



1SMA5914-AU ~ 1SMA5945-AU Series

SILICON ZENER DIODE

Voltage

3.6~68 V

Power

1.5 W

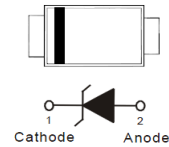
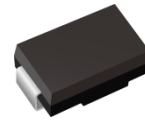
Features

- Silicon planar Zener diode
- Low profile surface-mount package
- Low leakage current
- Excellent stability
- High temperature soldering: 260 °C/10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

Mechanical Data

- Case: SMA, plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.0024 ounces, 0.068 grams

SMA



Maximum Ratings and Thermal Characteristics (T_A = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | LIMIT | UNITS |
|---|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation on T _L = 75 °C Derate above 75 °C | P _D ⁽¹⁾ | 1.5 | W |
| Typical Thermal Resistance | R _{θJA} ⁽²⁾ | 150 | °C/W |
| Operating Junction and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |



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Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number | Nominal Zener Voltage | | | | Nominal Zener Impedance | | | | Max. Reverse Leakage Current | | Marking Code |
|-------------|-----------------------|--------|--------|-------|-------------------------|-------|-------------------|------|------------------------------|------|--------------|
| | $V_Z @ I_{ZT}$ | | | | $Z_{ZT} @ I_{ZT}$ | | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | | |
| | Nom. V | Min. V | Max. V | mA | Ω | mA | Ω | mA | μA | V | |
| 1SMA5914-AU | 3.6 | 3.42 | 3.78 | 104.2 | 9 | 104.2 | 500 | 1 | 75 | 1 | 914A |
| 1SMA5915-AU | 3.9 | 3.71 | 4.10 | 96.1 | 8 | 96.1 | 500 | 1 | 25 | 1 | 915A |
| 1SMA5916-AU | 4.3 | 4.09 | 4.52 | 87.2 | 6 | 87.2 | 500 | 1 | 5 | 1 | 916A |
| 1SMA5917-AU | 4.7 | 4.47 | 4.94 | 79.8 | 5 | 79.8 | 500 | 1 | 5 | 1.5 | 917A |
| 1SMA5918-AU | 5.1 | 4.85 | 5.36 | 73.5 | 4 | 73.5 | 350 | 1 | 5 | 2 | 918A |
| 1SMA5919-AU | 5.6 | 5.32 | 5.88 | 66.9 | 2 | 66.9 | 250 | 1 | 5 | 3 | 919A |
| 1SMA5920-AU | 6.2 | 5.89 | 6.51 | 60.5 | 2 | 60.5 | 200 | 1 | 5 | 4 | 920A |
| 1SMA5921-AU | 6.8 | 6.46 | 7.14 | 55.1 | 3 | 55.1 | 200 | 1 | 5 | 5.2 | 921A |
| 1SMA5922-AU | 7.5 | 7.13 | 7.88 | 50 | 3 | 50 | 400 | 0.5 | 5 | 6 | 922A |
| 1SMA5923-AU | 8.2 | 7.79 | 8.61 | 45.7 | 4 | 45.7 | 400 | 0.5 | 5 | 6.5 | 923A |
| 1SMA5924-AU | 9.1 | 8.65 | 9.56 | 41.2 | 4 | 41.2 | 500 | 0.5 | 5 | 7 | 924A |
| 1SMA5925-AU | 10 | 9.5 | 10.5 | 37.5 | 5 | 37.5 | 500 | 0.25 | 5 | 8 | 925A |
| 1SMA5926-AU | 11 | 10.45 | 11.55 | 34.1 | 6 | 34.1 | 550 | 0.25 | 1 | 8.4 | 926A |
| 1SMA5927-AU | 12 | 11.4 | 12.6 | 31.2 | 7 | 31.2 | 550 | 0.25 | 1 | 9.1 | 927A |
| 1SMA5928-AU | 13 | 12.35 | 13.65 | 28.8 | 7 | 28.8 | 550 | 0.25 | 1 | 9.9 | 928A |
| 1SMA5929-AU | 15 | 14.25 | 15.75 | 25 | 9 | 25 | 600 | 0.25 | 1 | 11.4 | 929A |
| 1SMA5930-AU | 16 | 15.2 | 16.8 | 23.4 | 10 | 23.4 | 600 | 0.25 | 1 | 12.2 | 930A |
| 1SMA5931-AU | 18 | 17.1 | 18.9 | 20.8 | 12 | 20.8 | 650 | 0.25 | 1 | 13.7 | 931A |
| 1SMA5932-AU | 20 | 19 | 21 | 18.7 | 14 | 18.7 | 650 | 0.25 | 1 | 15.2 | 932A |
| 1SMA5933-AU | 22 | 20.9 | 23.1 | 17 | 18 | 17 | 650 | 0.25 | 1 | 16.7 | 933A |
| 1SMA5934-AU | 24 | 22.8 | 25.2 | 15.6 | 19 | 15.6 | 700 | 0.25 | 1 | 18.2 | 934A |
| 1SMA5935-AU | 27 | 25.65 | 28.35 | 13.9 | 23 | 13.9 | 700 | 0.25 | 1 | 20.6 | 935A |
| 1SMA5936-AU | 30 | 28.5 | 31.5 | 12.5 | 26 | 12.5 | 750 | 0.25 | 1 | 22.8 | 936A |
| 1SMA5937-AU | 33 | 31.35 | 34.65 | 11.4 | 33 | 11.4 | 800 | 0.25 | 1 | 25.1 | 937A |
| 1SMA5938-AU | 36 | 34.2 | 37.8 | 10.4 | 38 | 10.4 | 850 | 0.25 | 1 | 27.4 | 938A |
| 1SMA5939-AU | 39 | 37.05 | 40.95 | 9.6 | 45 | 9.6 | 900 | 0.25 | 1 | 29.7 | 939A |
| 1SMA5940-AU | 43 | 40.85 | 45.15 | 8.7 | 53 | 8.7 | 950 | 0.25 | 1 | 32.7 | 940A |
| 1SMA5941-AU | 47 | 44.65 | 49.35 | 8 | 67 | 8 | 1000 | 0.25 | 1 | 35.8 | 941A |
| 1SMA5942-AU | 51 | 48.45 | 53.55 | 7.3 | 70 | 7.3 | 1100 | 0.25 | 1 | 38.8 | 942A |
| 1SMA5943-AU | 56 | 53.2 | 58.8 | 6.7 | 86 | 6.7 | 1300 | 0.25 | 1 | 42.6 | 943A |



