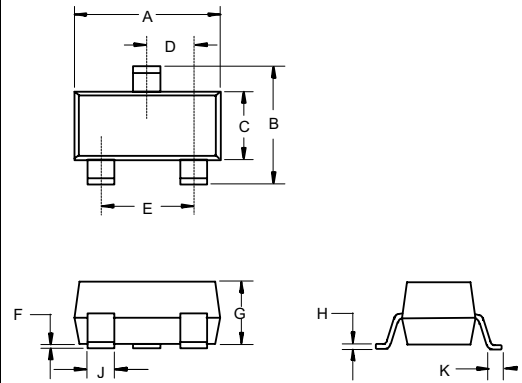
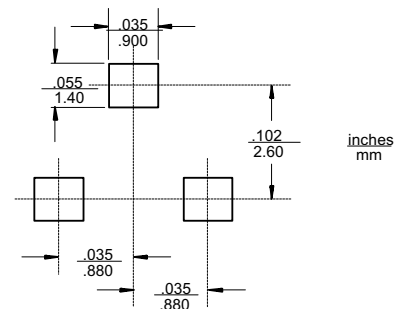


Table titled 'DIMENSIONS' with columns for DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. It lists dimensions A through K with their respective minimum and maximum values in inches and millimeters.

Suggested Solder Pad Layout



MMBZ5221B thru MMBZ5259B



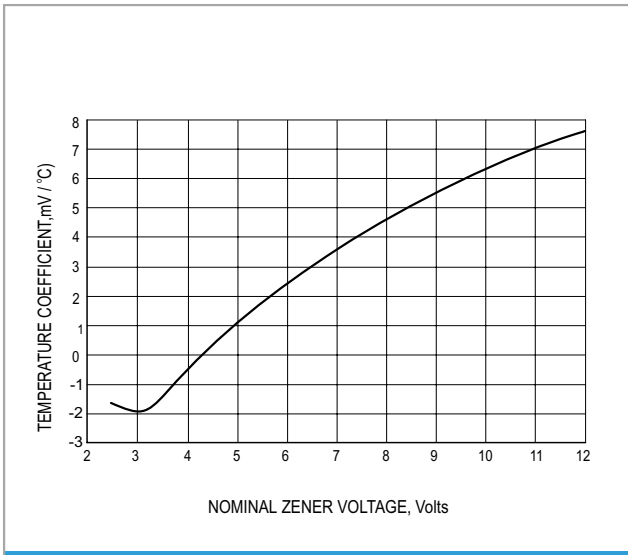
ELECTRICAL CHARACTERISTICS @25°C

| MCC PART NUMBER | MARKING | NOMINAL ZENER VOLTAGE $V_Z @ I_{ZT}$ | TEST CURRENT I_{ZT} | MAXIMUM ZENER IMPEDANCE 'B' SUFFIX ONLY | | MAXIMUM REVERSE LEAKAGE CURRENT | |
|-----------------|---------|--------------------------------------|-----------------------|---|----------------------------|---------------------------------|-------|
| | | | | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK} = 0.25mA$ | $I_R @ V_R$ | V_R |
| | | VOLTS | mA | OHMS | OHMS | μA | VOLTS |
| MMBZ5221B | KC1/C1 | 2.4 | 20 | 30 | 1200 | 100 | 1.0 |
| MMBZ5222B | KC2/C2 | 2.5 | 20 | 30 | 1250 | 100 | 1.0 |
| MMBZ5223B | KC3/C3 | 2.7 | 20 | 30 | 1300 | 75 | 1.0 |
| MMBZ5225B | KC5/C5 | 3.0 | 20 | 29 | 1600 | 50 | 1.0 |
| MMBZ5226B | KG1/D1 | 3.3 | 20 | 28 | 1600 | 25 | 1.0 |
| MMBZ5227B | KG2/D2 | 3.6 | 20 | 24 | 1700 | 15 | 1.0 |
| MMBZ5228B | KG3/D3 | 3.9 | 20 | 23 | 1900 | 10 | 1.0 |
| MMBZ5229B | KG4/D4 | 4.3 | 20 | 22 | 2000 | 5.0 | 1.0 |
| MMBZ5230B | KG5/D5 | 4.7 | 20 | 19 | 1900 | 5.0 | 2.0 |
| MMBZ5231B | KE1/E1 | 5.1 | 20 | 17 | 1600 | 5.0 | 2.0 |
| MMBZ5232B | KE2/E2 | 5.6 | 20 | 11 | 1600 | 5.0 | 3.0 |
| MMBZ5233B | KE3/E3 | 6.0 | 20 | 7.0 | 1600 | 5.0 | 3.5 |
| MMBZ5234B | KE4/E4 | 6.2 | 20 | 7.0 | 1000 | 5.0 | 4.0 |
| MMBZ5235B | KE5/E5 | 6.8 | 20 | 5.0 | 750 | 3.0 | 5.0 |
| MMBZ5236B | KF1/F1 | 7.5 | 20 | 6.0 | 500 | 3.0 | 6.0 |
