



Micro Commercial Components™



Micro Commercial Components
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SMAJ5913B THRU SMAJ5956B

Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Low Zener Impedance
- Low Regulation Factor
- V_z - tolerance: $\pm 5\%$
- For Surface Mount Applications
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

- Junction Temperature: 150°C
- Storage Temperature: -65°C to +175°C
- 1.5 Watt DC Power Dissipation ($T_L \leq 75^\circ\text{C}$)
- Thermal Resistance Junction to Lead: 50°C/W
- Thermal Resistance Junction to Ambient: 83°C/W
- Forward Voltage @ 200mA: 1.5 Volts

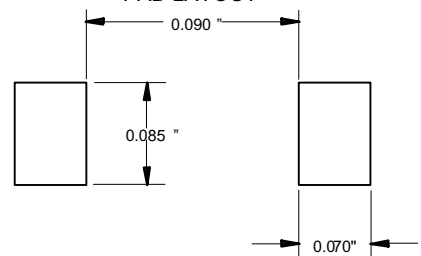
1.5 Watt Zener Diode 3.3 to 200 Volts

DO-214AC (SMA)(LEAD FRAME)



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|------|------|------|------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | .079 | .096 | 2.00 | 2.44 | |
| B | .050 | .064 | 1.27 | 1.63 | |
| C | .002 | .008 | .05 | .20 | |
| D | --- | .02 | --- | .51 | |
| E | .030 | .060 | .76 | 1.52 | |
| F | .065 | .091 | 1.65 | 2.32 | |
| G | .189 | .220 | 4.80 | 5.59 | |
| H | .157 | .181 | 4.00 | 4.60 | |
| J | .090 | .115 | 2.25 | 2.92 | |

SUGGESTED SOLDER PAD LAYOUT



Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

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ELECTRICAL CHARACTERISTICS @25°C

