

## ACGRAT101-HF Thru. ACGRAT105-HF

Glass Passivated Type

Reverse Voltage: 200 to 1000 Volts

Forward Current: 1.0 Amp

RoHS Device

Halogen Free

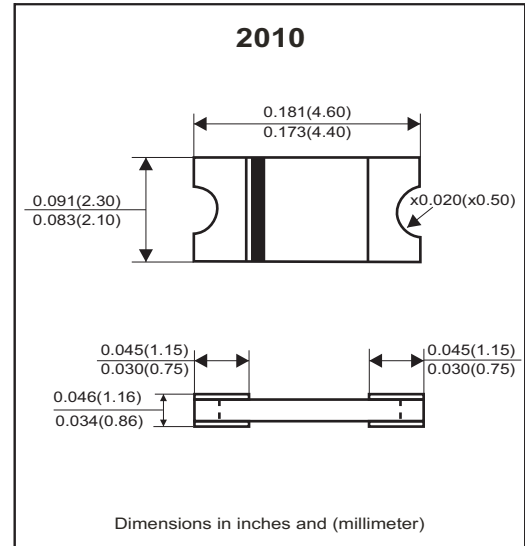


### Features

- Glass passivated cavity-free junction.
- Lead less chip form, no lead damage.
- Low forward voltage drop.
- Plastic package has UL 94V-0.
- Comply with AEC-Q101

### Mechanical data

- Case: Packed with FRP substrate and epoxy underfilled.
- Terminals: Pure Tin plated (Lead-Free), solderable per MIL-STD-750, method 2026.
- Polarity: Cathode Band, Laser marking.
- Weight: 0.02 grams(approx).



### Circuit Diagram



### Absolute Maximum Ratings (at Ta=25°C unless otherwise noted)

| Parameter  | Symbol      | ACGRAT 101-HF | ACGRAT 102-HF | ACGRAT 103-HF | ACGRAT 104-HF | ACGRAT 105-HF | Units |    |
|--|-------------|---------------|---------------|---------------|---------------|---------------|-------|----|
| Repetitive peak reverse voltage  | $V_{RRM}$   | 200           | 400           | 600           | 800           | 1000          | V     |    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$   | 30            |               |               |               |               |       | A  |
| Average forward current  | $I_{F(AV)}$ | 1.0           |               |               |               |               |       | A  |
| Operating junction temperature   | $T_J$       | -65 to +175   |               |               |               |               |       | °C |
| Storage temperature  | $T_{STG}$   | -65 to +175   |               |               |               |               |       | °C |

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

| Parameter                       | Conditions                                     | Symbol          | MIN. | TYP. | MAX. | Unit |
|---------------------------------|--|-----------------|------|------|------|------|
| Forward voltage                 | $I_F = 1.0A$                                   | $V_F$           | -    | 0.95 | 1    | V    |
| Repetitive peak reverse current | $V_R = \text{Max. } V_{RRM}, T_A = 25^\circ C$ | $I_{RRM}$       | -    | 0.10 | 5    | uA   |
| Junction capacitance            | $V_R = 4V, f = 1.0MHz$                         | $C_J$           | -    | 8    | -    | pF   |
| Thermal Resistance              | Junction to ambient (Note)                     | $R_{\theta JA}$ | -    | 65   | -    | °C/W |
|                                 | Junction to lead (Note)                        | $R_{\theta JL}$ | -    | 15   | -    |      |

Notes: Thermal resistance from junction to ambient and from junction to lead P.C.B. mounted on 0.2x0.2"(5.0\*5.0mm) copper pad areas.

