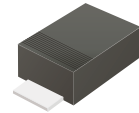
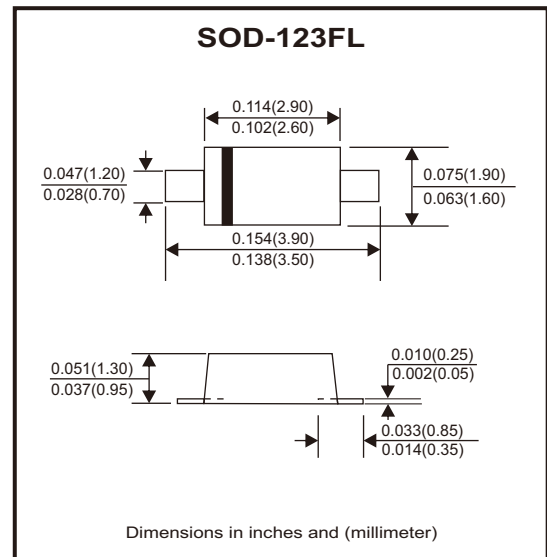


**CZRMF4734A-HF Thru. CZRMF1330A-HF****Zener Voltage: 5.6V to 330V****DC Power: 1 W****RoHS Device****Halogen Free****Features**

- Glass passivated chip.
- Low leakage current.
- Built-in strain relief.
- Low inductance.
- High peak reverse power dissipation.
- For use in stabilizing and clipping with high power rating.

**Mechanical data**

- Case: SOD-123FL, molded plastic.
- Terminal: Solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except bipolar.
- Epoxy: UL 94V-0 rated flame retardant.
- Mounting position: Any.

**Circuit Diagram****Maximum Rating** (at  $T_A=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                            | Conditions                     | Symbol          | Value       | Unit               |
|--------------------------------------|--------------------------------|-----------------|-------------|--------------------|
| DC power dissipation                 | $T_L = 50^{\circ}\text{C}$     | $P_D$           | 1           | W                  |
| Forward voltage                      | $I_F = 200\text{mA}$           | $V_F$           | 1.2         | V                  |
| Thermal resistance                   | Junction to ambient air (Note) | $R_{\theta JA}$ | 170         | K/W                |
| Operating junction temperature range |                                | $T_J$           | -55 to +150 | $^{\circ}\text{C}$ |
| Storage temperature range            |                                | $T_{STG}$       | -55 to +175 | $^{\circ}\text{C}$ |

Note: Valid provided that leads are kept at ambient temperature at a distance of 10mm from case.

