

## ACDBCT320-HF Thru. ACDBCT3100-HF

Forward current: 3.0A

Reverse voltage: 20 to 100V

RoHS Device

Halogen Free

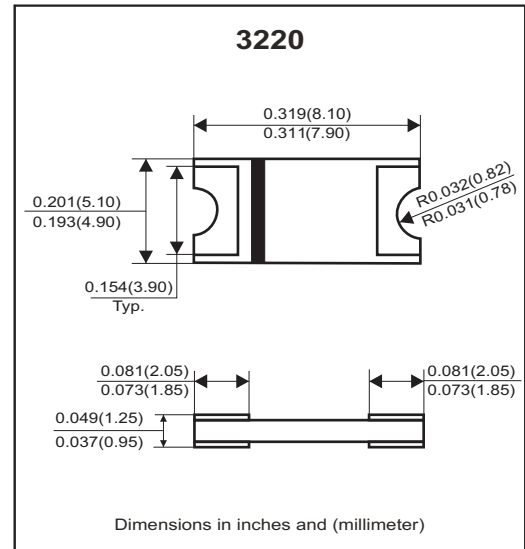


### Features

- Lead less chip form, no lead damage.
- Low power loss, High efficiency.
- High current capability, low  $V_F$
- 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: Laser cathode band marking.
- Weight: 0.093 grams (approx).



### Circuit diagram



### Maximum Ratings (At $T_a=25^\circ\text{C}$ , unless otherwise noted)

| Parameter   | Symbol      | ACDBCT320-HF | ACDBCT340-HF | ACDBCT360-HF | ACDBCT3100-HF | Unit             |
|---|-------------|--------------|--------------|--------------|---------------|------------------|
| Non-repetitive peak reverse voltage                     | $V_{RM}$    | 20           | 40           | 60           | 100           | V                |
| Average forward current                                 | $I_{F(AV)}$ | 3            |              |              |               | A                |
| Peak forward surge current @8.3ms single half sine-wave | $I_{FSM}$   | 100          |              |              |               | A                |
| Operating junction temperature range                    | $T_J$       | -55 to +125  |              | -55 to +150  |               | $^\circ\text{C}$ |
| Storage temperature                                     | $T_{STG}$   | -55 ~ +150   |              |              |               | $^\circ\text{C}$ |

### Electrical Characteristics (At $T_a=25^\circ\text{C}$ , unless otherwise noted)

| Parameter                    | Conditions  | Type                         | Symbol          | Min. | Typ.  | Max. | Unit               |
|------------------------------|---|------------------------------|-----------------|------|-------|------|--------------------|
| Forward voltage (Note1)      | $I_F=0.5\text{A}$<br>$I_F=1.0\text{A}$<br>$I_F=3.0\text{A}$ | ACDBCT320-HF<br>ACDBCT340-HF | $V_F$           | -    | 0.33  | -    | V                  |
|                              |   |                              |                 | -    | 0.38  | -    |                    |
|                              |   |                              |                 | -    | 0.47  | 0.50 |                    |
|                              | $I_F=0.5\text{A}$<br>$I_F=1.0\text{A}$<br>$I_F=3.0\text{A}$ | ACDBCT360-HF                 |                 | -    | 0.38  | -    |                    |
|                              |   |                              |                 | -    | 0.48  | -    |                    |
|                              |   |                              |                 | -    | 0.65  | 0.70 |                    |
|                              | $I_F=0.5\text{A}$<br>$I_F=1.0\text{A}$<br>$I_F=3.0\text{A}$ | ACDBCT3100-HF                |                 | -    | 0.48  | -    |                    |
|                              |   |                              |                 | -    | 0.58  | -    |                    |
|                              |   |                              |                 | -    | 0.78  | 0.85 |                    |
| Reverse peak reverse current | $V_R=\text{Max. } V_{RRM}, T_a=25^\circ\text{C}$            |                              | $I_{RRM}$       | -    | 0.025 | 0.5  | mA                 |
| Junction capacitance         | $V_R=4\text{V}, f=1.0\text{MHz}$                            |                              | $C_j$           | -    | 180   | -    | pF                 |
| Thermal resistance           | Junction to ambient (Note 2)                                |                              | $R_{\theta JA}$ | -    | 55    | -    | $^\circ\text{C/W}$ |
|                              | Junction to lead (Note 2)                                   |                              | $R_{\theta JL}$ | -    | 17    | -    | $^\circ\text{C/W}$ |

Notes: (1) Pulse test width  $p_w=300\mu\text{sec}$ , 1% duty cycle.

