

## Silicon Planar Zener Diodes

### FEATURES

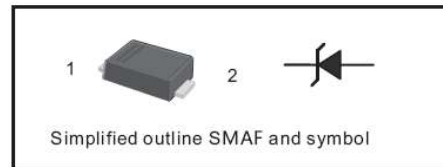
- Total power dissipation: Max. 1 W.
- Wide zener reverse voltage range 3.3V to 330V.
- Small plastic package suitable for surface mounted design.

### MECHANICAL DATA

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg 0.00086oz

### PINNING

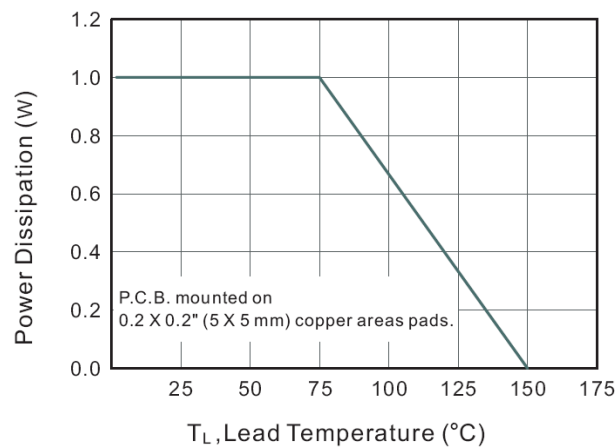
| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



### Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

| Parameter                                   | Symbol | Value         | Unit             |
|---|--------|---------------|------------------|
| Power Dissipation at $T_L=75^\circ\text{C}$ | $P_D$  | 1             | W                |
| Forward Voltage at $I_F = 200 \text{ mA}$   | $V_F$  | 1.2           | V                |
| Junction Temperature Range                  | $T_J$  | - 55 to + 150 | $^\circ\text{C}$ |
| Storage Temperature Range                   | $T_S$  | - 55 to + 150 | $^\circ\text{C}$ |