## Electrical Characteristics (at TA=25°C unless otherwise specified)

| Part No       | Nominal Zener Voltage |         | Maximum Zener Impedance |            |         | Maximum Reverse Leakage Current |       | Maximum DC Zener Current | Maximum Surge Current | Marking Code |
|---------------|-----------------------|---------|-------------------------|------------|---------|---------------------------------|-------|--------------------------|-----------------------|--------------|
|               | Vz@Izt(V)             | Izt(mA) | Zzt@Izt(Ω)              | Zzk@Izk(Ω) | Izk(mA) | Ir(μA)                          | Vr(V) | Izm(mA)                  | Irm(mApk)             |              |
| CZRMF4734A-HF | 5.6                   | 45.0    | 5.0                     | 600        | 1.00    | 10.0                            | 2.0   | 161.0                    | 805                   | 34A, FHL     |
| CZRMF4735A-HF | 6.2                   | 41.0    | 2.0                     | 700        | 1.00    | 10.0                            | 3.0   | 146.0                    | 730                   | 35A, FHN     |
| CZRMF4736A-HF | 6.8                   | 37.0    | 3.5                     | 700        | 1.00    | 5.0                             | 4.0   | 133.0                    | 660                   | 36A, FHO     |
| CZRMF4737A-HF | 7.5                   | 34.0    | 4.0                     | 700        | 0.50    | 5.0                             | 5.0   | 121.0                    | 605                   | 37A, FHQ     |
| CZRMF4738A-HF | 8.2                   | 31.0    | 4.5                     | 700        | 0.50    | 5.0                             | 6.0   | 110.0                    | 550                   | 38A, FHR     |
| CZRMF4739A-HF | 9.1                   | 28.0    | 5.0                     | 700        | 0.50    | 0.5                             | 7.0   | 100.0                    | 500                   | 39A, FHT     |
| CZRMF4740A-HF | 10.0                  | 25.0    | 7.0                     | 700        | 0.25    | 0.5                             | 7.6   | 91.0                     | 454                   | 40A, FHU     |
| CZRMF4741A-HF | 11.0                  | 23.0    | 8.0                     | 700        | 0.25    | 0.1                             | 8.4   | 83.0                     | 414                   | 41A, FHV     |
| CZRMF4742A-HF | 12.0                  | 21.0    | 9.0                     | 700        | 0.25    | 0.1                             | 9.1   | 76.0                     | 380                   | 42A, FHW     |
| CZRMF4743A-HF | 13.0                  | 19.0    | 10.0                    | 700        | 0.25    | 0.1                             | 9.9   | 69.0                     | 344                   | 43A, FHX     |
| CZRMF4744A-HF | 15.0                  | 17.0    | 14.0                    | 700        | 0.25    | 0.1                             | 11.4  | 61.0                     | 305                   | 44A, FHZ     |
| CZRMF4745A-HF | 16.0                  | 15.5    | 16.0                    | 700        | 0.25    | 0.1                             | 12.2  | 57.0                     | 285                   | 45A, FJA     |
| CZRMF4746A-HF | 18.0                  | 14.0    | 20.0                    | 750        | 0.25    | 0.1                             | 13.7  | 50.0                     | 250                   | 46A, FJF     |
| CZRMF4747A-HF | 20.0                  | 12.5    | 22.0                    | 750        | 0.25    | 0.1                             | 15.2  | 45.0                     | 225                   | 47A, FJG     |
| CZRMF4748A-HF | 22.0                  | 11.5    | 23.0                    | 750        | 0.25    | 0.1                             | 16.7  | 41.0                     | 205                   | 48A, FJK     |
| CZRMF4749A-HF | 24.0                  | 10.5    | 25.0                    | 750        | 0.25    | 0.1                             | 18.2  | 38.0                     | 190                   | 49A, FJL     |
| CZRMF4750A-HF | 27.0                  | 9.5     | 35.0                    | 750        | 0.25    | 0.1                             | 20.6  | 34.0                     | 170                   | 50A, FJN     |
| CZRMF4751A-HF | 30.0                  | 8.5     | 40.0                    | 1000       | 0.25    | 0.1                             | 22.8  | 30.0                     | 150                   | 51A, FJQ     |
| CZRMF4752A-HF | 33.0                  | 7.5     | 45.0                    | 1000       | 0.25    | 0.1                             | 25.1  | 27.0                     | 135                   | 52A, FJR     |
| CZRMF4753A-HF | 36.0                  | 7.0     | 50.0                    | 1000       | 0.25    | 0.1                             | 27.4  | 25.0                     | 125                   | 53A, FJS     |
