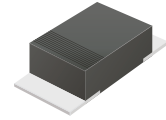


CFRMT101-HF Thru. CFRMT107-HF

Reverse Voltage: 50 to 1000 Volts

Forward Current: 1.0 Amp

RoHS Device
Halogen Free

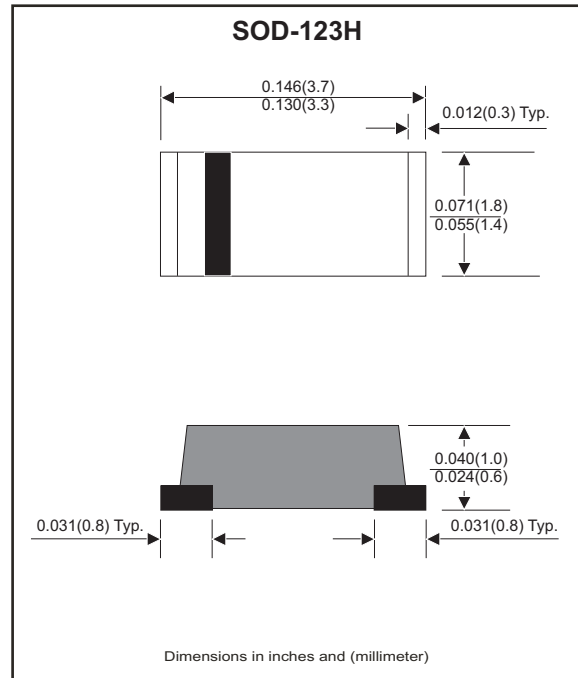


Features

- Excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile package is 40% thinner than standards SOD-123.
- Tiny plastic SMD package.
- High current capability.
- Fast switching for high efficiency.
- High surge current capability.
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant.
- Case: Molded plastic, SOD-123H/MINI SMA
- Terminals: Solderable per MIL-STD-750, Method 2026.
- Polarity: Indicated by cathode band.
- Mounting Position: any
- Weight: 0.011 grams approx.



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

| Parameter | Symbol | CFRMT 101-HF | CFRMT 102-HF | CFRMT 103-HF | CFRMT 104-HF | CFRMT 105-HF | CFRMT 106-F | CFRMT 107-HF | Unit |
|--|---------------------------------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------------|
| Max. Repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Max. Continuous reverse voltage | V_R | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Max. RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Max. Forward rectified current Ambient temperature= 55°C | I_o | 1.0 | | | | | | | A |
| Max. Forward voltage @ $I_F=1.0\text{A}$ | V_F | 1.3 | | | | | | | V |
| Max. Reverse recovery time (note 1) | T_{RR} | 150 | | 250 | 500 | | | ns | |
| Max. Forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 25 | | | | | | | A |
| Max. Reverse current | $V_R=V_{RRM}$ $T_J=25^\circ\text{C}$ | 5.0 | | | | | | | μA |
| | $V_R=V_{RRM}$ $T_J=100^\circ\text{C}$ | 100 | | | | | | | |
| Typ. Thermal resistance Junction to ambient air | $R_{\theta JA}$ | 42 | | | | | | | $^\circ\text{C/W}$ |
| Typ. Diode Junction capacitance $f=1\text{MHz}$ and applied 4V DC reverse voltage | C_J | 15 | | | | | | | pF |
| Operating junction temperature | T_J | -55 to +150 | | | | | | | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | -65 to +175 | | | | | | | $^\circ\text{C}$ |

Note 1. Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

Rating and Characteristic Curves (CFRMT101-HF Thru. CFRMT107-HF)

