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# Low Profile SMD General Purpose Rectifiers **Comchip** SMD Diode Specialist

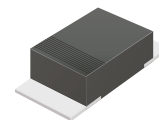
## CGRMT4004-HF Thru. CGRMT4007-HF

Reverse Voltage: 50 to 1000 Volts

Forward Current: 1.0 Amp

RoHS Device

Halogen Free

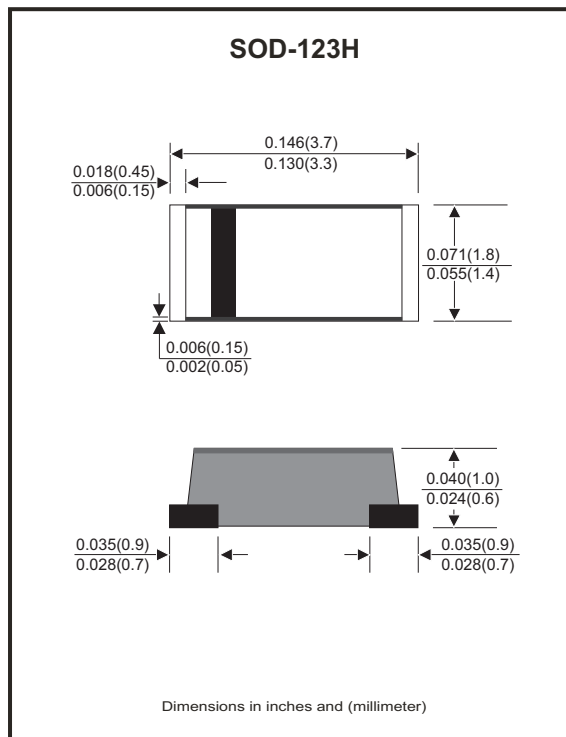


### Features

- Excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- Tiny plastic SMD package.
- High current capability.
- High surge capability.
- Glass passivated chip junction.
- Lead-free parts meet environmental standards of MIL-STD-19500/228

### Mechanical data

- Epoxy: UL94V-0 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 and Electrical Characteristics (at T<sub>A</sub>=25°C unless otherwise noted)

| Parameter                                                                                              | Symbol           | CGRMT<br>4004-HF                                       | CGRMT<br>4005-HF | CGRMT<br>4007-HF | Unit |
|--------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------|------------------|------------------|------|
| Max. Repetitive peak reverse voltage                                                                   | V <sub>RRM</sub> | 400                                                    | 600              | 1000             | V    |
| Max. Continuous reverse voltage                                                                        | V <sub>R</sub>   | 400                                                    | 600              | 1000             | V    |
| Max. RMS voltage                                                                                       | V <sub>RMS</sub> | 280                                                    | 420              | 700              | V    |
| Max. Averaged forward current                                                                          | I <sub>O</sub>   | 1.0                                                    |                  |                  | A    |
| Max. Forward voltage<br>@ I <sub>F</sub> =1.0A                                                         | V <sub>F</sub>   | 1.1                                                    |                  |                  | V    |
| Max. Forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC method) | I <sub>FSM</sub> | 25                                                     |                  |                  | A    |
| Max. Reverse current                                                                                   | I <sub>R</sub>   | V <sub>R</sub> =V <sub>RRM</sub> T <sub>J</sub> =25°C  | 5.0              |                  | μA   |
|                                                                                                        |                  | V <sub>R</sub> =V <sub>RRM</sub> T <sub>J</sub> =125°C | 50               |                  |      |
| Typ. Thermal resistance, junction to<br>ambient air                                                    | R <sub>θJA</sub> | 60                                                     |                  |                  | °C/W |
| Typ. Junction capacitance<br>f=1MHz and applied 4V DC reverse voltage                                  | C <sub>J</sub>   | 15                                                     |                  |                  | pF   |
| Operating junction temperature                                                                         | T <sub>J</sub>   | -55 to +150                                            |                  |                  | °C   |
| Storage temperature range                                                                              | T <sub>STG</sub> | -65 to +175                                            |                  |                  | °C   |

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## Rating and Characteristic Curves (CGRMT4004-HF Thru. CGRMT4007-HF)

