# Surface Mount Zener Diodes

DO-214AC (SMA)

## FEATURES

- Plastic package has underwriters laboratory flammability classification 94 V-0
- For surface mounted applications
- Low Zener impedance
- Low regulation factor
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Standard voltage tolerance is ± 10 %, suffix A ± 5 %
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb e3 RoHS COMPLIANT

## MECHANICAL DATA

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

| PRIMARY CHARACTERISTICS | | |
|---|---|---|
| PARAMETER | VALUE | UNIT |
| $V_Z$ range nom. | 8.2 to 100 | V |
| Test current $I_{ZT}$ | 2.5 to 31 | mA |
| $V_Z$ specification | Pulse current | |
| Int. construction | Single | |

| ORDERING INFORMATION | | | |
|---|---|---|---|
| DEVICE NAME | ORDERING CODE | TAPED UNITS PER REEL | MINIMUM ORDER QUANTITY |
| SML4738 to SML4764A | SML4738-E3/5A<br>SML4738HE3/5A | 7500 (12 mm tape on 13" plastic reel) | 7500 |
| SML4738 to SML4764A | SML4738-E3/61<br>SML4738HE3/61 | 1800 (12 mm tape on 7" plastic reel) | 1800 |

| PACKAGE | | | | |
|---|---|---|---|---|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
| DO-214AC | 64 mg | UL 94 V-0 | MSL level 1 (according J-STD-020) | 260 °C/10 s at terminals |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | |
|---|---|---|---|---|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Power dissipation | $T_L$ = 75 °C | $P_{tot}$ | 1000 | mW |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |

**ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified)

| PART NUMBER | MARKING CODE | ZENER VOLTAGE RANGE | TEST CURRENT | | REVERSE CURRENT | | DYNAMIC RESISTANCE | | SURGE CURRENT (1) |
|---|---|---|---|---|---|---|---|---|---|
| | | $V_Z$ at $I_{ZT1}$ | $I_{ZT1}$ | $I_{ZT2}$ | $I_R$ at $V_R$ | | $Z_Z$ at $I_{ZT1}$ | $Z_{ZK}$ at $I_{ZT2}$ | $I_{RM}$ |
| | | V | mA | | µA | V | Ω | | $mA_{pk}$ |
| | | NOM. | | | MAX. | | MAX. | MAX. | MAX. |
| SML4738 | 8P2 | 8.2 | 31 | 0.5 | 10 | 6 | 4.5 | 700 | 550 |
| SML4739 | 9P1 | 9.1 | 28 | 0.5 | 10 | 7 | 5 | 700 | 500 |
| SML4740 | 10 | 10 | 25 | 0.25 | 10 | 7.6 | 7 | 700 | 454 |
| SML4741 | 11 | 11 | 23 | 0.25 | 5 | 8.4 | 8 | 700 | 414 |
| SML4742 | 12 | 12 | 21 | 0.25 | 5 | 9.1 | 9 | 700 | 380 |
| SML4743 | 13 | 13 | 19 | 0.25 | 5 | 9.9 | 10 | 700 | 344 |
| SML4744 | 15 | 15 | 17 | 0.25 | 5 | 11.4 | 14 | 700 | 305 |
| SML4745 | 16 | 16 | 15.5 | 0.25 | 5 | 12.2 | 16 | 700 | 285 |
| SML4746 | 18 | 18 | 14 | 0.25 | 5 | 13.7 | 20 | 750 | 250 |
| SML4747 | 20 | 20 | 12.5 | 0.25 | 5 | 15.2 | 22 | 750 | 225 |
| SML4748 | 22 | 22 | 11.5 | 0.25 | 5 | 16.7 | 23 | 750 | 205 |
| SML4749 | 24 | 24 | 10.5 | 0.25 | 5 | 18.2 | 25 | 750 | 190 |
| SML4750 | 27 | 27 | 9.5 | 0.25 | 5 | 20.6 | 35 | 750 | 170 |
| SML4751 | 30 | 30 | 8.5 | 0.25 | 5 | 22.8 | 40 | 1000 | 150 |
| SML4752 | 33 | 33 | 7.5 | 0.25 | 5 | 25.1 | 45 | 1000 | 135 |
| SML4753 | 36 | 36 | 7 | 0.25 | 5 | 27.4 | 50 | 1000 | 125 |
| SML4754 | 39 | 39 | 6.5 | 0.25 | 5 | 29.7 | 60 | 1000 | 115 |
| SML4755 | 43 | 43 | 6 | 0.25 | 5 | 32.7 | 70 | 1500 | 110 |
| SML4756 | 47 | 47 | 5.5 | 0.25 | 5 | 35.8 | 80 | 1500 | 95 |
| SML4757 | 51 | 51 | 5 | 0.25 | 5 | 38.8 | 95 | 1500 | 90 |
| SML4758 | 56 | 56 | 4.5 | 0.25 | 5 | 42.6 | 110 | 2000 | 80 |
| SML4759 | 62 | 62 | 4 | 0.25 | 5 | 47.1 | 125 | 2000 | 70 |
| SML4760 | 68 | 68 | 3.7 | 0.25 | 5 | 51.7 | 150 | 2000 | 65 |
| SML4761 | 75 | 75 | 3.3 | 0.25 | 5 | 56 | 175 | 2000 | 60 |
| SML4762 | 82 | 82 | 3 | 0.25 | 5 | 62.2 | 200 | 3000 | 55 |
| SML4763 | 91 | 91 | 2.8 | 0.25 | 5 | 69.2 | 250 | 3000 | 50 |
| SML4764 | 100 | 100 | 2.5 | 0.25 | 5 | 76 | 350 | 3000 | 45 |