| CZRMF4754A-HF | 39.0                  | 6.5     | 60.0                    | 1000       | 0.25    | 0.1                             | 29.7  | 23.0                     | 115                   | 54A, FJT     |
| CZRMF4755A-HF | 43.0                  | 6.0     | 70.0                    | 1500       | 0.25    | 0.1                             | 32.7  | 22.0                     | 110                   | 55A, FLG     |
| CZRMF4756A-HF | 47.0                  | 5.5     | 80.0                    | 1500       | 0.25    | 0.1                             | 35.8  | 19.0                     | 95                    | 56A, FLJ     |
| CZRMF4757A-HF | 51.0                  | 5.0     | 95.0                    | 1500       | 0.25    | 0.1                             | 38.8  | 18.0                     | 90                    | 57A, FLK     |
| CZRMF4758A-HF | 56.0                  | 4.5     | 110.0                   | 2000       | 0.25    | 0.1                             | 42.6  | 16.0                     | 80                    | 58A, FLL     |
| CZRMF4759A-HF | 62.0                  | 4.0     | 125.0                   | 2000       | 0.25    | 0.1                             | 47.1  | 14.0                     | 70                    | 59A, FLN     |
| CZRMF4760A-HF | 68.0                  | 3.7     | 150.0                   | 2000       | 0.25    | 0.1                             | 51.7  | 13.0                     | 65                    | 60A, FLO     |
| CZRMF4761A-HF | 75.0                  | 3.3     | 175.0                   | 2000       | 0.25    | 0.1                             | 56.0  | 12.0                     | 60                    | 61A, FLQ     |
| CZRMF4762A-HF | 82.0                  | 3.0     | 200.0                   | 3000       | 0.25    | 0.1                             | 62.2  | 11.0                     | 55                    | 62A, FLR     |
| CZRMF4763A-HF | 91.0                  | 2.8     | 250.0                   | 3000       | 0.25    | 0.1                             | 69.2  | 10.0                     | 50                    | 63A, FLT     |
| CZRMF4764A-HF | 100.0                 | 2.5     | 350.0                   | 3000       | 0.25    | 0.1                             | 76.0  | 9.0                      | 45                    | 64A, FLU     |
| CZRMF1110A-HF | 110.0                 | 2.3     | 450.0                   | 4000       | 0.25    | 0.1                             | 83.6  | 8.6                      | 40                    | 11Z, FLV     |
| CZRMF1120A-HF | 120.0                 | 2.0     | 550.0                   | 4500       | 0.25    | 0.1                             | 91.2  | 7.8                      | 37                    | 12Z, FLW     |
| CZRMF1130A-HF | 130.0                 | 1.9     | 700.0                   | 5000       | 0.25    | 0.1                             | 98.8  | 7.0                      | 34                    | 13Z          |
| CZRMF1150A-HF | 150.0                 | 1.7     | 1000.0                  | 6000       | 0.25    | 0.1                             | 114.0 | 6.4                      | 30                    | 15Z, FLZ     |
| CZRMF1160A-HF | 160.0                 | 1.6     | 1100.0                  | 6500       | 0.25    | 0.1                             | 121.6 | 5.8                      | 28                    | 16Z          |
| CZRMF1180A-HF | 180.0                 | 1.4     | 1200.0                  | 7000       | 0.25    | 0.1                             | 136.8 | 5.2                      | 25                    | 18Z, FPF     |
| CZRMF1200A-HF | 200.0                 | 1.2     | 1900.0                  | 9990       | 0.25    | 0.1                             | 152.0 | 4.7                      | 22                    | 20Z, FPG     |
| CZRMF1220A-HF | 220.0                 | 1.0     | 1600.0                  | 8000       | 0.25    | 0.1                             | 167.2 | 4.0                      | 20                    | 22Z, FPK     |
| CZRMF1240A-HF | 240.0                 | 0.9     | 1800.0                  | 8500       | 0.25    | 0.1                             | 182.4 | 3.8                      | 19                    | 24Z, FPL     |
| CZRMF1250A-HF | 250.0                 | 0.9     | 2000.0                  | 9000       | 0.25    | 0.1                             | 190.0 | 3.6                      | 18                    | 25Z          |
| CZRMF1270A-HF | 270.0                 | 0.8     | 2100.0                  | 9000       | 0.25    | 0.1                             | 205.0 | 3.3                      | 16                    | 27Z          |
| CZRMF1300A-HF | 300.0                 | 0.8     | 2300.0                  | 9500       | 0.25    | 0.1                             | 228.0 | 3.0                      | 15                    | 30Z, FPQ     |
| CZRMF1330A-HF | 330.0                 | 0.7     | 2500.0                  | 9500       | 0.25    | 0.1                             | 250.2 | 2.7                      | 13                    | 33Z, FLR     |