| MMBZ5237B | KF2/F2 | 8.2 | 20 | 8.0 | 500 | 3.0 | 6.5 |
| MMBZ5238B | KF3/F3 | 8.7 | 20 | 8.0 | 600 | 3.0 | 6.5 |
| MMBZ5239B | KF4/F4 | 9.1 | 20 | 10 | 600 | 3.0 | 7.0 |
| MMBZ5240B | KF5/F5 | 10 | 20 | 17 | 600 | 3.0 | 8.0 |
| MMBZ5241B | KH1/H1 | 11 | 20 | 22 | 600 | 2.0 | 8.4 |
| MMBZ5242B | KH2/H2 | 12 | 20 | 30 | 600 | 1.0 | 9.1 |
| MMBZ5243B | KH3/H3 | 13 | 9.5 | 13 | 600 | 0.5 | 9.9 |
| MMBZ5244B | KH4/H4 | 14 | 9.0 | 15 | 600 | 0.1 | 10 |
| MMBZ5245B | KH5/H5 | 15 | 8.5 | 16 | 600 | 0.1 | 11 |
| MMBZ5246B | KJ1/J1 | 16 | 7.8 | 17 | 600 | 0.1 | 12 |
| MMBZ5248B | KJ3/J3 | 18 | 7.0 | 21 | 600 | 0.1 | 14 |
| MMBZ5250B | KJ5/J5 | 20 | 6.2 | 25 | 600 | 0.1 | 15 |
| MMBZ5251B | KK1/K1 | 22 | 5.6 | 29 | 600 | 0.1 | 17 |
| MMBZ5252B | KK2/K2 | 24 | 5.2 | 33 | 600 | 0.1 | 18 |
| MMBZ5254B | KK4/K4 | 27 | 5.0 | 41 | 600 | 0.1 | 21 |
| MMBZ5255B | KK5/K5 | 28 | 4.5 | 44 | 600 | 0.1 | 21 |
| MMBZ5256B | KM1/M1 | 30 | 4.2 | 49 | 600 | 0.1 | 23 |
| MMBZ5257B | KM2/M2 | 33 | 3.8 | 58 | 700 | 0.1 | 25 |
| MMBZ5258B | KM3/M3 | 36 | 3.4 | 70 | 700 | 0.1 | 27 |
| MMBZ5259B | KM4/M4 | 39 | 3.2 | 80 | 800 | 0.1 | 30 |

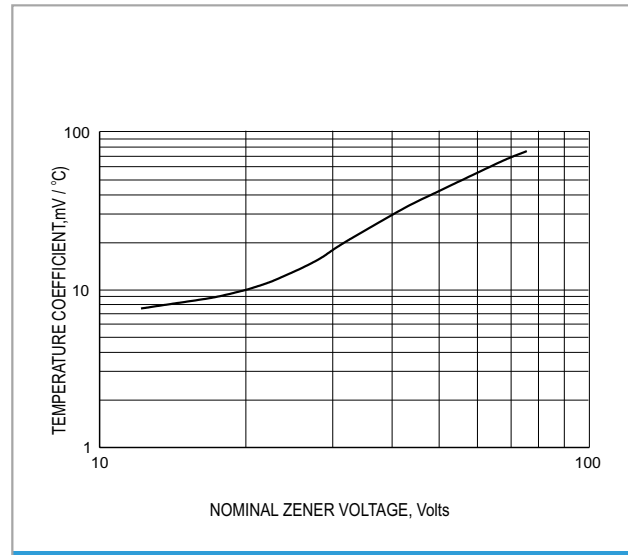
Note:

- Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.
- Specials Available Include:
 - Nominal zener voltages between the voltages shown and tighter voltage tolerances.
 - Matched sets.
- Zener Voltage (V_Z) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (T_L) at $30^\circ C$, from the diode body.
- Zener Impedance (Z_Z) 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_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} .
- Surge Current (I_R) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, I_{ZT} , per JEDEC registration; however, actual device capability is as described in Figure 5.