| MCC PART NUMBER | ZENER VOLTAGE VZ (1) | TEST CURRENT IZT | MAXIMUM DYNAMIC IMPEDANCE ZZT @IZT | KNEE CURRENT IZK | KNEE IMPEDANCE ZZK | MAXIMUM REVERSE CURRENT IR | REVERSE VOLTAGE VR | DEVICE MARKING |
|-----------------|----------------------|------------------|------------------------------------|------------------|--------------------|----------------------------|--------------------|----------------|
| | VOLTS | mA | OHMS | mA | OHMS | µA | VOLTS | |
| SMAJ5913B | 3.3 | 113.6 | 10 | 1 | 500 | 100 | 1 | 13B |
| SMAJ5914B | 3.6 | 104.2 | 9 | 1 | 500 | 75 | 1 | 14B |
| SMAJ5915B | 3.9 | 96.1 | 7.5 | 1 | 500 | 25 | 1 | 15B |
| SMAJ5916B | 4.3 | 87.2 | 6 | 1 | 500 | 5.0 | 1 | 16B |
| SMAJ5917B | 4.7 | 79.8 | 5 | 1 | 500 | 5.0 | 1.5 | 17B |
| SMAJ5918B | 5.1 | 73.5 | 4 | 1 | 350 | 5.0 | 2 | 18B |
| SMAJ5919B | 5.6 | 66.9 | 2 | 1 | 250 | 5.0 | 3 | 19B |
| SMAJ5920B | 6.2 | 60.5 | 2 | 1 | 200 | 5.0 | 4 | 20B |
| SMAJ5921B | 6.8 | 55.1 | 2.5 | 1 | 200 | 5.0 | 5.2 | 21B |
| SMAJ5922B | 7.5 | 50 | 3 | 0.5 | 400 | 5.0 | 6 | 22B |
| SMAJ5923B | 8.2 | 45.7 | 3.5 | 0.5 | 400 | 5.0 | 6.5 | 23B |
| SMAJ5924B | 9.1 | 41.2 | 4 | 0.25 | 500 | 5.0 | 7 | 24B |
| SMAJ5925B | 10 | 37.5 | 4.5 | 0.25 | 500 | 5.0 | 8 | 25B |
| SMAJ5926B | 11 | 34.1 | 5.5 | 0.25 | 550 | 1.0 | 8.4 | 26B |
| SMAJ5927B | 12 | 31.2 | 6.5 | 0.25 | 550 | 1.0 | 9.1 | 27B |
| SMAJ5928B | 13 | 28.8 | 7 | 0.25 | 550 | 1.0 | 9.9 | 28B |
| SMAJ5929B | 15 | 25 | 9 | 0.25 | 600 | 1.0 | 11.4 | 29B |
| SMAJ5930B | 16 | 23.4 | 10 | 0.25 | 600 | 1.0 | 12.2 | 30B |
| SMAJ5931B | 18 | 20.8 | 12 | 0.25 | 650 | 1.0 | 13.7 | 31B |
| SMAJ5932B | 20 | 18.7 | 14 | 0.25 | 650 | 1.0 | 15.2 | 32B |
| SMAJ5933B | 22 | 17 | 17.5 | 0.25 | 650 | 1.0 | 16.7 | 33B |
| SMAJ5934B | 24 | 15.6 | 19 | 0.25 | 700 | 1.0 | 18.2 | 34B |
| SMAJ5935B | 27 | 13.9 | 23 | 0.25 | 700 | 1.0 | 20.6 | 35B |
| SMAJ5936B | 30 | 12.5 | 28 | 0.25 | 750 | 1.0 | 22.8 | 36B |
| SMAJ5937B | 33 | 11.4 | 33 | 0.25 | 800 | 1.0 | 25.1 | 37B |
| SMAJ5938B | 36 | 10.4 | 38 | 0.25 | 850 | 1.0 | 27.4 | 38B |
| SMAJ5939B | 39 | 9.6 | 45 | 0.25 | 900 | 1.0 | 29.7 | 39B |
| SMAJ5940B | 43 | 8.7 | 53 | 0.25 | 950 | 1.0 | 32.7 | 40B |
| SMAJ5941B | 47 | 8 | 67 | 0.25 | 1000 | 1.0 | 35.8 | 41B |
| SMAJ5942B | 51 | 7.3 | 70 | 0.25 | 1100 | 1.0 | 38.8 | 42B |
| SMAJ5943B | 56 | 6.7 | 86 | 0.25 | 1300 | 1.0 | 42.6 | 43B |
| SMAJ5944B | 62 | 6 | 100 | 0.25 | 1500 | 1.0 | 47.1 | 44B |
| SMAJ5945B | 68 | 5.5 | 120 | 0.25 | 1700 | 1.0 | 51.7 | 45B |
| SMAJ5946B | 75 | 5 | 140 | 0.25 | 2000 | 1.0 | 56 | 46B |
| SMAJ5947B | 82 | 4.6 | 160 | 0.25 | 2500 | 1.0 | 62.2 | 47B |
| SMAJ5948B | 91 | 4.1 | 200 | 0.25 | 3000 | 1.0 | 69.2 | 48B |
| SMAJ5949B | 100 | 3.7 | 250 | 0.25 | 3100 | 1.0 | 76 | 49B |
| SMAJ5950B | 110 | 3.4 | 300 | 0.25 | 4000 | 1.0 | 83.6 | 50B |
| SMAJ5951B | 120 | 3.1 | 380 | 0.25 | 4500 | 1.0 | 91.2 | 51B |
| SMAJ5952B | 130 | 2.9 | 450 | 0.25 | 5000 | 1.0 | 98.8 | 52B |
| SMAJ5953B | 150 | 2.5 | 600 | 0.25 | 6000 | 1.0 | 114 | 53B |
| SMAJ5954B | 160 | 2.3 | 700 | 0.25 | 6500 | 1.0 | 121.6 | 54B |
| SMAJ5955B | 180 | 2.1 | 900 | 0.25 | 7000 | 1.0 | 136.8 | 55B |
| SMAJ5956B | 200 | 1.9 | 1200 | 0.25 | 8000 | 1.0 | 152 | 56B |

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.

