

SMF *** Series

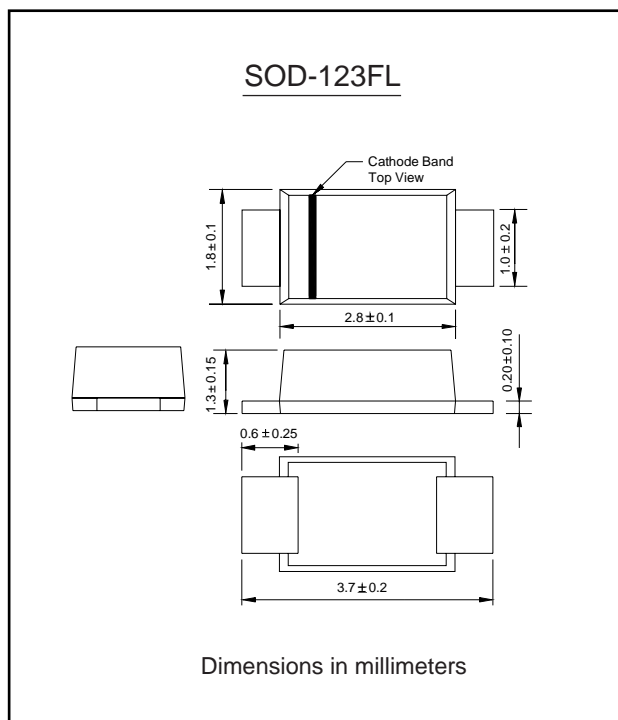
GLASS PASSIVATED JUNCTION Zener voltage regulator diodes , 1.0 Watt Steady State

Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free component
- For use in stabilizing and clipping with high power rating

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any
- Weight: 0.0007 ounce, 0.02 gram



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

| Parameter | Symbol | Value | UNIT |
|---|-----------------|---------------|------------------|
| DC power dissipation at $T_L = 50^\circ\text{C}^{(1)}$ | P_D | 1 | W |
| Maximum forward voltage at $I_F = 200\text{ mA}$ | V_F | 1.5 | V |
| Maximum thermal resistance junction to ambient air ⁽²⁾ | $R_{\theta JA}$ | 170 | K/W |
| Junction temperature range | T_J | - 55 to + 150 | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | - 55 to + 150 | $^\circ\text{C}$ |

Note:

- (1) T_L = Lead temperature at 0.3mm from body
 (2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case



SMF4728A ~ SMF1330A

Electrical Characteristics(T_A=25°C unless otherwise noted)