Fig.1- Typical Forward Current Derating Curve

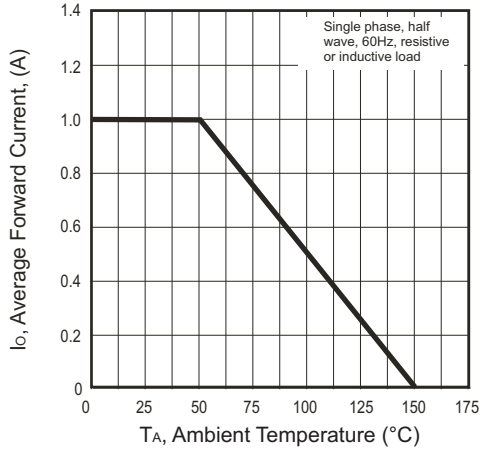


Fig.2- Typical Forward Characteristics

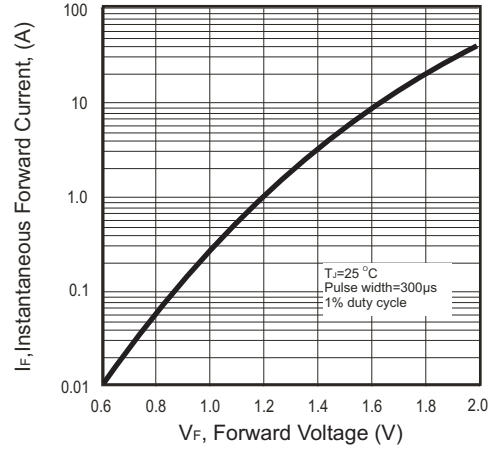
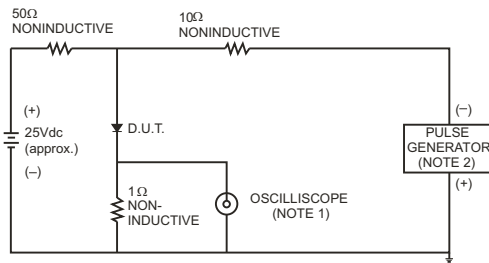


Fig.3- Test Circuit Diagram and Reverse Recovery Time Characteristics



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

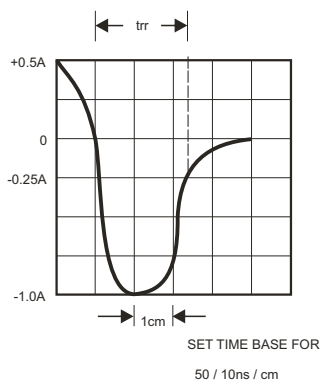


Fig.4- Maximum Non-repetitive Forward Surge Current

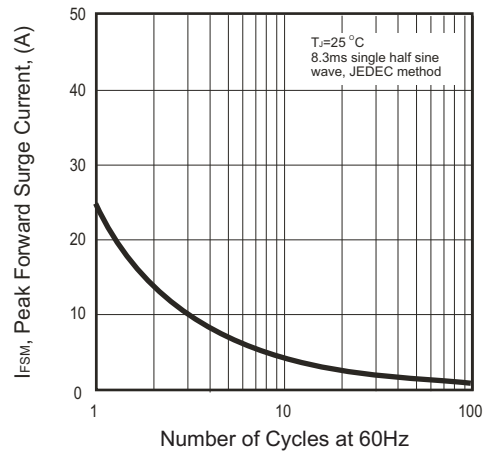
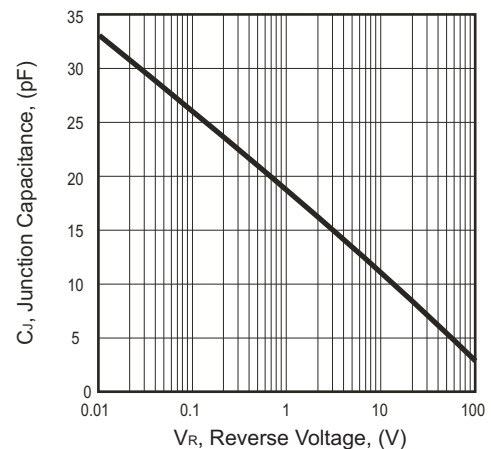
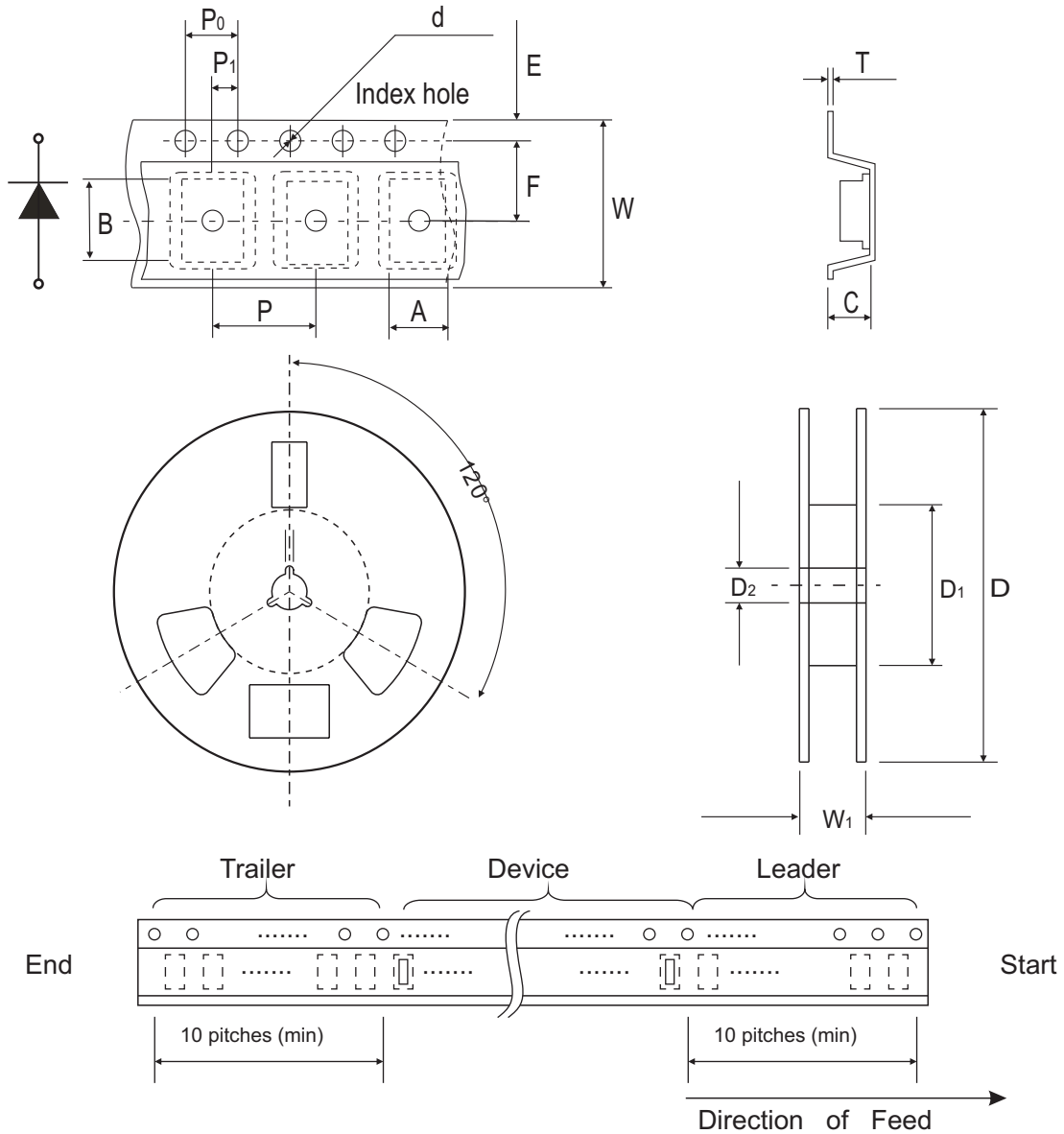


