

# ACGRAT101L-HF Thru. ACGRAT105L-HF

Glass Passivated Type

Reverse Voltage: 200 to 1000 Volts

Forward Current: 1.0 Amp

RoHS Device

Halogen Free

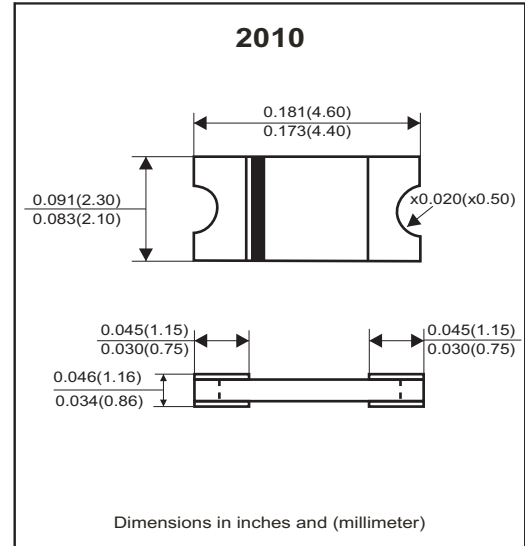


## Features

- 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, 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 101L-HF | ACGRAT 102L-HF | ACGRAT 103L-HF | ACGRAT 104L-HF | ACGRAT 105L-HF | Units |
|--|--------------------|----------------|----------------|----------------|----------------|----------------|-------|
| Repetitive peak reverse voltage  | V <sub>RRM</sub>   | 200            | 400            | 600            | 800            | 1000           | V     |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | I <sub>FSM</sub>   | 40             |                |                |                |                | A     |
| Average forward current  | I <sub>F(AV)</sub> | 1.0            |                |                |                |                | A     |
| Operating junction temperature   | T <sub>J</sub>     | -65 to +175    |                |                |                |                | °C    |
| Storage temperature  | T <sub>STG</sub>   | -65 to +175    |                |                |                |                | °C    |

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

| Parameter                       | Conditions   | Symbol           | MIN. | TYP. | MAX. | Unit |
|---------------------------------|--|------------------|------|------|------|------|
| Forward voltage                 | I <sub>F</sub> = 1.0A  | V <sub>F</sub>   | -    | 0.91 | 0.93 | V    |
| Repetitive peak reverse current | V <sub>R</sub> = Max. V <sub>RRM</sub> , T <sub>A</sub> = 25°C | I <sub>RRM</sub> | -    | 0.08 | 5    | uA   |
| Junction capacitance            | V <sub>R</sub> = 4V, f = 1.0MHz                                | C <sub>J</sub>   | -    | 8.2  | -    | pF   |
| Thermal Resistance              | Junction to ambient (Note)                                     | R <sub>θJA</sub> | -    | 70   | -    | °C/W |
|                                 | Junction to lead (Note)  | R <sub>θJL</sub> | -    | 8    | -    |      |

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

Company reserves the right to improve product design, functions and reliability without notice.