| Part Number | Device Marking Code | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current | Maximum Surge Current |
|-------------|---------------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|-------|--------------------------|-----------------------|
| | | V _Z @ I _{ZT} | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _{ZK} | I _R @ V _R | | I _{ZM} | I _{RM} |
| | | (V) | (mA) | (Ω) | (Ω) | (mA) | (μA) | (V) | (mA) | (mApk) |
| SMF4728A | 728A | 3.3 | 76.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 274.0 | 1370 |
| SMF4729A | 729A | 3.6 | 69.0 | 10.0 | 400 | 1.00 | 100.0 | 1.0 | 251.0 | 1255 |
| SMF4730A | 730A | 3.9 | 64.0 | 9.0 | 400 | 1.00 | 50.0 | 1.0 | 232.0 | 1160 |
| SMF4731A | 731A | 4.3 | 58.0 | 9.0 | 400 | 1.00 | 10.0 | 1.0 | 210.0 | 1050 |
| SMF4732A | 732A | 4.7 | 53.0 | 8.0 | 500 | 1.00 | 10.0 | 1.0 | 192.0 | 960 |
| SMF4733A | 733A | 5.1 | 49.0 | 7.0 | 550 | 1.00 | 10.0 | 1.0 | 177.0 | 885 |
| SMF4734A | 734A | 5.6 | 45.0 | 5.0 | 600 | 1.00 | 10.0 | 2.0 | 161.0 | 805 |
| SMF4735A | 735A | 6.2 | 41.0 | 2.0 | 700 | 1.00 | 10.0 | 3.0 | 146.0 | 730 |
| SMF4736A | 736A | 6.8 | 37.0 | 3.5 | 700 | 1.00 | 5.0 | 4.0 | 133.0 | 660 |
| SMF4737A | 737A | 7.5 | 34.0 | 4.0 | 700 | 0.50 | 5.0 | 5.0 | 121.0 | 605 |
| SMF4738A | 738A | 8.2 | 31.0 | 4.5 | 700 | 0.50 | 5.0 | 6.0 | 110.0 | 550 |
| SMF4739A | 739A | 9.1 | 28.0 | 5.0 | 700 | 0.50 | 0.5 | 7.0 | 100.0 | 500 |
| SMF4740A | 740A | 10.0 | 25.0 | 7.0 | 700 | 0.25 | 0.5 | 7.6 | 91.0 | 454 |
| SMF4741A | 741A | 11.0 | 23.0 | 8.0 | 700 | 0.25 | 0.1 | 8.4 | 83.0 | 414 |
| SMF4742A | 742A | 12.0 | 21.0 | 9.0 | 700 | 0.25 | 0.1 | 9.1 | 76.0 | 380 |
| SMF4743A | 743A | 13.0 | 19.0 | 10.0 | 700 | 0.25 | 0.1 | 9.9 | 69.0 | 344 |
| SMF4744A | 744A | 15.0 | 17.0 | 14.0 | 700 | 0.25 | 0.1 | 11.4 | 61.0 | 305 |
| SMF4745A | 745A | 16.0 | 15.5 | 16.0 | 700 | 0.25 | 0.1 | 12.2 | 57.0 | 285 |
| SMF4746A | 746A | 18.0 | 14.0 | 20.0 | 750 | 0.25 | 0.1 | 13.7 | 50.0 | 250 |
| SMF4747A | 747A | 20.0 | 12.5 | 22.0 | 750 | 0.25 | 0.1 | 15.2 | 45.0 | 225 |
| SMF4748A | 748A | 22.0 | 11.5 | 23.0 | 750 | 0.25 | 0.1 | 16.7 | 41.0 | 205 |
| SMF4749A | 749A | 24.0 | 10.5 | 25.0 | 750 | 0.25 | 0.1 | 18.2 | 38.0 | 190 |