**Note**

(1) Surge current is a non-repetitive, 8.3 ms pulse width square wave or equivalent sine-wave superimposed on $I_{ZT}$ per JEDEC® method

**BASIC CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified)

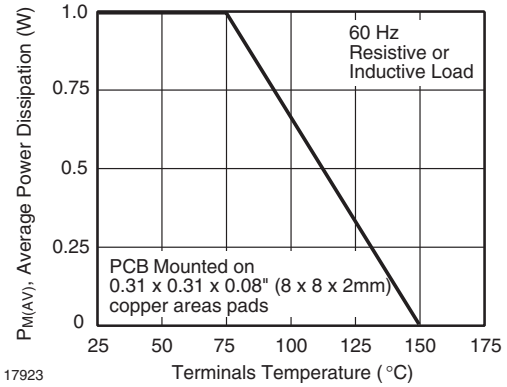



Fig. 1 - Maximum Continuous Power Dissipation

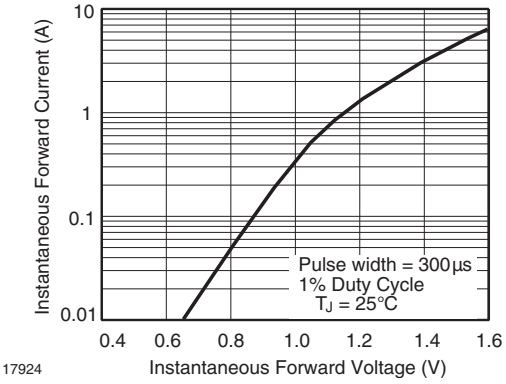



Fig. 4 - Typical Instantaneous Forward Characteristics for SML4763

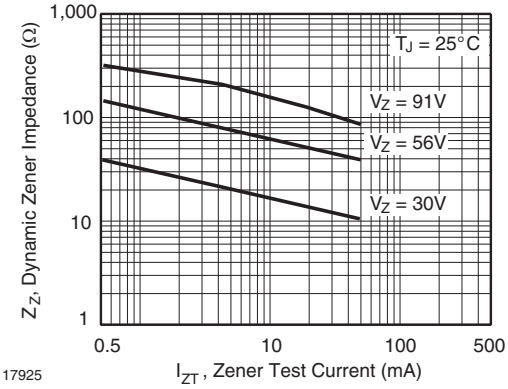



Fig. 2 - Typical Zener Impedance

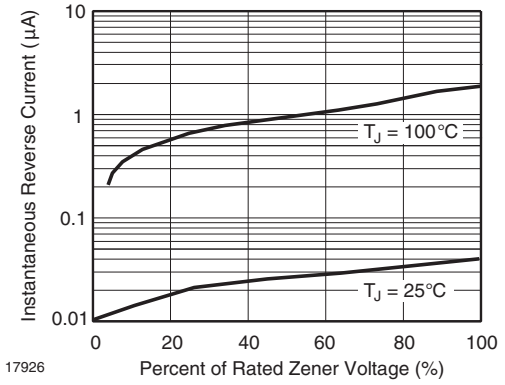



Fig. 5 - Typical Reverse Characteristics

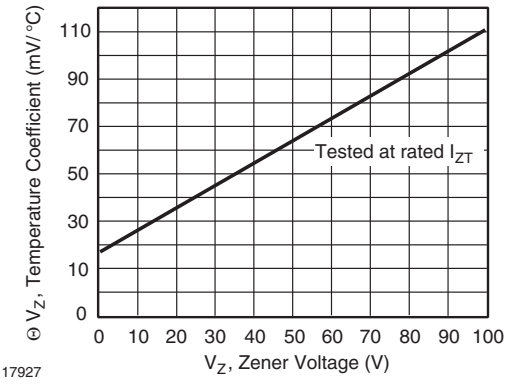
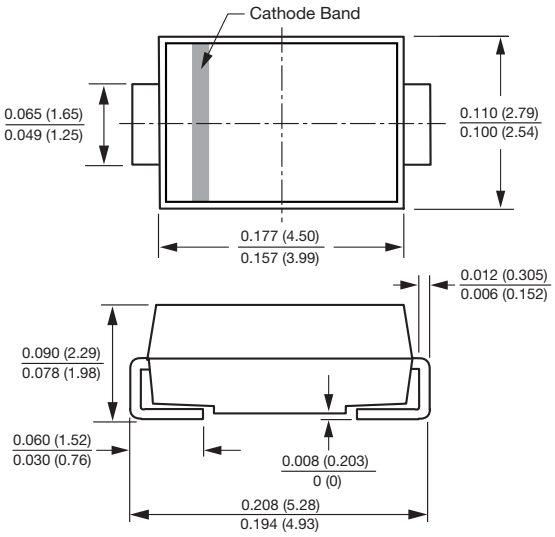


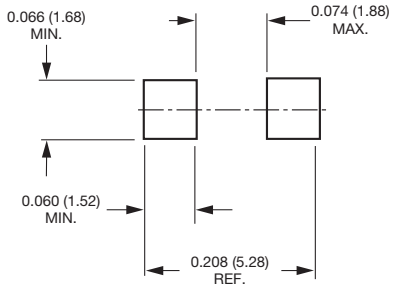

Fig. 3 - Typical Temperature Coefficients

**PACKAGE DIMENSIONS** in inches (millimeters): **DO-214AC**

**DO-214AC (SMA)**




**Mounting Pad Layout**



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