REV: B

## RATING AND CHARACTERISTIC CURVES (ACGRAT101L-HF thru ACGRAT105L-HF)

FIG.1 - FORWARD CURRENT DERATING CURVE

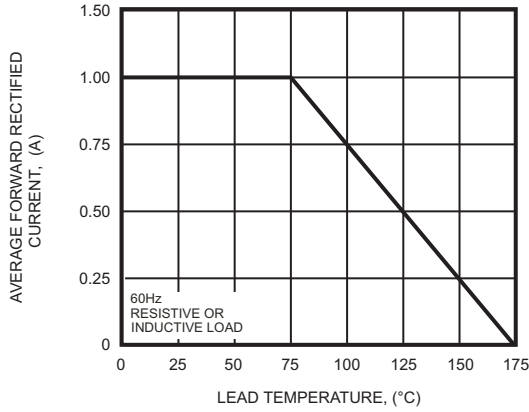


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

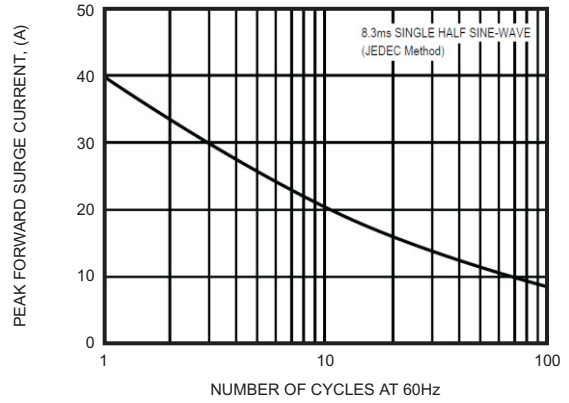


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

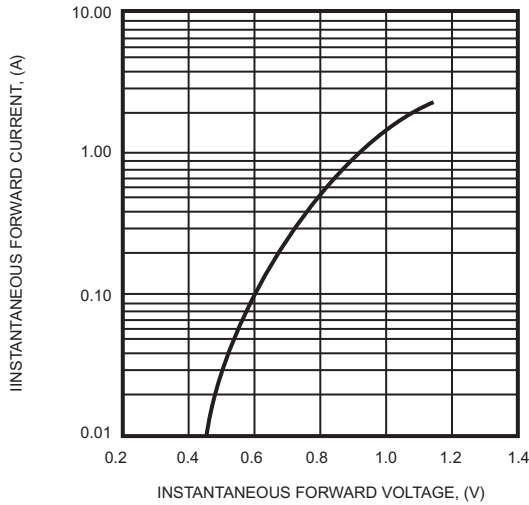


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

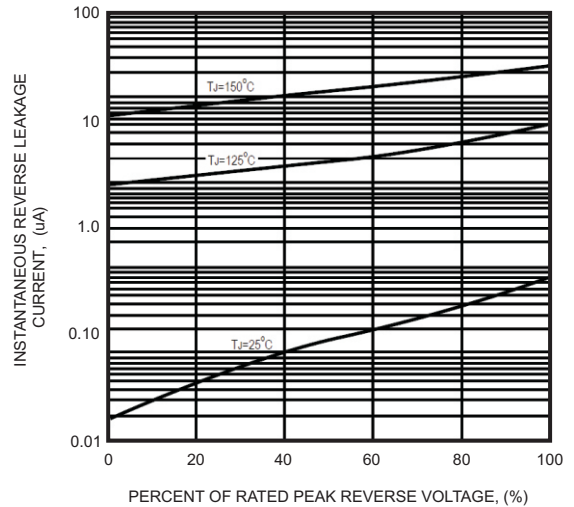
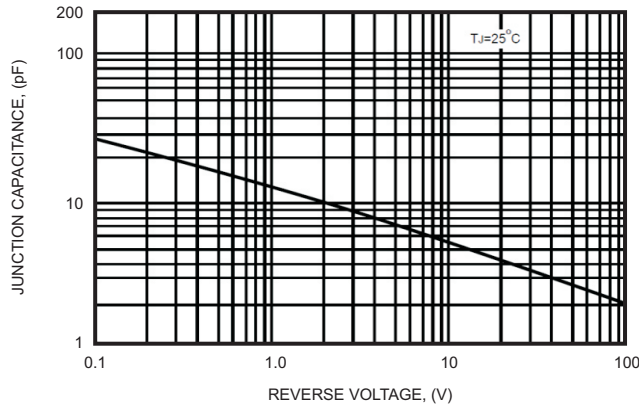
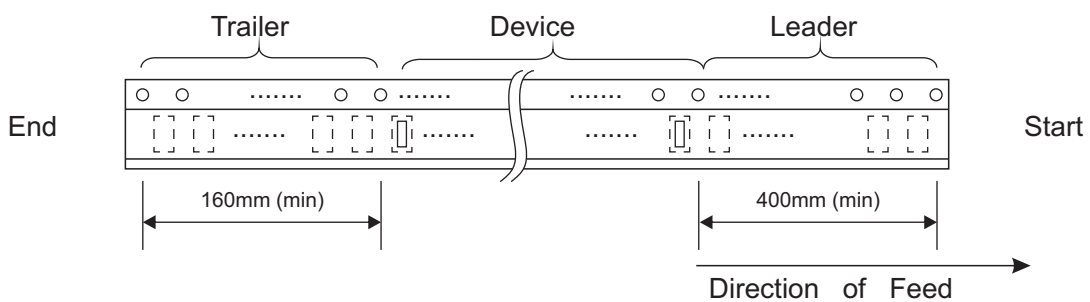
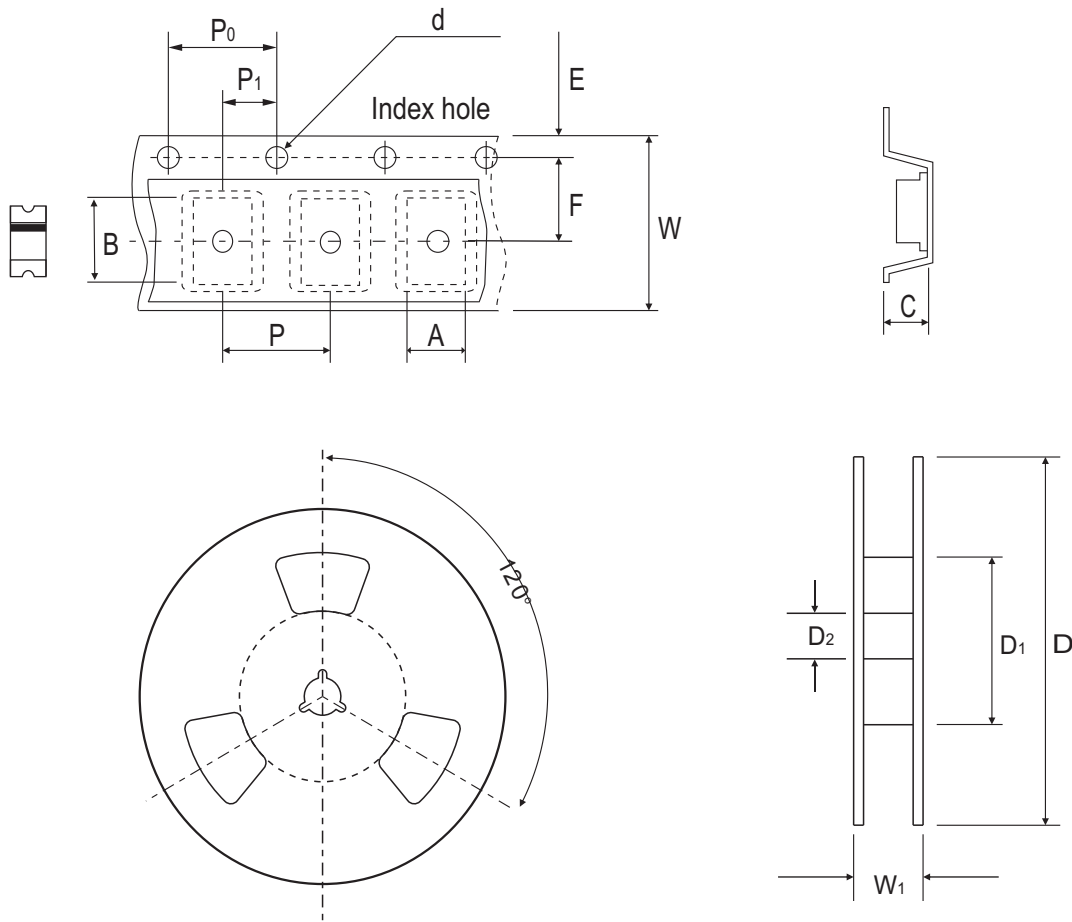


FIG.5 - TYPICAL JUNCTION CAPACITANCE



## 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

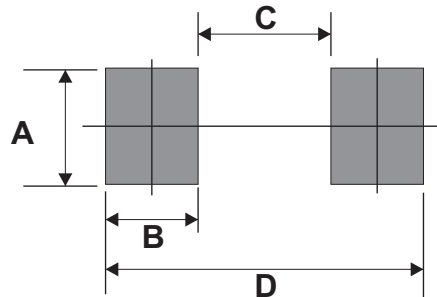
| Part Number   | Marking Code |
|---------------|--------------|
| ACGRAT101L-HF | 10D          |
| ACGRAT102L-HF | 10G          |
| ACGRAT103L-HF | 10J          |
| ACGRAT104L-HF | 10K          |
| ACGRAT105L-HF | 10M          |



XXX = Product type marking code

## Suggested PAD Layout

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



## Standard Packaging

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

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