Fig.1 - Typical Forward Current Derating Curve

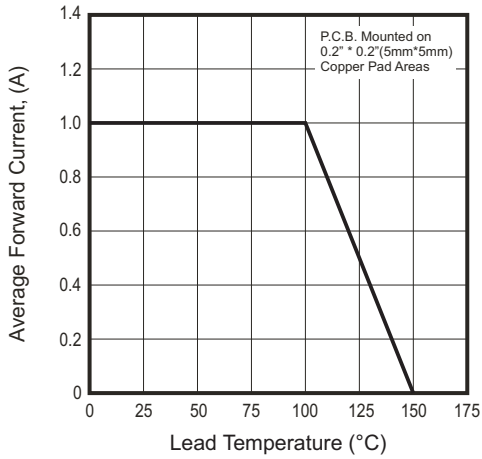


Fig.2 - Typical Forward Characteristics

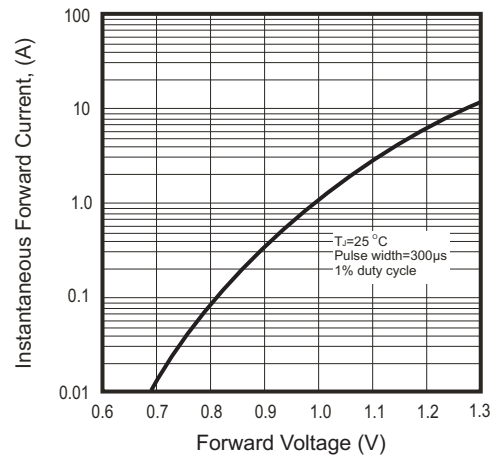


Fig.3 - Maximum Non-repetitive Forward Surge Current

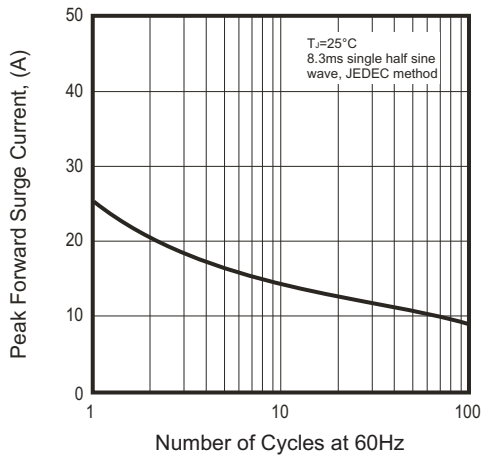


Fig.4 - Typical Junction Capacitance

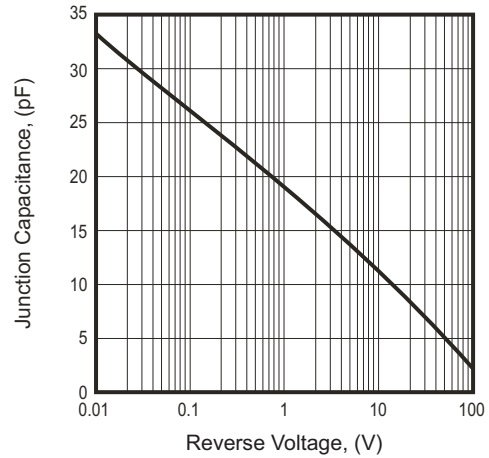
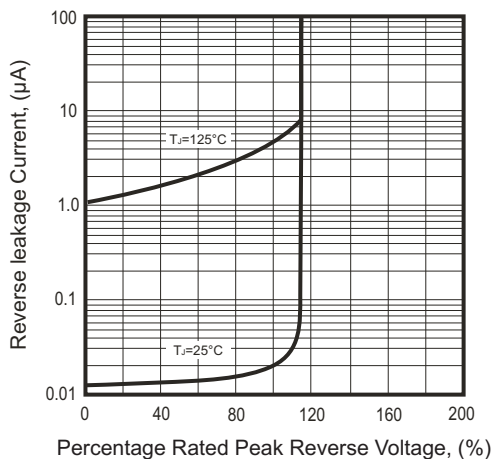
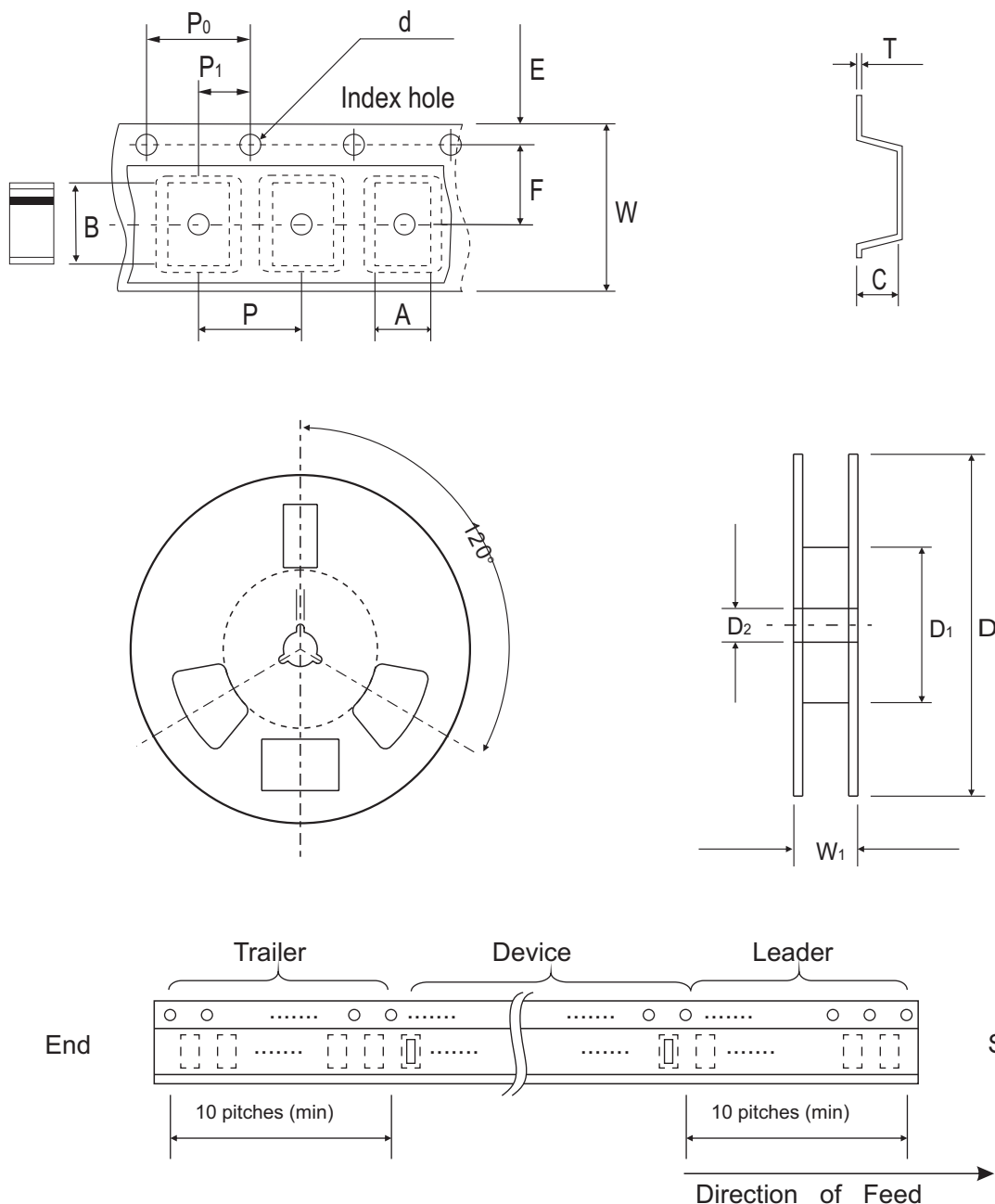


Fig.5 - Typical Reverse Characteristics



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## 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   | 178.00 ± 2.00 | 62.00 (min) | 13.00 ± 0.50  |
|          | (inch) | 0.079 ± 0.004 | 0.152 ± 0.004 | 0.043 ± 0.004 | 0.059 ± 0.004 | 7.007 ± 0.079 | 2.441 (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 ± 1.00  |
|          | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.009 ± 0.04 | 0.315 ± 0.012 | 0.449 ± 0.039 |

# Low Profile SMD General Purpose Rectifiers **Comchip** SMD Diode Specialist

## Pinning information

| Pin                          | Simplified outline                                                                | Symbol                                                                             |
|------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| PIN 1 Cathode<br>PIN 2 Anode |  |  |

## Marking Code

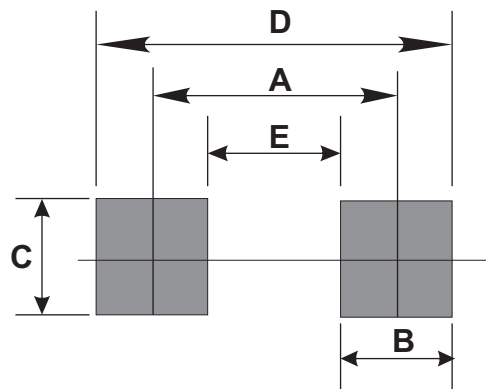
| Part Number  | Marking Code |
|--------------|--------------|
| CGRMT4004-HF | A4           |
| CGRMT4005-HF | A5           |
| CGRMT4007-HF | A7           |



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 Packaging

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