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Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number | Nominal Zener Voltage | | | | Nominal Zener Impedance | | | | Max. Reverse Leakage Current | | Marking Code |
|-------------|-----------------------|--------|--------|-----|-------------------------|-----|-------------------|------|------------------------------|------|--------------|
| | $V_Z @ I_{ZT}$ | | | | $Z_{ZT} @ I_{ZT}$ | | $Z_{ZK} @ I_{ZK}$ | | $I_R @ V_R$ | | |
| | Nom. V | Min. V | Max. V | mA | Ω | mA | Ω | mA | uA | V | |
| 1SMA5944-AU | 62 | 58.9 | 65.1 | 6 | 100 | 6 | 1500 | 0.25 | 1 | 47.1 | 944A |
| 1SMA5945-AU | 68 | 64.6 | 71.4 | 5.5 | 120 | 5.5 | 1700 | 0.25 | 1 | 51.7 | 945A |

NOTES:

1. Mounted on a FR-4 PCB, single-sided copper, with 100cm² copper pad area.
2. Mounted on a FR-4 PCB, single-sided copper, mini pad .



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TYPICAL CHARACTERISTIC CURVES

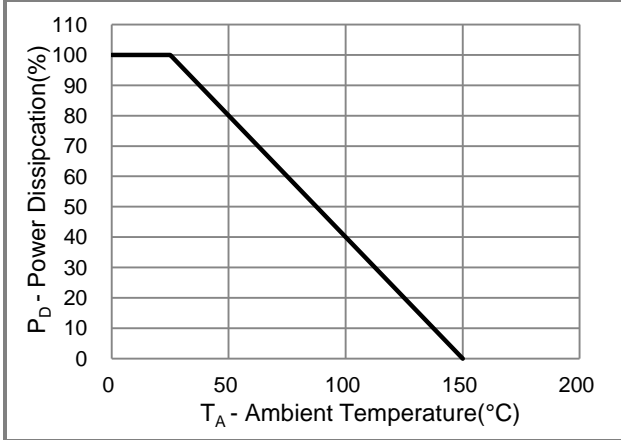


Fig.1 Power Derating Curve

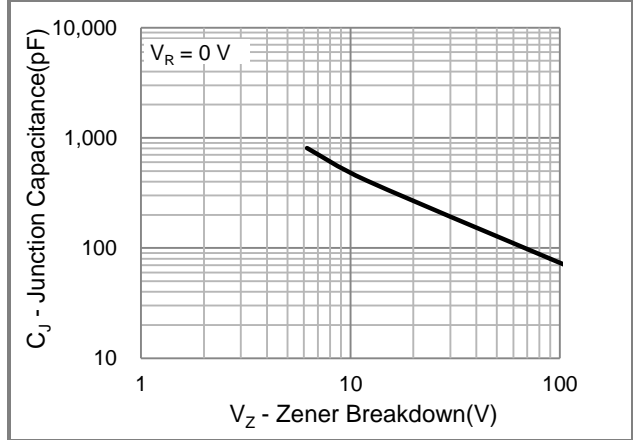


Fig.2 Typical Junction Capacitance

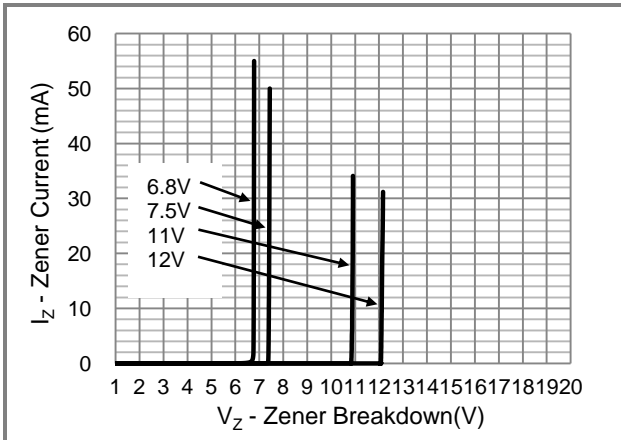


Fig.3 Typical Zener Breakdown

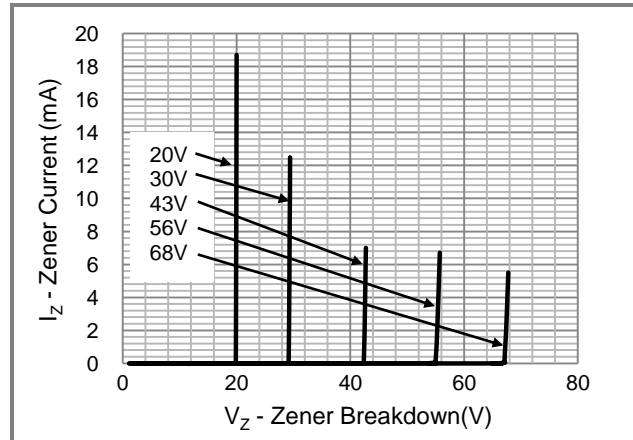


Fig.4 Typical Zener Breakdown

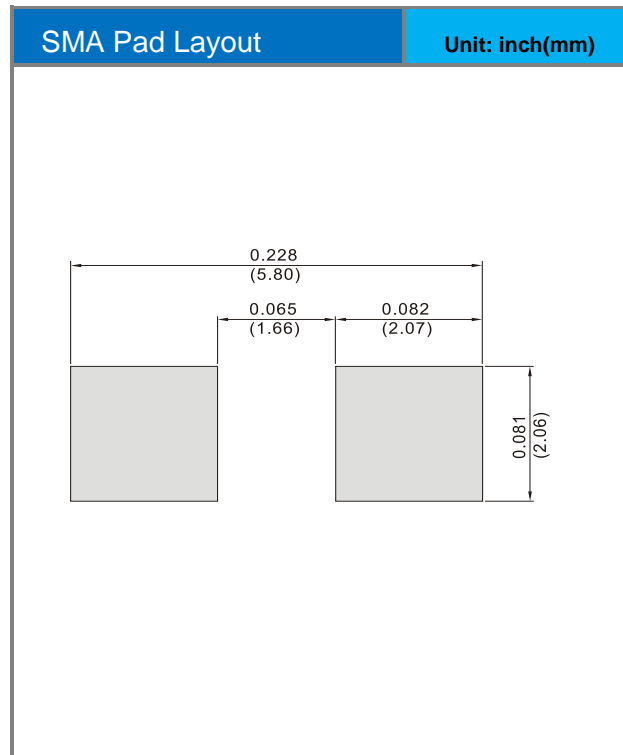
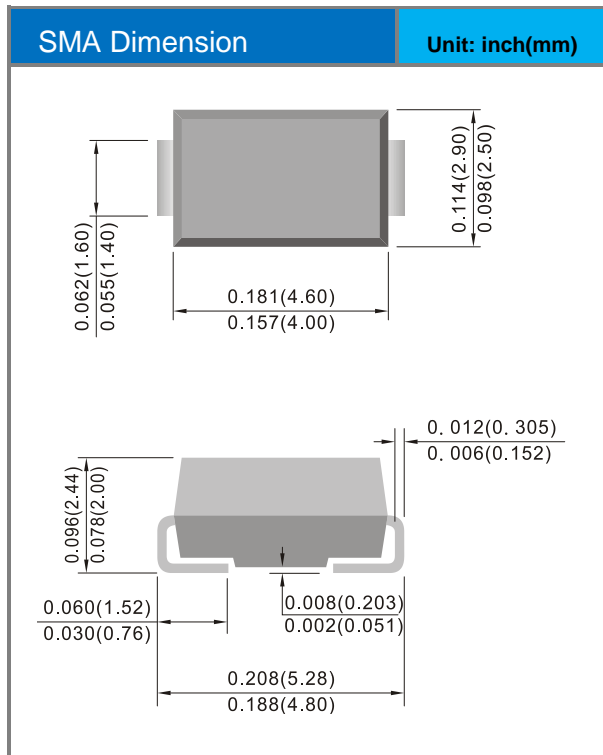


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Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type | Marking | Version |
|----------------------|--------------|---------------------|-----------|--------------|
| 1SMA59xx-AU_R2_000A1 | SMA | 7.5K pcs / 13" reel | See Table | Halogen free |

Packaging Information & Mounting Pad Layout





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