



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

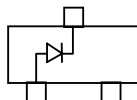
Maximum Ratings @ 25°C Unless Otherwise Specified

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

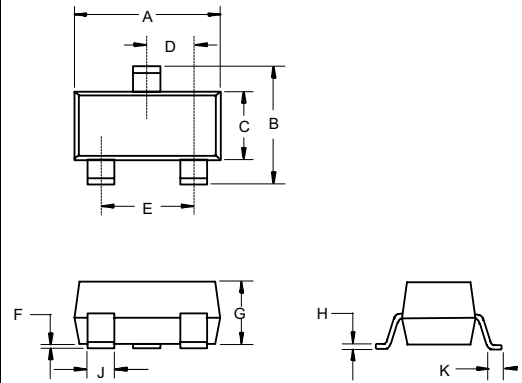
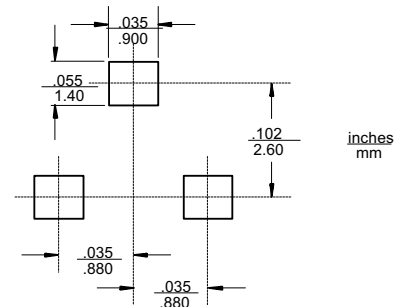


Table titled 'DIMENSIONS' with columns for DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. It lists dimensions A through K with their respective minimum and maximum values in both inches and millimeters.

Suggested Solder Pad Layout



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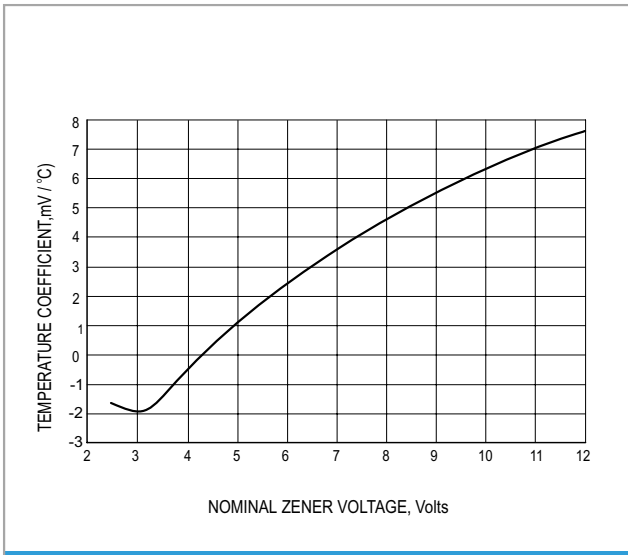
ELECTRICAL CHARACTERISTICS @25°C

| 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 |

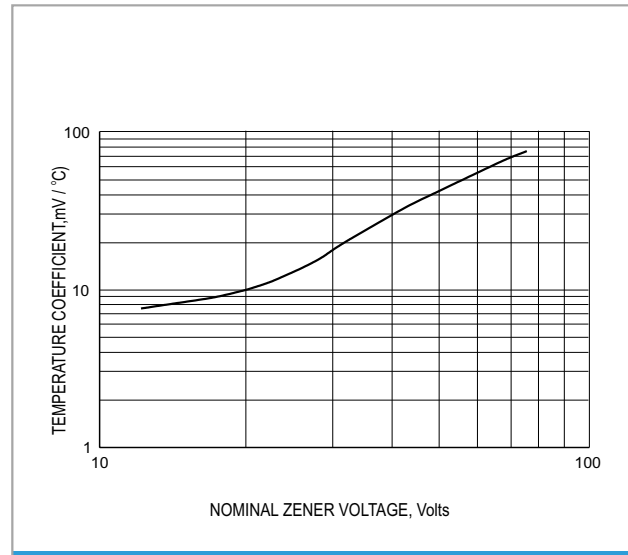
Note:

- 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°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.