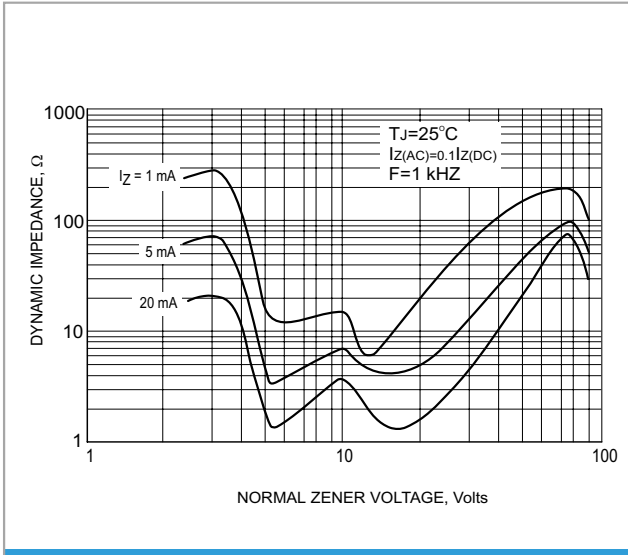
MMBZ5221B thru MMBZ5259B



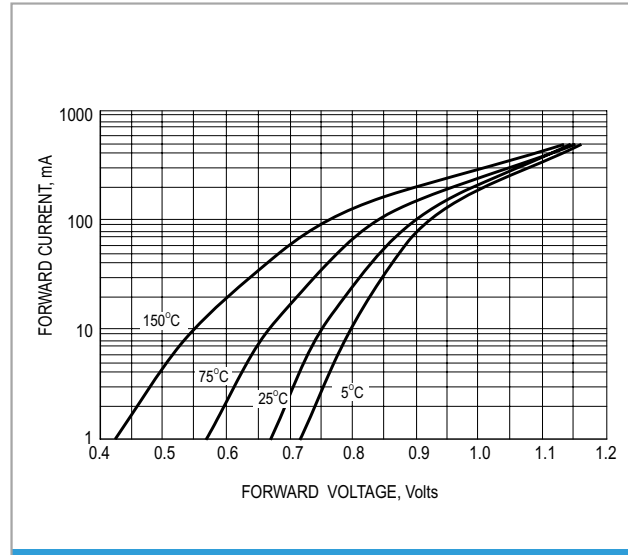
TYPICAL REVERSE CURRENT



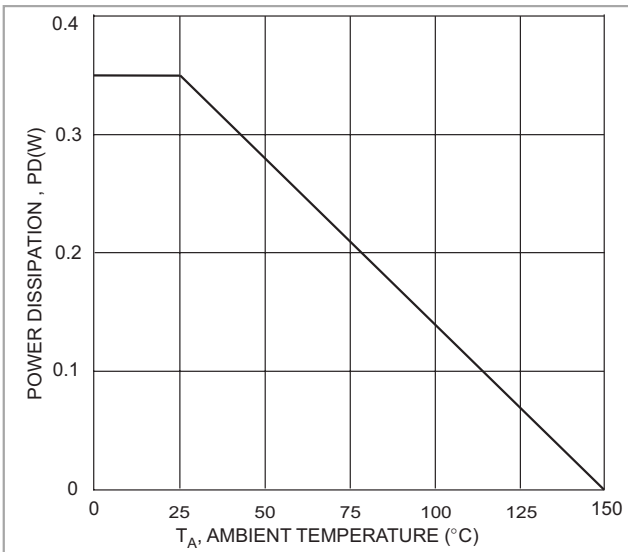
STEADY STATE POWER DERATING



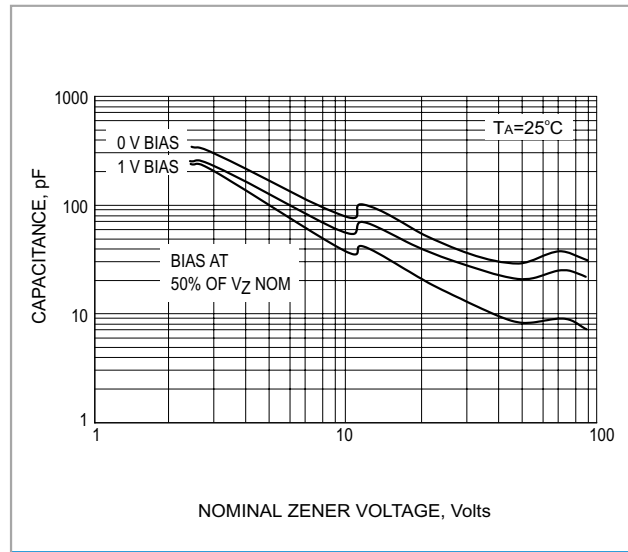
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



