



**THE DATASHEET OF  
SML4748AHE3/61**



## 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  $\pm 10\%$ , suffix A  $\pm 5\%$
- 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 |
| $V_Z$ range nom.        | 3.3 to 100    | V    |
| Test current $I_{ZT}$   | 2.5 to 76     | mA   |
| $V_Z$ 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 ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified) |                      |           |             |      |
|---|----------------------|-----------|-------------|------|
| PARAMETER   | TEST CONDITION       | SYMBOL    | VALUE       | UNIT |
| Power dissipation   | $T_L = 75\text{ °C}$ | $P_{tot}$ | 1000        | mW   |
| Junction temperature  |                      | $T_j$     | 150         | °C   |
| Storage temperature range   |                      | $T_{stg}$ | -65 to +150 | °C   |



| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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<sup>®</sup> method



BASIC CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)



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Fig. 1 - Maximum Continuous Power Dissipation



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Fig. 4 - Typical Instantaneous Forward Characteristics for SML4763



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Fig. 2 - Typical Zener Impedance



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Fig. 5 - Typical Reverse Characteristics



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Fig. 3 - Typical Temperature Coefficients



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

### DO-214AC (SMA)



### Mounting Pad Layout





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