(2) Mounted on P.C. board with  $0.2 \times 0.2 \text{ (} 5.0 \times 5.0 \text{ mm)}$  copper pad areas.

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

REV:C

## RATING AND CHARACTERISTIC CURVES (ACDBCT320-HF Thru. ACDBCT3100-HF)

Fig.1 - Typical Forward Current Derating Curve

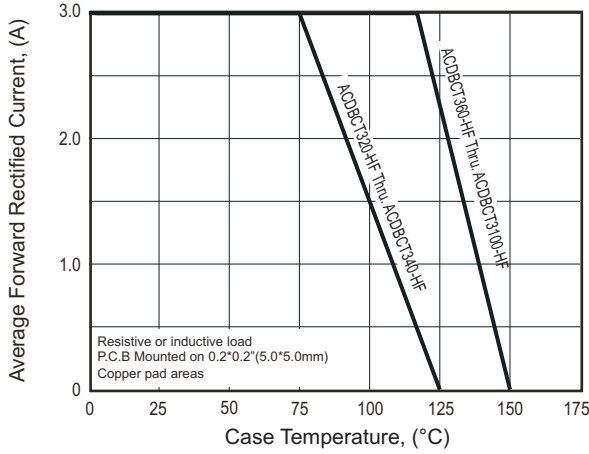


Fig.2 - Maximum Non-Repetitive Peak Forward Surge Current