Fig.1 Maximum Continuous Power Derating



# 1SMAF4728A THRU 1SMAF4777A

Characteristics at Ta = 25°C

| Type       | Marking | Zener Voltage Range <sup>(1)</sup>    |         |         | I <sub>ZT</sub><br>(mA) | Dynamic<br>Impedance<br>Z <sub>ZT</sub> (at I <sub>ZT</sub> )<br>Max (Ω) | Reverse Current            |                          | Admissible<br>Zener Current<br>I <sub>ZM</sub> (mA) |
|------------|---------|---------------------------------------|---------|---------|-------------------------|--|----------------------------|--------------------------|---|
|            |         | V <sub>ZT</sub> (at I <sub>ZT</sub> ) |         |         |                         |  | I <sub>R</sub><br>Max (μA) | at V <sub>R</sub><br>(V) |   |
|            |         | Min (V)                               | Nom (V) | Max (V) |                         |  |                            |                          |   |
| 1SMAF4728A | 728A    | 3.10                                  | 3.3     | 3.50    | 75                      | 10   | 100                        | 1                        | 285   |
| 1SMAF4729A | 729A    | 3.40                                  | 3.6     | 3.80    | 69                      | 10   | 100                        | 1                        | 263   |
| 1SMAF4730A | 730A    | 3.70                                  | 3.9     | 4.10    | 64                      | 9.0  | 50                         | 1                        | 243   |
| 1SMAF4731A | 731A    | 4.06                                  | 4.3     | 4.56    | 58                      | 9.0  | 25                         | 1                        | 219   |
| 1SMAF4732A | 732A    | 4.50                                  | 4.7     | 4.93    | 53                      | 8.0  | 10                         | 1                        | 203   |
| 1SMAF4733A | 733A    | 4.84                                  | 5.1     | 5.36    | 49                      | 7.0  | 10                         | 1                        | 186   |
| 1SMAF4734A | 734A    | 5.32                                  | 5.6     | 5.92    | 45                      | 5.0  | 10                         | 2                        | 170   |
| 1SMAF4735A | 735A    | 5.86                                  | 6.2     | 6.51    | 41                      | 2.0  | 10                         | 3                        | 154   |
| 1SMAF4736A | 736A    | 6.46                                  | 6.8     | 7.18    | 37                      | 3.5  | 10                         | 4                        | 140   |
| 1SMAF4737A | 737A    | 7.12                                  | 7.5     | 7.88    | 34                      | 4.0  | 10                         | 5                        | 127   |
| 1SMAF4738A | 738A    | 7.79                                  | 8.2     | 8.67    | 31                      | 4.5  | 10                         | 6                        | 116   |
| 1SMAF4739A | 739A    | 8.60                                  | 9.1     | 9.59    | 28                      | 5.0  | 10                         | 7                        | 104   |
| 1SMAF4740A | 740A    | 9.50                                  | 10      | 10.5    | 25                      | 7.0  | 10                         | 7                        | 95  |
| 1SMAF4741A | 741A    | 10.4                                  | 11      | 11.6    | 23                      | 8.0  | 5                          | 8                        | 86  |
| 1SMAF4742A | 742A    | 11.4                                  | 12      | 12.6    | 21                      | 9.0  | 5                          | 9                        | 79  |
| 1SMAF4743A | 743A    | 12.4                                  | 13      | 14.1    | 19                      | 10   | 5                          | 10                       | 71  |
| 1SMAF4744A | 744A    | 13.8                                  | 15      | 15.8    | 17                      | 14   | 5                          | 11                       | 63  |
| 1SMAF4745A | 745A    | 15.2                                  | 16      | 17.1    | 16                      | 16   | 5                          | 12                       | 58  |
| 1SMAF4746A | 746A    | 16.8                                  | 18      | 19.2    | 14                      | 20   | 5                          | 13                       | 52  |
| 1SMAF4747A | 747A    | 19.0                                  | 20      | 21.2    | 13                      | 22   | 5                          | 15                       | 47  |
| 1SMAF4748A | 748A    | 20.8                                  | 22      | 23.3    | 12                      | 23   | 5                          | 17                       | 43  |
| 1SMAF4749A | 749A    | 22.8                                  | 24      | 26.0    | 11                      | 25   | 5                          | 18                       | 38  |
| 1SMAF4750A | 750A    | 25.3                                  | 27      | 28.9    | 9.5                     | 35   | 5                          | 21                       | 35  |
| 1SMAF4751A | 751A    | 28.2                                  | 30      | 32.0    | 8.5                     | 40   | 5                          | 23                       | 31  |
| 1SMAF4752A | 752A    | 31.3                                  | 33      | 34.9    | 7.5                     | 45   | 5                          | 25                       | 28  |
| 1SMAF4753A | 753A    | 34.2                                  | 36      | 37.9    | 7.0                     | 50   | 5                          | 27                       | 26  |
| 1SMAF4754A | 754A    | 37.2                                  | 39      | 41.5    | 6.5                     | 60   | 5                          | 30                       | 24  |
| 1SMAF4755A | 755A    | 40.9                                  | 43      | 45.6    | 6.0                     | 70   | 1                          | 32                       | 22  |
| 1SMAF4756A | 756A    | 44.9                                  | 47      | 49.8    | 5.5                     | 80   | 1                          | 35                       | 20  |
| 1SMAF4757A | 757A    | 48.6                                  | 51      | 54.0    | 5.0                     | 95   | 1                          | 38                       | 18  |
| 1SMAF4758A | 758A    | 53.6                                  | 56      | 58.8    | 4.5                     | 110  | 1                          | 42                       | 17  |
| 1SMAF4759A | 759A    | 58.9                                  | 62      | 65.6    | 4.0                     | 125  | 1                          | 47                       | 15  |
| 1SMAF4760A | 760A    | 64.6                                  | 68      | 71.7    | 3.7                     | 150  | 1                          | 52                       | 14  |
| 1SMAF4761A | 761A    | 71.2                                  | 75      | 78.8    | 3.3                     | 175  | 1                          | 56                       | 12  |
| 1SMAF4762A | 762A    | 77.9                                  | 82      | 87.0    | 3.0                     | 200  | 1                          | 62                       | 11  |
| 1SMAF4763A | 763A    | 86.0                                  | 91      | 96.0    | 2.8                     | 250  | 1                          | 69                       | 10  |
| 1SMAF4764A | 764A    | 95.0                                  | 100     | 105     | 2.5                     | 350  | 1                          | 76                       | 9.5   |
| 1SMAF4765A | 765A    | 104                                   | 110     | 116     | 2.3                     | 450  | 1                          | 84                       | 8.6   |
| 1SMAF4766A | 766A    | 114                                   | 120     | 127     | 2.0                     | 550  | 1                          | 91                       | 7.8   |
| 1SMAF4767A | 767A    | 125                                   | 135     | 142     | 1.9                     | 700  | 1                          | 100                      | 7.0   |
| 1SMAF4768A | 768A    | 140                                   | 150     | 157     | 1.7                     | 900  | 1                          | 110                      | 6.3   |
| 1SMAF4769A | 769A    | 155                                   | 165     | 172     | 1.6                     | 1100   | 1                          | 120                      | 5.8   |
| 1SMAF4770A | 770A    | 170                                   | 180     | 191     | 1.4                     | 1200   | 1                          | 135                      | 5.2   |
| 1SMAF4771A | 771A    | 189                                   | 200     | 211     | 1.2                     | 1400   | 1                          | 150                      | 4.7   |
| 1SMAF4772A | 772A    | 209                                   | 220     | 231     | 1.0                     | 1600   | 1                          | 165                      | 4.3   |
| 1SMAF4773A | 773A    | 229                                   | 240     | 251     | 1.0                     | 1800   | 1                          | 180                      | 3.9   |
| 1SMAF4774A | 774A    | 249                                   | 260     | 271     | 1.0                     | 2000   | 1                          | 190                      | 3.7   |
| 1SMAF4775A | 775A    | 269                                   | 280     | 291     | 1.0                     | 2100   | 1                          | 205                      | 3.4   |
| 1SMAF4776A | 776A    | 289                                   | 300     | 315     | 1.0                     | 2300   | 1                          | 230                      | 3.1   |
| 1SMAF4777A | 777A    | 313                                   | 330     | 346     | 1.0                     | 2500   | 1                          | 250                      | 2.8   |