## RATING AND CHARACTERISTIC CURVES (ACGRAT101-HF thru. ACGRAT105-HF)

FIG.1 - FORWARD CURRENT DERATING CURVE

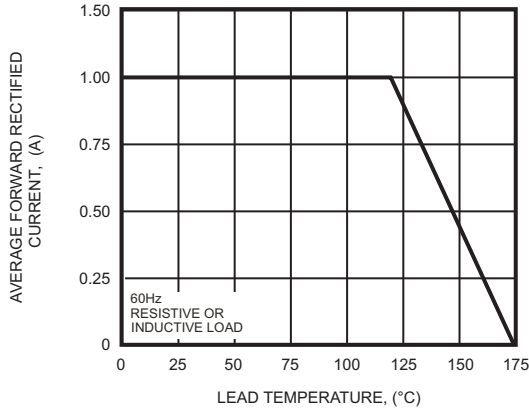


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

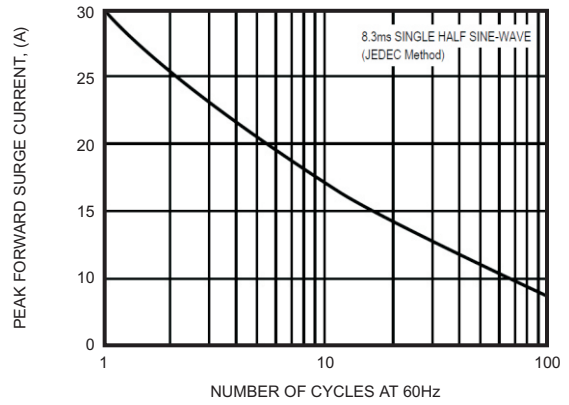


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

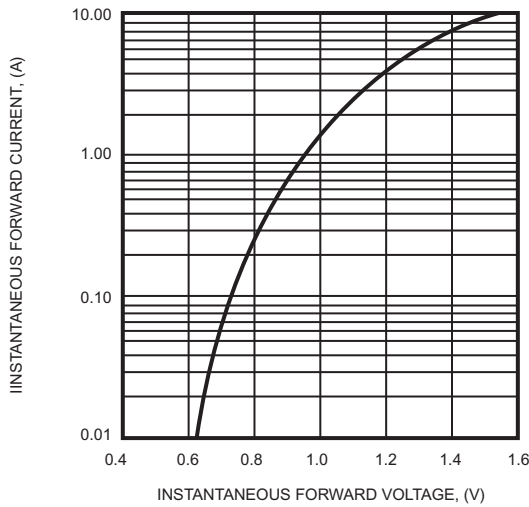


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

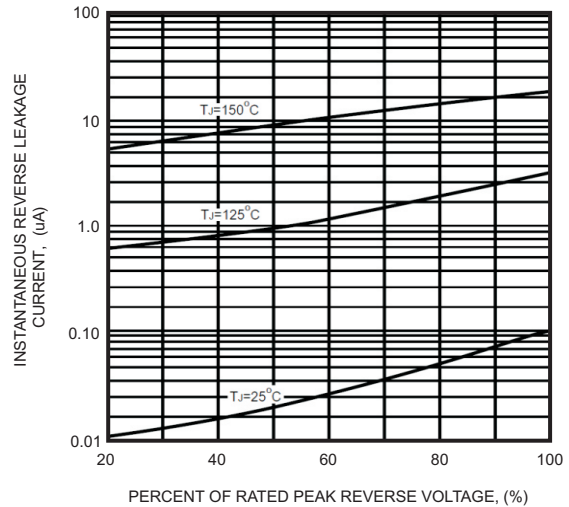
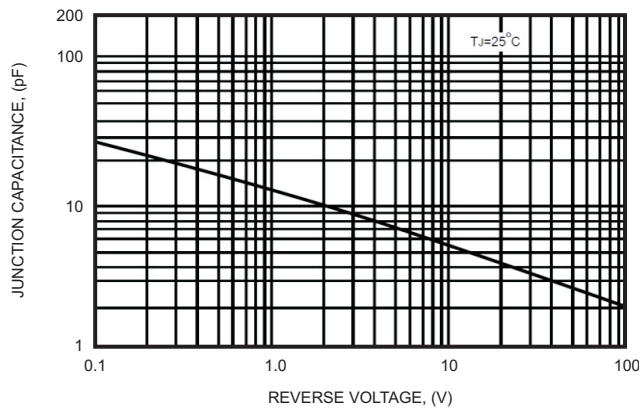
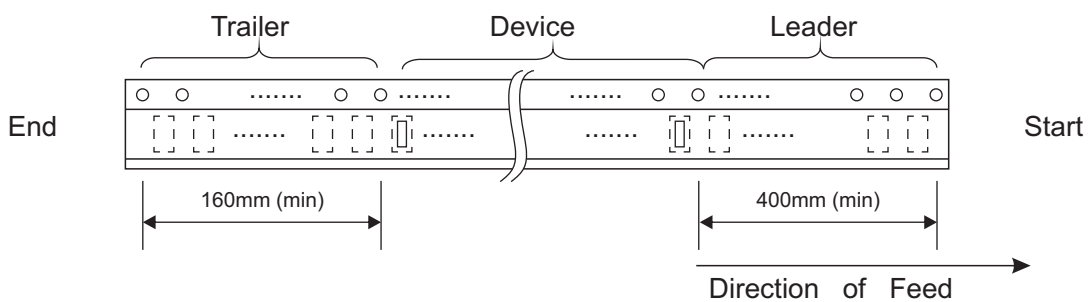
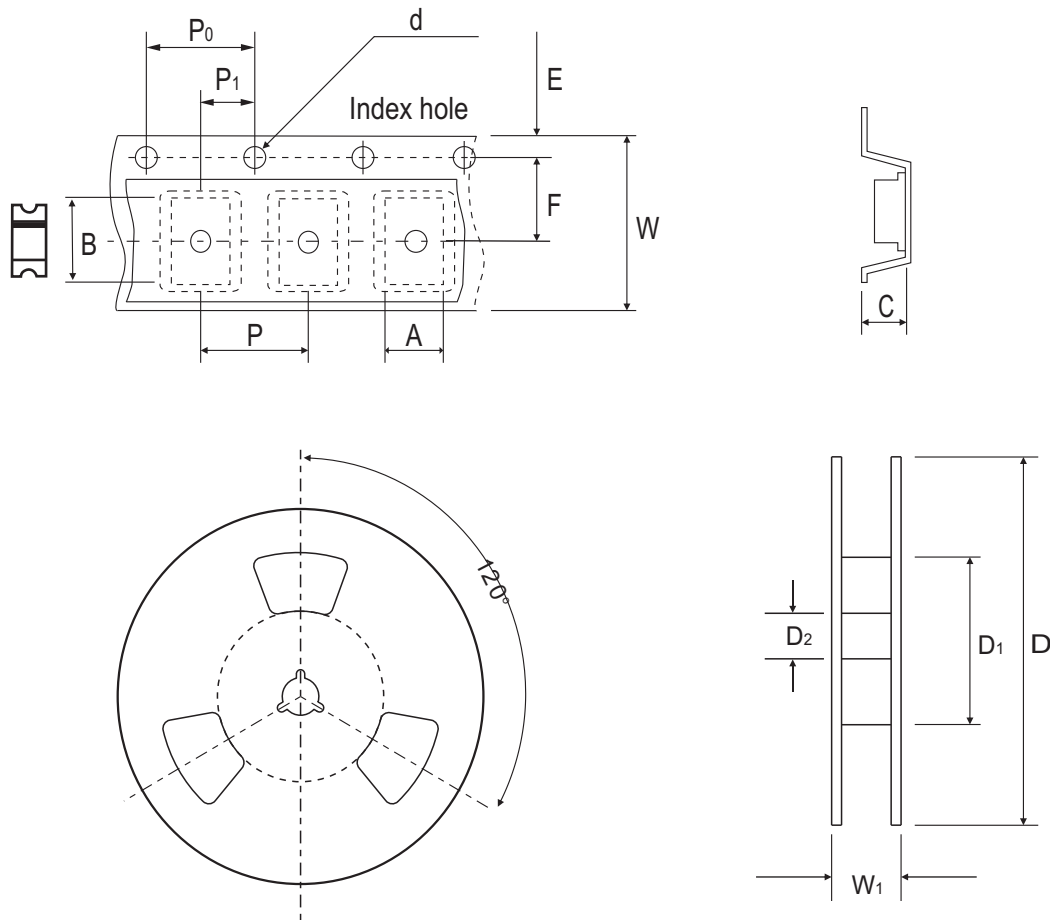