| SMF4750A | 750A | 27.0 | 9.5 | 35.0 | 750 | 0.25 | 0.1 | 20.6 | 34.0 | 170 |
| SMF4751A | 751A | 30.0 | 8.5 | 40.0 | 1000 | 0.25 | 0.1 | 22.8 | 30.0 | 150 |
| SMF4752A | 752A | 33.0 | 7.5 | 45.0 | 1000 | 0.25 | 0.1 | 25.1 | 27.0 | 135 |
| SMF4753A | 753A | 36.0 | 7.0 | 50.0 | 1000 | 0.25 | 0.1 | 27.4 | 25.0 | 125 |
| SMF4754A | 754A | 39.0 | 6.5 | 60.0 | 1000 | 0.25 | 0.1 | 29.7 | 23.0 | 115 |
| SMF4755A | 755A | 43.0 | 6.0 | 70.0 | 1500 | 0.25 | 0.1 | 32.7 | 22.0 | 110 |
| SMF4756A | 756A | 47.0 | 5.5 | 80.0 | 1500 | 0.25 | 0.1 | 35.8 | 19.0 | 95 |
| SMF4757A | 757A | 51.0 | 5.0 | 95.0 | 1500 | 0.25 | 0.1 | 38.8 | 18.0 | 90 |
| SMF4758A | 758A | 56.0 | 4.5 | 110.0 | 2000 | 0.25 | 0.1 | 42.6 | 16.0 | 80 |
| SMF4759A | 759A | 62.0 | 4.0 | 125.0 | 2000 | 0.25 | 0.1 | 47.1 | 14.0 | 70 |
| SMF4760A | 760A | 68.0 | 3.7 | 150.0 | 2000 | 0.25 | 0.1 | 51.7 | 13.0 | 65 |
| SMF4761A | 761A | 75.0 | 3.3 | 175.0 | 2000 | 0.25 | 0.1 | 56.0 | 12.0 | 60 |
| SMF4762A | 762A | 82.0 | 3.0 | 200.0 | 3000 | 0.25 | 0.1 | 62.2 | 11.0 | 55 |
| SMF4763A | 763A | 91.0 | 2.8 | 250.0 | 3000 | 0.25 | 0.1 | 69.2 | 10.0 | 50 |
| SMF4764A | 764A | 100.0 | 2.5 | 350.0 | 3000 | 0.25 | 0.1 | 76.0 | 9.0 | 45 |
| SMF1110A | 110A | 110.0 | 2.3 | 450.0 | 4000 | 0.25 | 0.1 | 83.6 | 8.6 | 40 |
| SMF1120A | 120A | 120.0 | 2.0 | 550.0 | 4500 | 0.25 | 0.1 | 91.2 | 7.8 | 37 |
| SMF1130A | 130A | 130.0 | 1.9 | 700.0 | 5000 | 0.25 | 0.1 | 98.8 | 7.0 | 34 |
| SMF1150A | 150A | 150.0 | 1.7 | 1000.0 | 6000 | 0.25 | 0.1 | 114.0 | 6.4 | 30 |
| SMF1160A | 160A | 160.0 | 1.6 | 1100.0 | 6500 | 0.25 | 0.1 | 121.6 | 5.8 | 28 |
| SMF1180A | 180A | 180.0 | 1.4 | 1200.0 | 7000 | 0.25 | 0.1 | 136.8 | 5.2 | 25 |
| SMF1200A | 200A | 200.0 | 1.2 | 1900.0 | 9990 | 0.25 | 0.1 | 152.0 | 4.7 | 22 |
| SMF1220A | 220A | 220.0 | 1.0 | 1600.0 | 8000 | 0.25 | 0.1 | 167.2 | 4.0 | 20 |
| SMF1240A | 240A | 240.0 | 0.9 | 1800.0 | 8500 | 0.25 | 0.1 | 182.4 | 3.8 | 19 |
| SMF1250A | 250A | 250.0 | 0.9 | 2000.0 | 9000 | 0.25 | 0.1 | 190.0 | 3.6 | 18 |
| SMF1270A | 270A | 270.0 | 0.8 | 2100.0 | 9000 | 0.25 | 0.1 | 205.0 | 3.3 | 16 |
| SMF1300A | 300A | 300.0 | 0.8 | 2300.0 | 9500 | 0.25 | 0.1 | 228.0 | 3.0 | 15 |
| SMF1330A | 330A | 330.0 | 0.7 | 2500.0 | 9500 | 0.25 | 0.1 | 250.2 | 2.7 | 13 |