TYPICAL FORWARD VOLTAGE

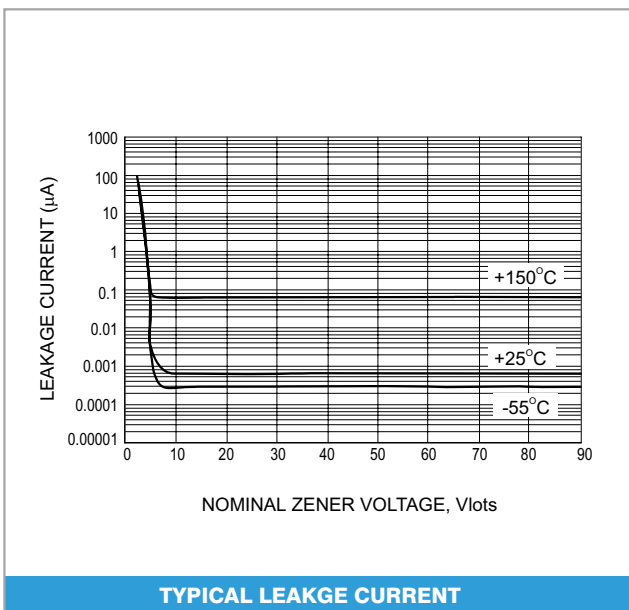
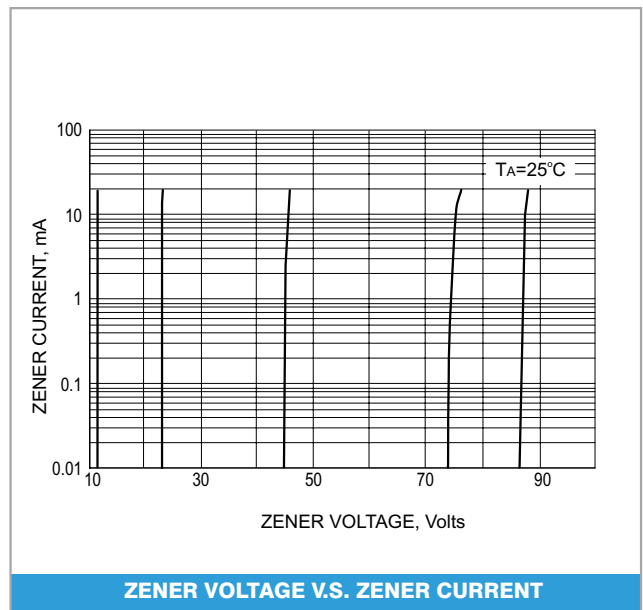
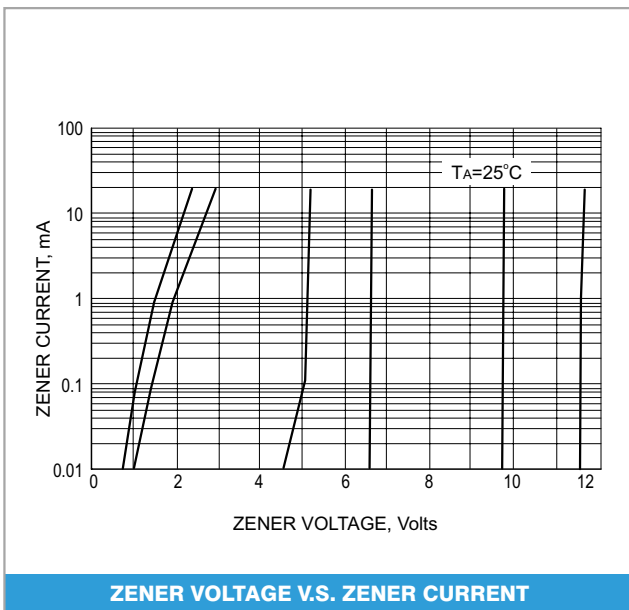


STEADY STATE POWER DERATING



TYPICAL CAPACITANCE

MMBZ5221B thru MMBZ5259B





TM

Micro Commercial Components

Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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