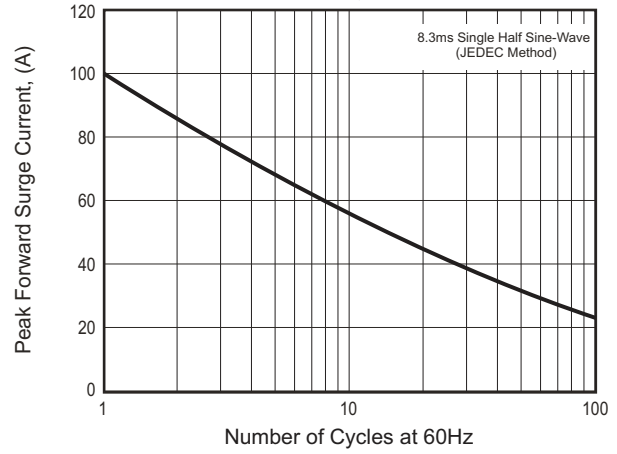


Fig.3 - Typical Instantaneous Forward Characteristics

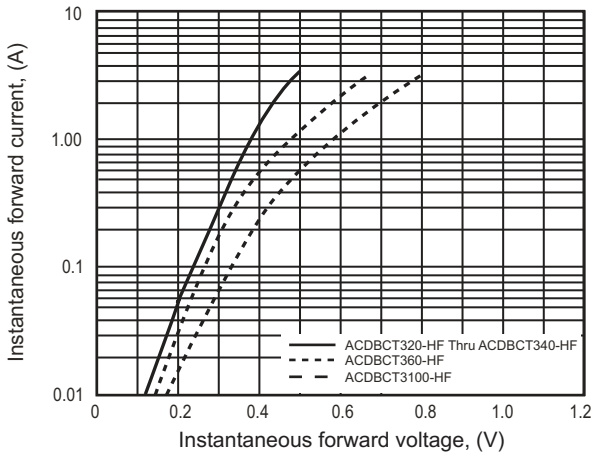


Fig.4 - Typical Reverse Characteristics

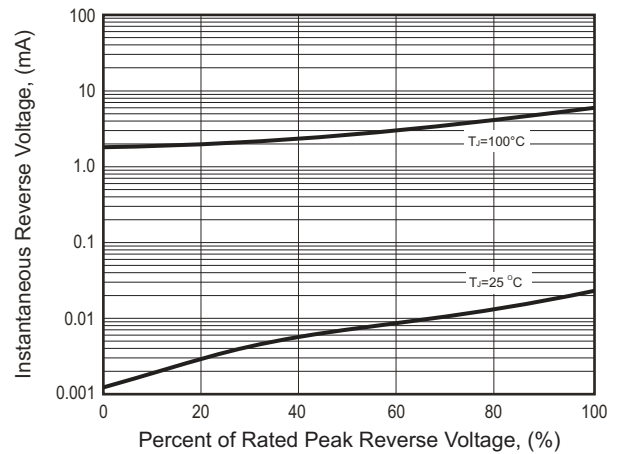
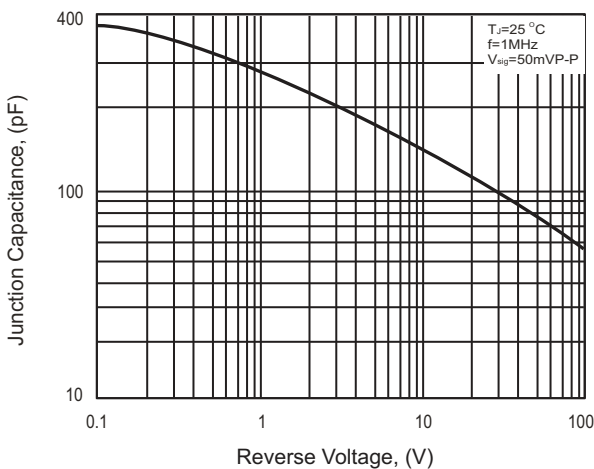
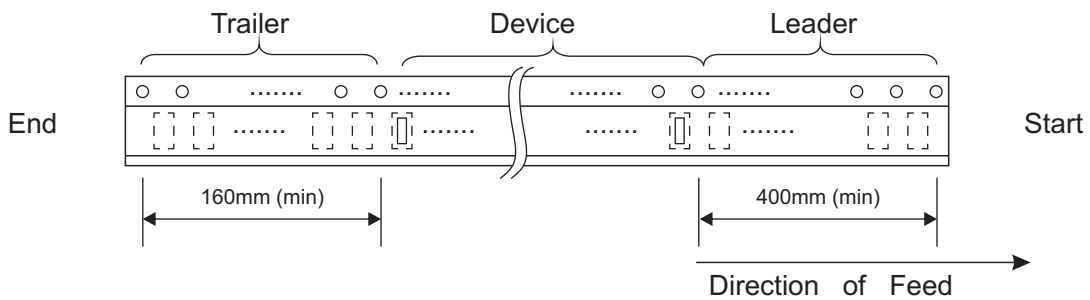
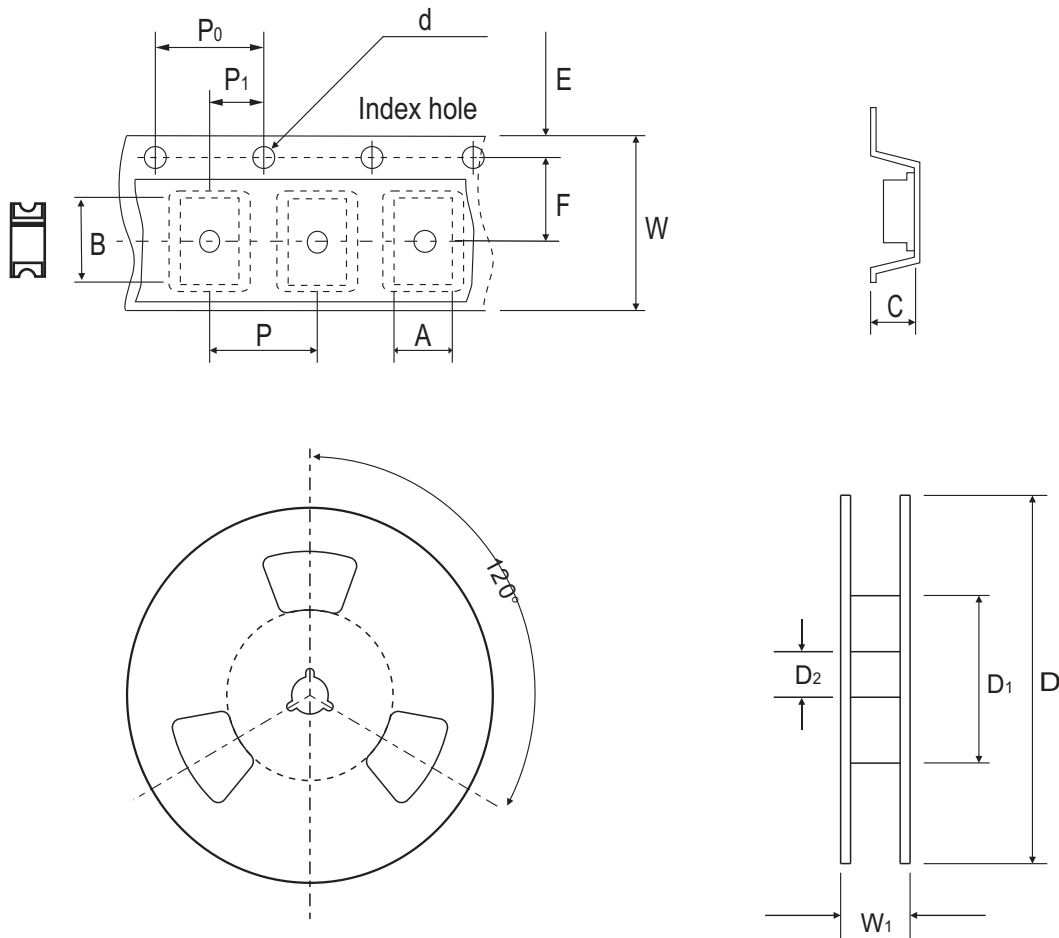