Notes: 1. The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on Izt per JEDEC method.

## Typical Rating and Characteristic Curves (CZRMF4734A-HF Thru. CZRMF1330A-HF)

Fig.1 - Power Temperature Derating Curve

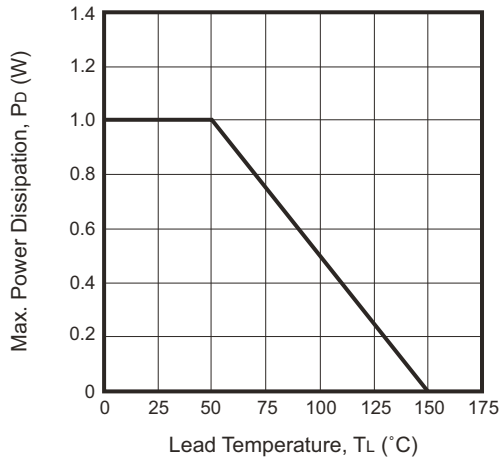


Fig.2 - Temperature Coefficients v.s. Zener Voltage

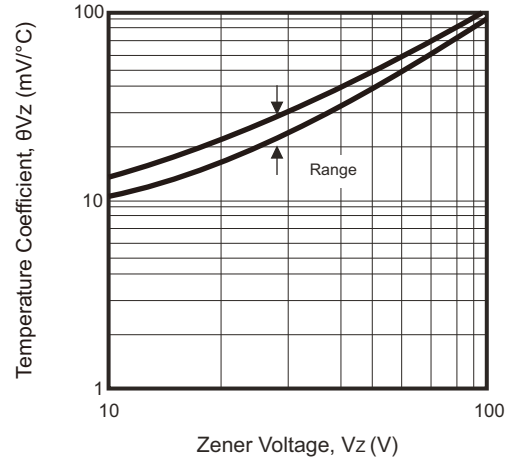


Fig.3 - Typical Thermal Resistance v.s. Lead Length

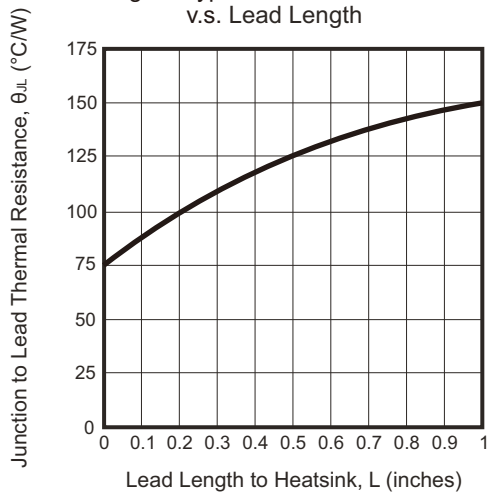
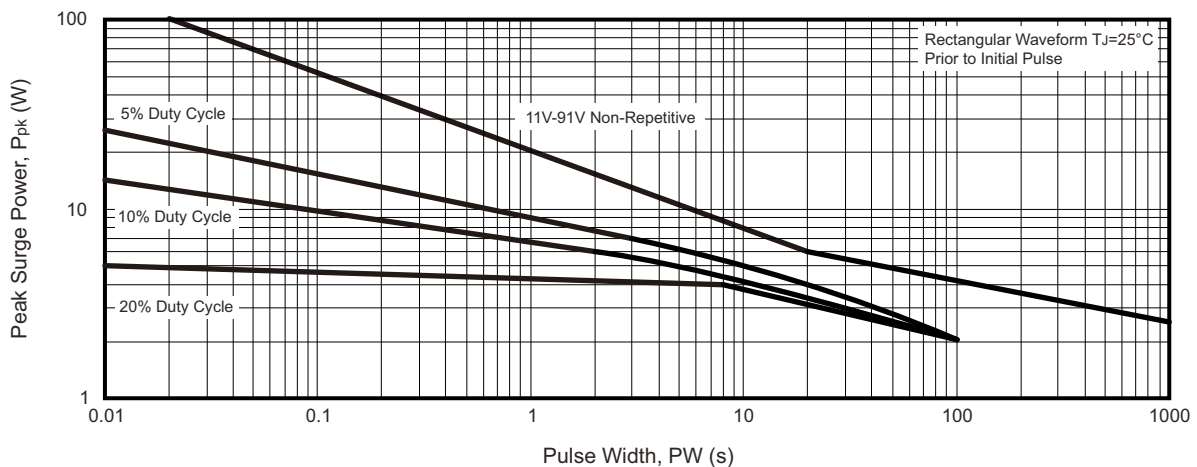
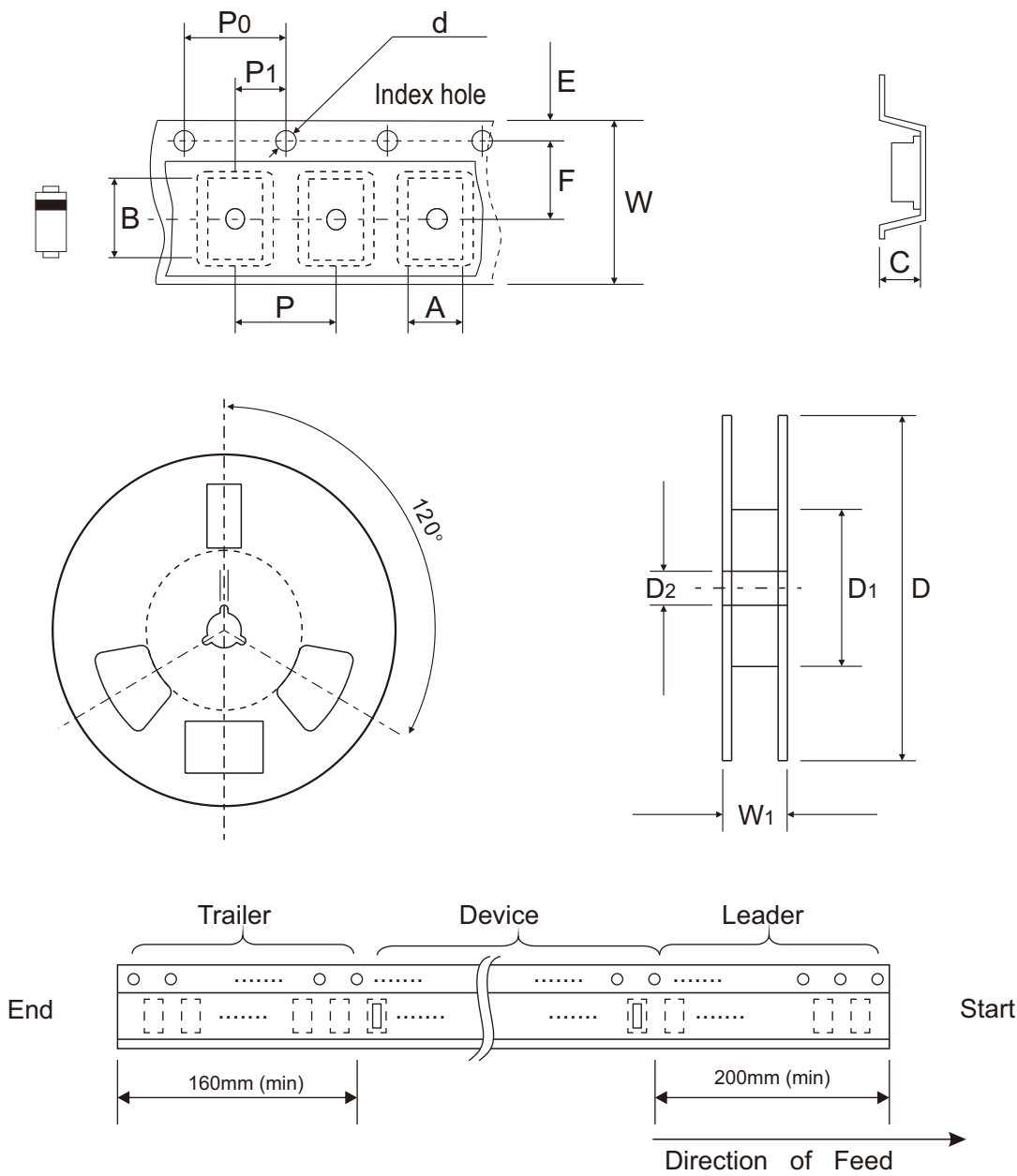


