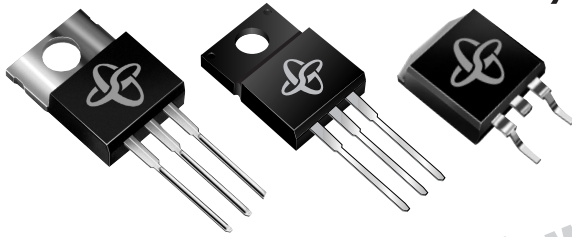


## UG10GCT, UGF10GCT, UGB10GCT Series

### Dual Ultrafast Soft Recovery Rectifier

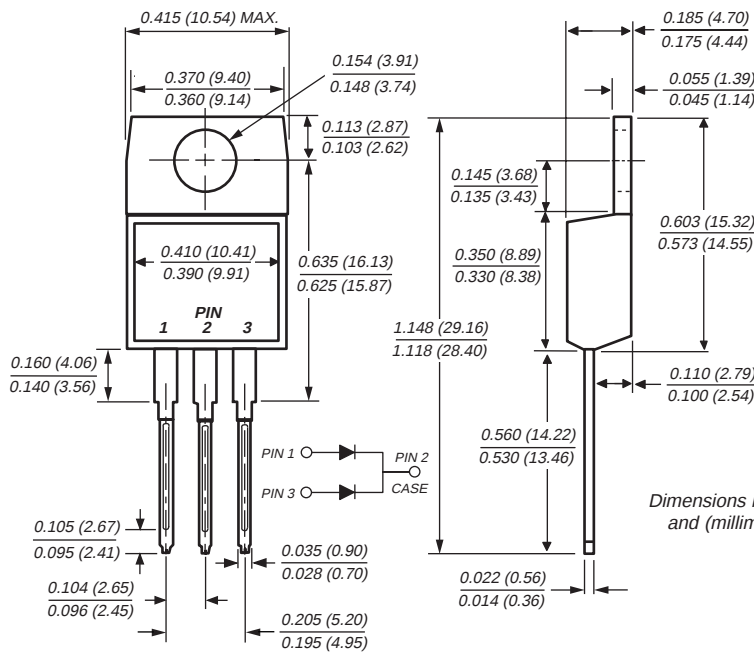
Reverse Voltage 300 to 400V Forward Current 10A