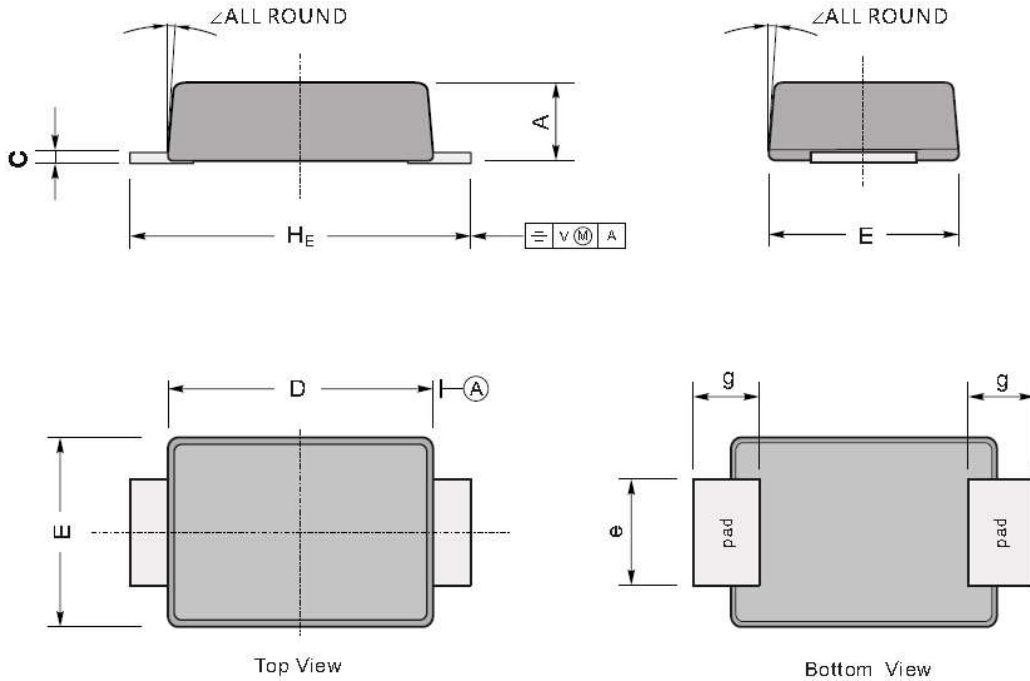
(1) V<sub>ZT</sub> is tested with pulses (20 ms)

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## PACKAGE OUTLINE

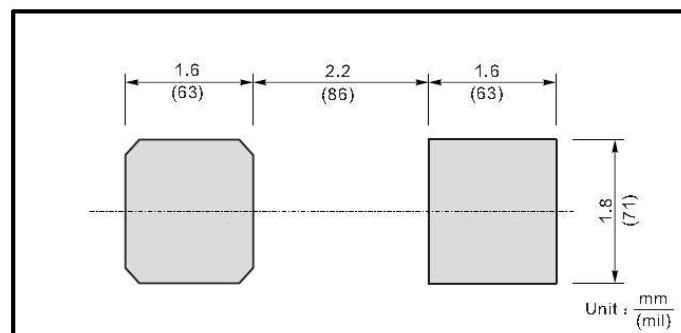
Plastic surface mounted package; 2 leads

SMAF



| UNIT |     | A   | C    | D   | E   | e   | g   | $H_E$ | $\angle$ |
|------|-----|-----|------|-----|-----|-----|-----|-------|----------|
| mm   | max | 1.1 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9   | 7°       |
|      | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4   |          |
| mil  | max | 43  | 7.9  | 146 | 106 | 63  | 47  | 193   |          |
|      | min | 35  | 4.7  | 130 | 94  | 51  | 31  | 173   |          |

### The recommended mounting pad size



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