Fig.4 - Maximum Surge Power



Reel Taping Specification



| SOD-123FL | SYMBOL | A          | B | C | d             | D             | D1         | D2            |
|-----------|--------|------------|---|---|---------------|---------------|------------|---------------|
|           | (mm)   | See Note 1 |   |   | 1.55 ± 0.05   | 178.00 ± 1.00 | 50.00 Min. | 13.00 ± 0.20  |
|           | (inch) |            |   |   | 0.061 ± 0.002 | 7.008 ± 0.039 | 1.969 Min. | 0.512 ± 0.008 |

| SOD-123FL | SYMBOL | E             | F             | P             | P0            | P1            | W             | W1         |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
|           | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 8.00 ± 0.10   | 11.40 Max. |
|           | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 ± 0.004 | 0.449 Max. |

Note: 1. A, B, and C the clearance between the component and the cavity must be within 0.5mm max.  
for 8mm tape and 12mm tape, 1.0mm max. for 16mm tape and 24mm tape.

Marking Code

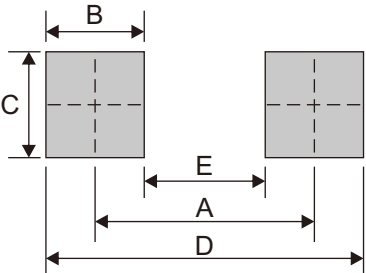
| Part Number                          | Marking Code |
|--------------------------------------|--------------|
| CZRMF4734A-HF Thru.<br>CZRMF1330A-HF | See Page.2   |



- 1. XXX = Marking code (see Page.2)
- 2.  = Cathode band

Suggested P.C.B. PAD Layout

| SIZE | SOD-123FL |        |
|------|-----------|--------|
|      | (mm)      | (inch) |
| A    | 2.90      | 0.114  |
| B    | 1.30      | 0.051  |
| C    | 1.40      | 0.055  |
| D    | 4.20      | 0.165  |
| E    | 1.60      | 0.063  |



Standard Packaging

| Case Type | REEL PACK  |                  |
|-----------|------------|------------------|
|           | REEL (pcs) | Reel Size (inch) |
| SOD-123FL | 3,000      | 7                |