Reverse Recovery Time 35ns

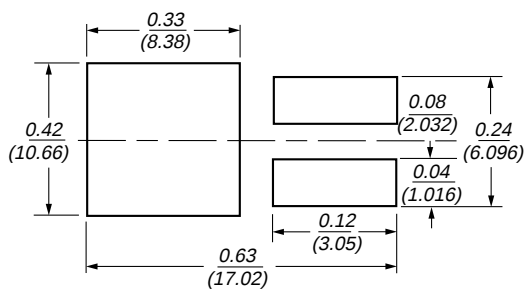


*New Product*

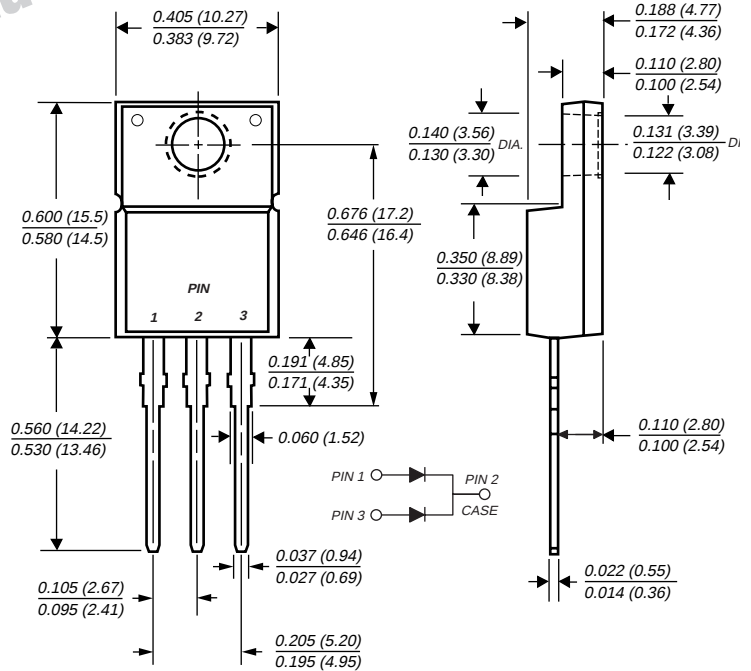
**TO-220AB (BYT28, UG10 Series)**



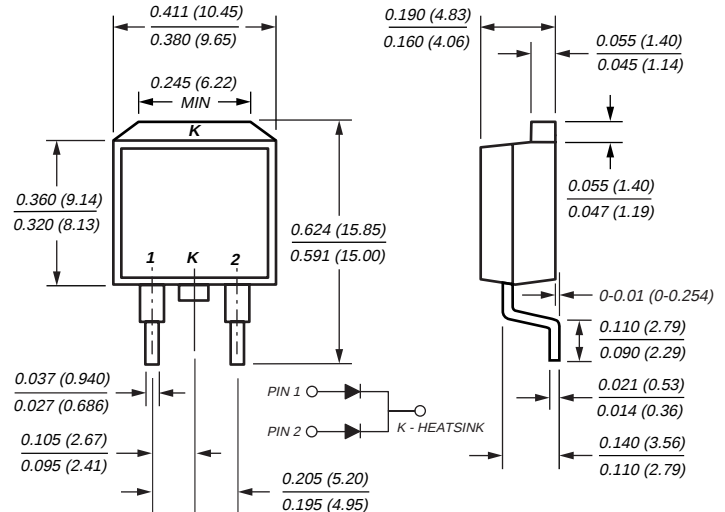
**Mounting Pad Layout TO-263AB**



**ITO-220AB (BYT28F, UGF10 Series)**



**TO-263AB (BYT28B, UGB10 Series)**



## Mechanical Data

**Case:** JEDEC TO-220AB, ITO-220AB & TO-263AB molded plastic body

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

**Polarity:** As marked

**Mounting Position:** Any

**Mounting Torque:** 10 in-lbs maximum

**Weight:** 0.08 ounce, 2.24 grams

## Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for free wheeling diode power factor correction applications
- Soft recovery characteristics
- Excellent high temperature switching
- Optimized to reduce switching losses
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Glass passivated chip junction

# BYT28, BYT28F, BYT28B

## UG10GCT, UGF10GCT, UGB10GCT Series

### Dual Ultrafast Soft Recovery Rectifiers

#### Maximum Ratings (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter                                                                                                      | Symbol                            | UG10FCT                                                           | UG10GCT   | Unit |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------|-----------|------|
|                                                                                                                |                                   | BYT28-300                                                         | BYT28-400 |      |
| Maximum repetitive peak reverse voltage                                                                        | V <sub>RRM</sub>                  | 300                                                               | 400       | V    |
| Working peak reverse voltage                                                                                   | V <sub>RWM</sub>                  | 300                                                               | 400       | V    |
| Maximum RMS voltage                                                                                            | V <sub>RMS</sub>                  | 210                                                               | 280       |      |
| Maximum DC blocking voltage                                                                                    | V <sub>DC</sub>                   | 300                                                               | 400       | V    |
| Maximum average forward rectified current at T <sub>C</sub> = 100°C                                            | I <sub>F(AV)</sub>                | 10<br>5                                                           |           | A    |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method) per leg | I <sub>FSM</sub>                  | 60                                                                |           | A    |
| Operating junction and storage temperature range                                                               | T <sub>J</sub> , T <sub>STG</sub> | -40 to +150                                                       |           | °C   |
| RMS Isolation voltage (BYT28F, UGF types)<br>from terminals to heatsink with t = 1 second, RH ≤ 30%            | V <sub>ISOL</sub>                 | 4500 <sup>(1)</sup><br>3500 <sup>(2)</sup><br>1500 <sup>(3)</sup> |           | V    |

#### Electrical Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter                                                                                                                                                                                                         | Symbol          | Value                | Unit |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|------|
| Maximum instantaneous forward voltage per leg <sup>(4)</sup><br>at I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C<br>at I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C<br>at I <sub>F</sub> = 5A, T <sub>J</sub> = 150°C | V <sub>F</sub>  | 1.30<br>1.40<br>1.05 | V    |
| Maximum reverse current per leg<br>at V <sub>RRM</sub> <sup>(4)</sup> T <sub>J</sub> = 25°C<br>T <sub>J</sub> = 100°C                                                                                             | I <sub>R</sub>  | 10<br>200            | μA   |
| Maximum reverse recovery time per leg at<br>I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A                                                                                                 | t <sub>rr</sub> | 35                   | ns   |
| Maximum reverse recovery time per leg at<br>I <sub>F</sub> = 1.0A, di/dt = 100A/μs, V <sub>R</sub> = 30V, I <sub>rr</sub> = 0.1 I <sub>RM</sub>                                                                   | t <sub>rr</sub> | 50                   | ns   |
| Maximum reverse recovery current per leg at<br>I <sub>F</sub> = 5A, di/dt = 50A/μs, V <sub>R</sub> = 30V, T <sub>C</sub> = 100°C                                                                                  | I <sub>RM</sub> | 3.0                  | A    |
| Maximum stored charge per leg<br>I <sub>F</sub> = 2A, di/dt = 20A/μs, V <sub>R</sub> = 30V, I <sub>rr</sub> = 0.1 I <sub>RM</sub>                                                                                 | Q <sub>rr</sub> | 50                   | nC   |

#### Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

| Parameter                                   | Symbol           | UG10  | UGF10  | UGB10  | Unit |
|---------------------------------------------|------------------|-------|--------|--------|------|
|                                             |                  | BYT28 | BYT28F | BYT28B |      |
| Typical thermal resistance junction to case | R <sub>θJC</sub> | 4.5   | 6.7    | 4.5    | °C/W |

#### Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

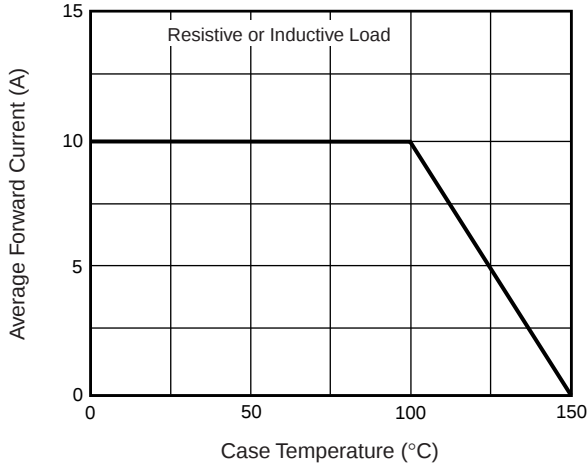
# BYT28, BYT28F, BYT28B

## UG10GCT, UGF10GCT, UGB10GCT Series

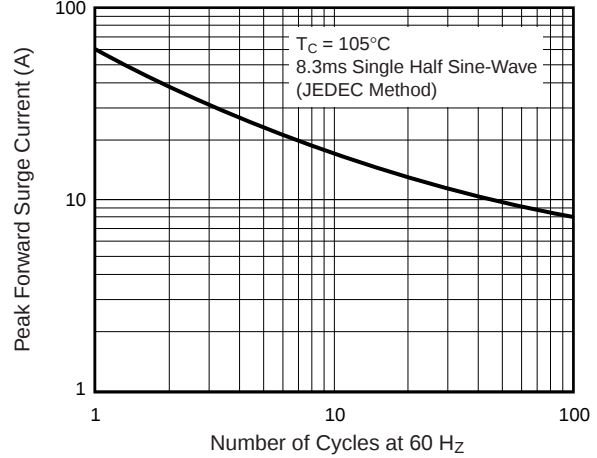
### Dual Ultrafast Soft Recovery Rectifiers

#### Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

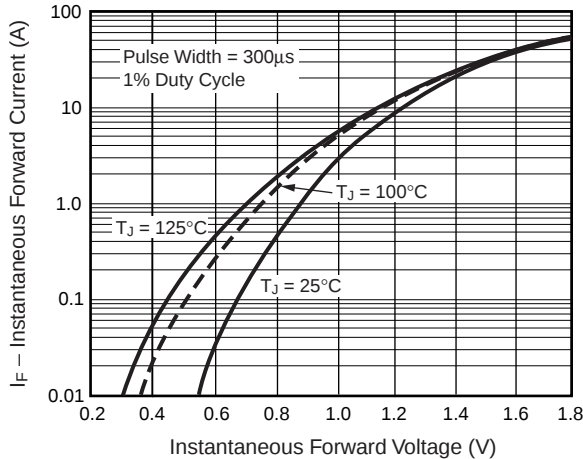
**Fig 1 — Forward Current  
Derating Curve**



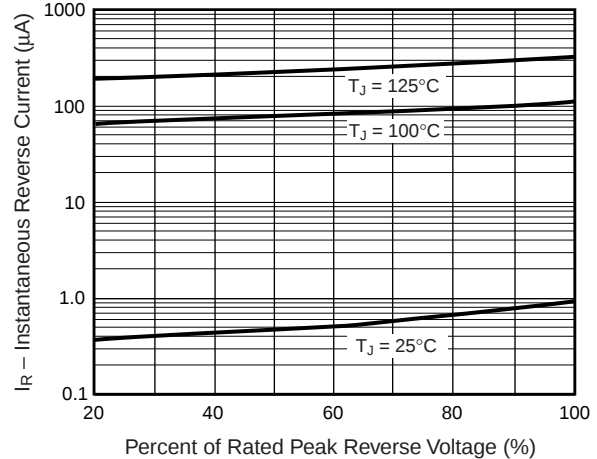
**Fig 2 — Maximum Non-Repetitive  
Peak Forward Surge Current Per Leg**



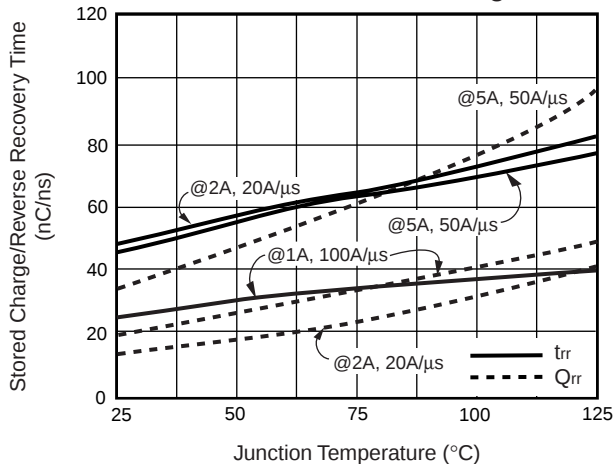
**Fig 3 — Typical Instantaneous  
Forward Characteristics Per Leg**



**Fig 4 — Typical Reverse  
Characteristics Per Leg**



**Fig 5 — Reverse Switching  
Characteristics Per Leg**



**Fig 6 — Typical Junction  
Capacitance Per Leg**