Characteristics ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter |
|----------|------------------------------------|
| V_Z | Reverse zener voltage @ I_{ZT} |
| I_{ZT} | Reverse current |
| Z_{ZT} | Maximum zener impedance @ I_{ZT} |
| I_{ZK} | Reverse current |
| Z_{ZK} | Maximum zener impedance @ I_{ZK} |
| I_R | Reverse leakage current @ V_R |
| V_R | Breakdown voltage |
| I_F | Forward current |
| V_F | Forward voltage @ I_F |

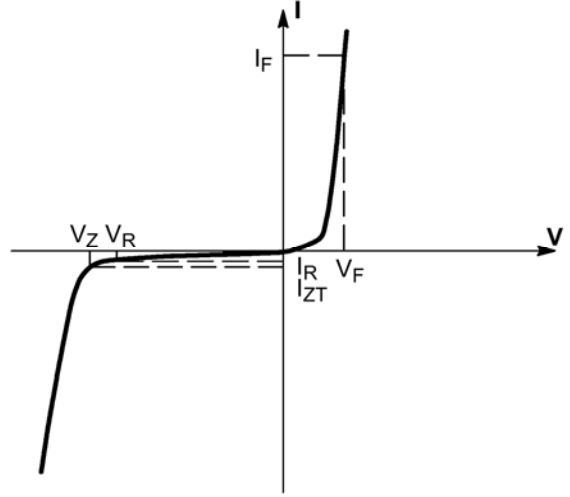


Figure 1. Zener voltage regulator



Figure 2. Steady state power derating

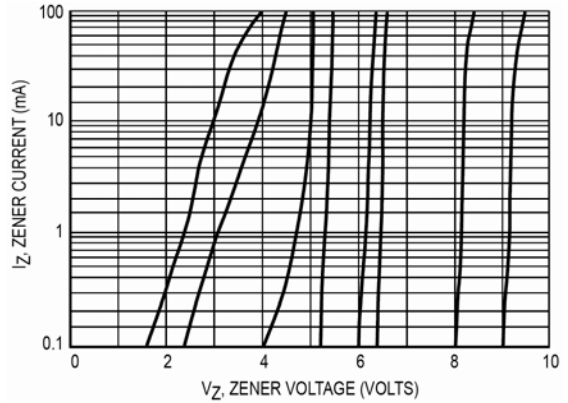


Figure 3. V_Z - 3.3 thru 10 volts



Figure 4. Zener voltage - 3.3 to 12 volts



Figure 5. Zener voltage - 14 to 43 volts



Figure 6. Effect of zener voltage



Figure 7. Capacitance curve



Figure 8. Typical pulse rating curve

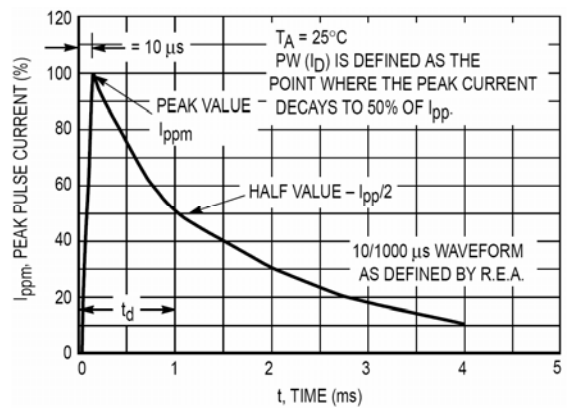


Figure 9. Pulse waveform

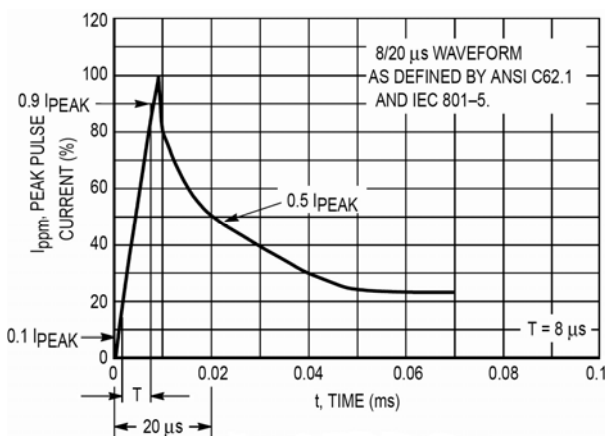


Figure 10. Pulse waveform



Micro Commercial Components TM

Ordering Information :

| Device | Packing |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 7.5Kpcs/Reel |

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

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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