Fig.5 - Typical Junction Capacitance



## Reel Taping Specification

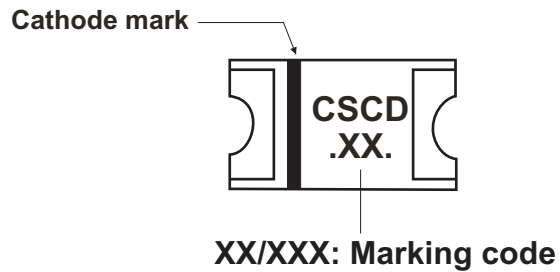


| 3220 | SYMBOL | A             | B             | C             | d             | D              | D <sub>1</sub> | D <sub>2</sub> |
|------|--------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
|      | (mm)   | 5.56 ± 0.10   | 8.18 ± 0.10   | 2.16 ± 0.10   | 1.55 ± 0.05   | 330 ± 2.00     | 50.0 MIN.      | 13.0 ± 0.50    |
|      | (inch) | 0.219 ± 0.004 | 0.322 ± 0.004 | 0.085 ± 0.004 | 0.061 ± 0.002 | 12.992 ± 0.079 | 1.969 MIN.     | 0.512 ± 0.020  |

| 3220 | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W             | W <sub>1</sub> |
|------|--------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|
|      | (mm)   | 1.75 ± 0.10   | 7.50 ± 0.10   | 8.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 16.00 ± 0.30  | 22.70 MAX.     |
|      | (inch) | 0.069 ± 0.004 | 0.295 ± 0.004 | 0.315 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.630 ± 0.012 | 0.893 MAX.     |

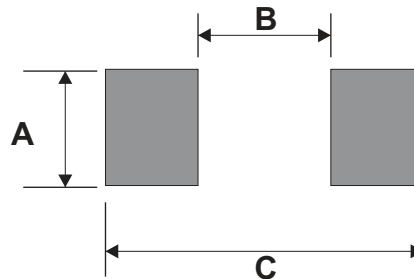
## Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| ACDBCT320-HF  | 32           |
| ACDBCT340-HF  | 34           |
| ACDBCT360-HF  | 36           |
| ACDBCT3100-HF | 310          |



## Suggested PAD Layout

| SIZE | 3220      |            |
|------|-----------|------------|
|      | (mm)      | (inch)     |
| A    | 3.90MIN.  | 0.154MIN.  |
| B    | 4.10MAX.  | 0.161MAX.  |
| C    | 11.90REF. | 0.469 REF. |



## Standard Packaging

| Case Type | REEL PACK    |                  |
|-----------|--------------|------------------|
|           | REEL ( pcs ) | Reel Size (inch) |
| 3220      | 3,000        | 13               |