Fig.5- Typical Junction Capacitance





Reel Taping Specification



| SOD-123H | SYMBOL | A | B | C | d | D | D1 | D2 |
|----------|--------|---------------|---------------|---------------|---------------|--------------|------------|---------------|
| | (mm) | 2.00 ± 0.10 | 3.85 ± 0.10 | 1.10 ± 0.10 | 1.50 ± 0.10 | 178 ± 2.00 | 62.0 MIN. | 13.0 ± 0.50 |
| | (inch) | 0.079 ± 0.004 | 0.152 ± 0.004 | 0.043 ± 0.004 | 0.059 ± 0.004 | 7.00 ± 0.079 | 2.440 MIN. | 0.512 ± 0.020 |

| SOD-123H | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 0.23 ± 0.10 | 8.00 ± 0.30 | 11.40 ± 1.0 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.009 ± 0.004 | 0.315 ± 0.012 | 0.449 ± 0.039 |

Pinning information

| Pin | Simplified outline | Symbol |
|------------------------------|---|--|
| PIN 1 Cathode PIN 2 Anode |  |  |

Marking Code

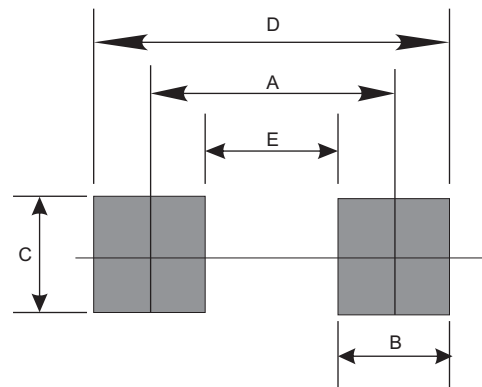
| Part Number | Marking Code |
|-------------|--------------|
| CFRMT101-HF | F1 |
| CFRMT102-HF | F2 |
| CFRMT103-HF | F3 |
| CFRMT104-HF | F4 |
| CFRMT105-HF | F5 |
| CFRMT106-HF | F6 |
| CFRMT107-HF | F7 |



xx = Product type marking code

Suggested PAD Layout

| SIZE | SOD-123H | |
|------|----------|--------|
| | (mm) | (inch) |
| A | 3.00 | 0.118 |
| B | 1.30 | 0.051 |
| C | 1.80 | 0.071 |
| D | 4.30 | 0.169 |
| E | 1.70 | 0.067 |



Standard Package

| Case Type | REEL PACK (T/R) | | | | |
|-----------|-----------------|----------|-------------|------------------|------------|
| | REEL (EA) | BOX (EA) | CARTON (EA) | Reel Size (inch) | Type Mat'l |
| SOD-123H | 3000 | 30000 | 240000 | 7 | Plastic |