FIG.5 - TYPICAL JUNCTION CAPACITANCE



## Reel Taping Specification



|      |        |               |               |               |               |               |                |                |
|------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
| 2010 | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|      | (mm)   | 4.75 ± 0.10   | 2.45 ± 0.10   | 1.30 ± 0.10   | 1.50 ± 0.10   | 178.00 ± 2.00 | 50.00 MIN.     | 13.00 ± 0.50   |
|      | (inch) | 0.187 ± 0.004 | 0.096 ± 0.004 | 0.051 ± 0.004 | 0.059 ± 0.004 | 7.008 ± 0.079 | 1.969 MIN.     | 0.512 ± 0.020  |

|      |        |               |               |               |                |                |               |                |
|------|--------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|
| 2010 | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W             | W <sub>1</sub> |
|      | (mm)   | 1.75 ± 0.10   | 5.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 12.00 ± 0.30  | 18.70 MAX.     |
|      | (inch) | 0.069 ± 0.004 | 0.217 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.472 ± 0.012 | 0.736 MAX.     |

## Marking Code

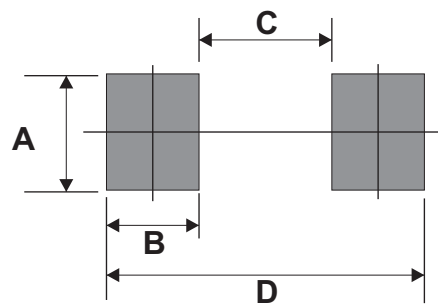
| Part Number  | Marking Code |
|--------------|--------------|
| ACGRAT101-HF | 10D          |
| ACGRAT102-HF | 10G          |
| ACGRAT103-HF | 10J          |
| ACGRAT104-HF | 10K          |
| ACGRAT105-HF | 10M          |



**XXX = Product type marking code**

## Suggested PAD Layout

| SIZE     | 2010     |            |
|----------|----------|------------|
|          | (mm)     | (inch)     |
| <b>A</b> | 1.47MIN. | 0.058MIN.  |
| <b>B</b> | 1.27MIN. | 0.050MIN.  |
| <b>C</b> | 2.60MAX. | 0.102MAX.  |
| <b>D</b> | 5.14REF. | 0.202 REF. |



## Standard Packaging

| Case Type   | REEL PACK    |                  |
|-------------|--------------|------------------|
|             | REEL ( pcs ) | Reel Size (inch) |
| <b>2010</b> | 3,000        | 7                |