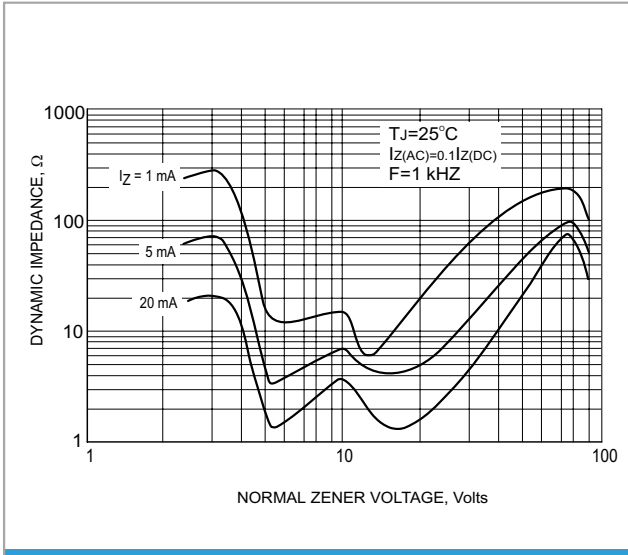
MMBZ5221B thru MMBZ5259B



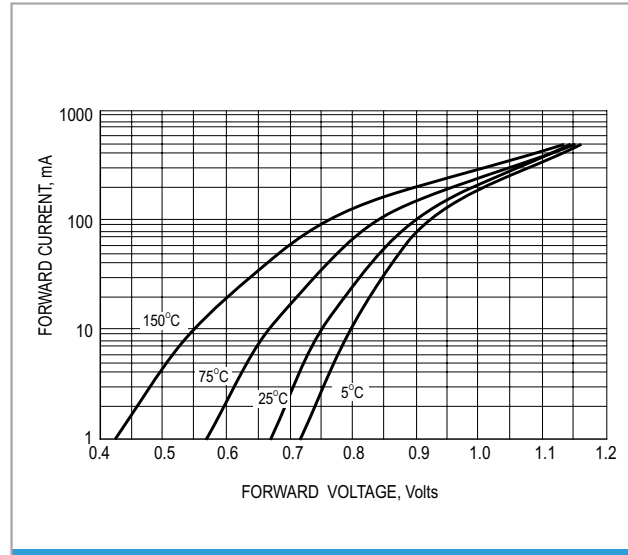
TYPICAL REVERSE CURRENT



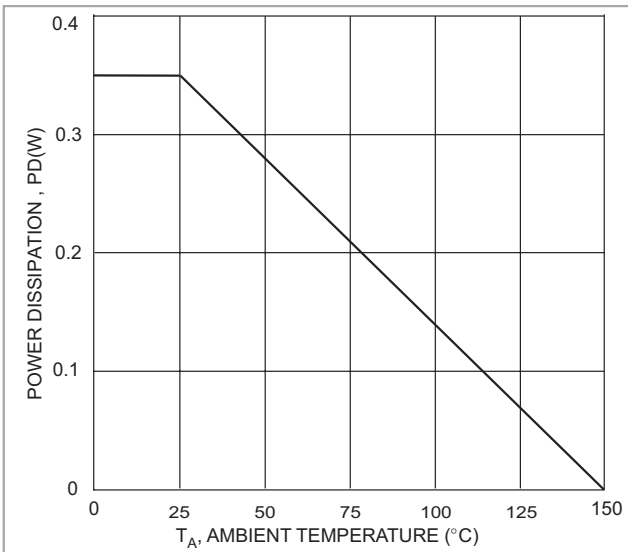
STEADY STATE POWER DERATING



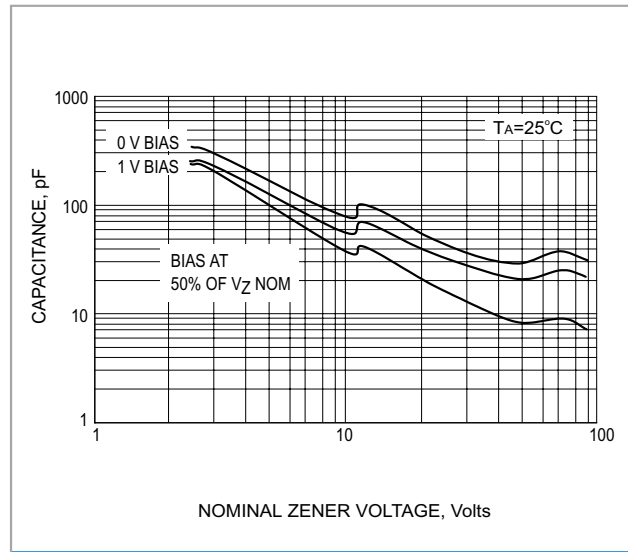
EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE



TYPICAL FORWARD VOLTAGE

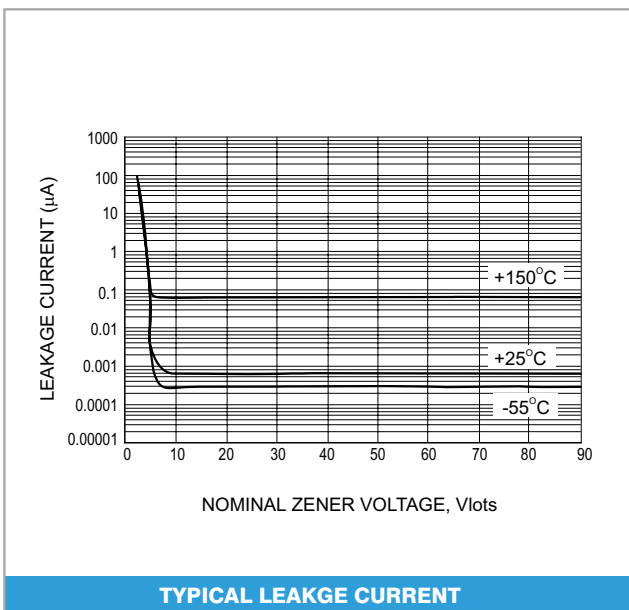
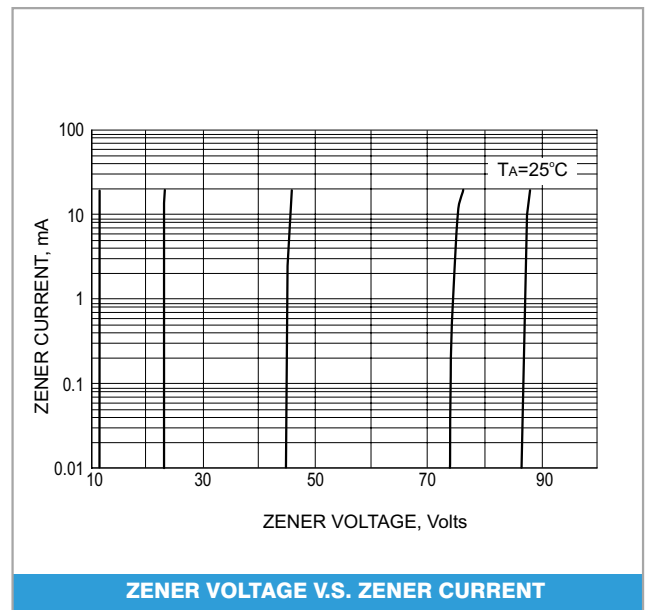


STEADY STATE POWER DERATING



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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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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JONHON

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