



## 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](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

| PRIMARY CHARACTERISTICS      |               |      |
|------------------------------|---------------|------|
| PARAMETER                    | VALUE         | UNIT |
| V <sub>Z</sub> range nom.    | 3.3 to 100    | V    |
| Test current I <sub>ZT</sub> | 2.5 to 76     | mA   |
| V <sub>Z</sub> specification | Pulse current |      |
| Int. construction            | Single        |      |

### MECHANICAL DATA

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

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

| ORDERING INFORMATION |                                |                                       |                        |
|----------------------|--------------------------------|---------------------------------------|------------------------|
| DEVICE NAME          | ORDERING CODE                  | TAPED UNITS PER REEL                  | MINIMUM ORDER QUANTITY |
| SML4728 to SML4764A  | SML4728-E3/5A<br>SML4728HE3/5A | 7500 (12 mm tape on 13" plastic reel) |                        |
| SML4728 to SML4764A  | SML4728-E3/61<br>SML4728HE3/61 | 1800 (12 mm tape on 7" plastic reel)  |                        |

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

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                        |                  |               |      |
|---|------------------------|------------------|---------------|------|
| PARAMETER   | TEST CONDITION         | SYMBOL           | VALUE         | UNIT |
| Power dissipation   | T <sub>L</sub> = 75 °C | P <sub>tot</sub> | 1000          | mW   |
| Junction temperature  |                        | T <sub>j</sub>   | 150           | °C   |
| Storage temperature range   |                        | T <sub>stg</sub> | - 65 to + 150 | °C   |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                     |      |              |           |                 |     |                    |                       |                              |
|--|--------------|---------------------|------|--------------|-----------|-----------------|-----|--------------------|-----------------------|------------------------------|
| PART NUMBER  | MARKING CODE | ZENER VOLTAGE RANGE |      | TEST CURRENT |           | REVERSE CURRENT |     | DYNAMIC RESISTANCE |                       | SURGE CURRENT <sup>(1)</sup> |
|  |              | $V_Z$ 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           |           | $\mu\text{A}$   | V   | $\Omega$           |                       | $\text{mA}_{pk}$             |
|  |              | NOM.                |      |              |           | MAX.            |     | MAX.               | MAX.                  | MAX.                         |
| SML4728  | 3P3          | 3.3                 | 76   | 1            | 100       | 1               | 10  | 400                | 1380                  |                              |
| SML4729  | 3P6          | 3.6                 | 69   | 1            | 100       | 1               | 10  | 400                | 1260                  |                              |
| SML4730  | 3P9          | 3.9                 | 64   | 1            | 50        | 1               | 9   | 400                | 1190                  |                              |
| SML4731  | 4P3          | 4.3                 | 58   | 1            | 10        | 1               | 9   | 400                | 1070                  |                              |
| SML4732  | 4P7          | 4.7                 | 53   | 1            | 10        | 1               | 8   | 500                | 970                   |                              |
| SML4733  | 5P1          | 5.1                 | 49   | 1            | 10        | 1               | 7   | 550                | 890                   |                              |
| SML4734  | 5P6          | 5.6                 | 45   | 1            | 10        | 2               | 5   | 600                | 810                   |                              |
| SML4735  | 6P2          | 6.2                 | 41   | 1            | 10        | 3               | 2   | 700                | 730                   |                              |
| SML4736  | 6P8          | 6.8                 | 37   | 1            | 10        | 4               | 3.5 | 700                | 660                   |                              |
| SML4737  | 7P5          | 7.5                 | 34   | 0.5          | 10        | 5               | 4   | 700                | 605                   |                              |
| 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**

<sup>(1)</sup> 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<sub>amb</sub> = 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 millimeters (inches): DO-214AC





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