Notes :

- (1) The type number listed have a standard tolerance on the nominal zener voltage of ± 5 %
- (2) The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC

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

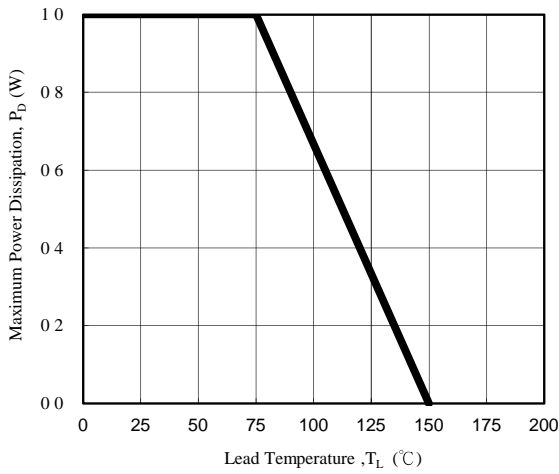


Fig. 1 - Power Temperature Derating Curve

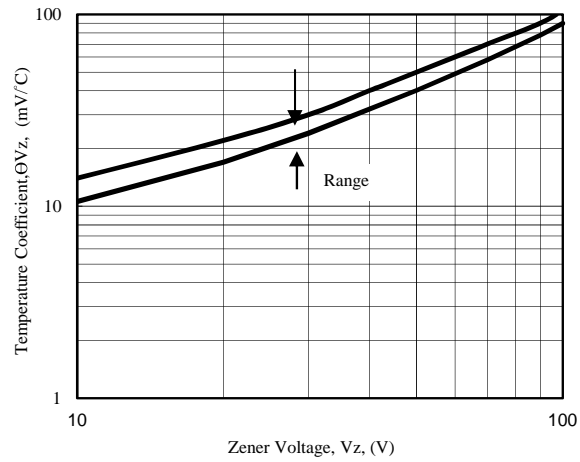


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

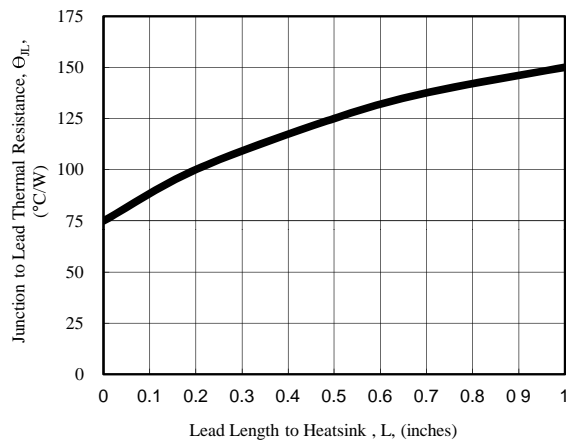


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

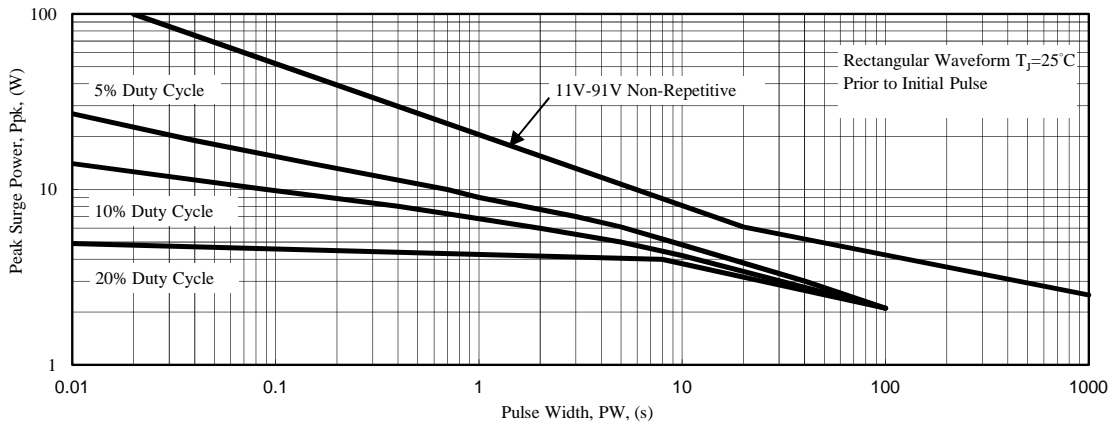
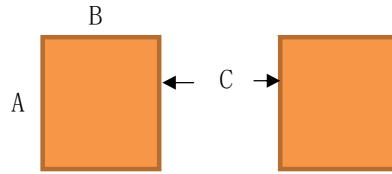


Fig. 4 - Maximum Surge Power

Suggested solder pad layout



Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|-----------|-------------|-------------|-------------|
| SOD123-FL | 0.044(1.10) | 0.040(1.00) | 0.079(2.00) |