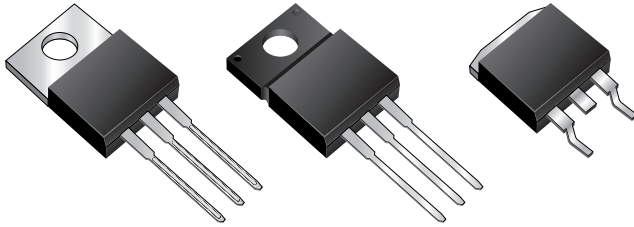




BYQ28E, BYQ28EF, BYQ28EB, UG10DCT, UGF10DCT, UGB10DCT Series

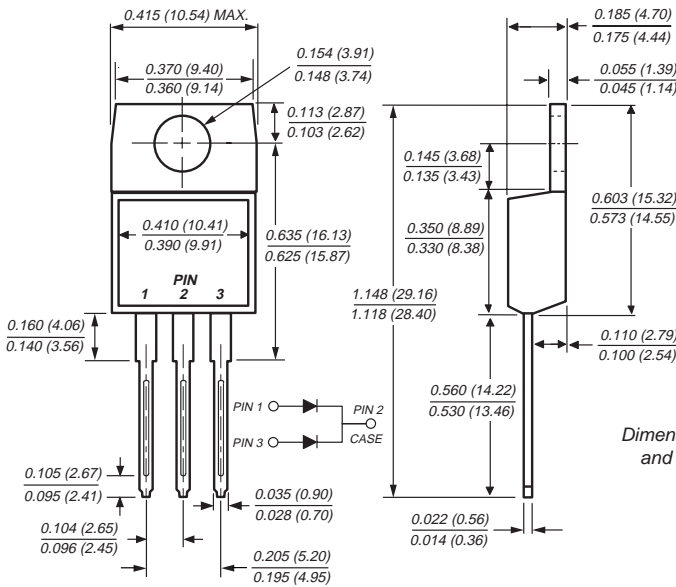
Vishay Semiconductors
formerly General Semiconductor

Dual Ultrafast Soft Recovery Rectifiers

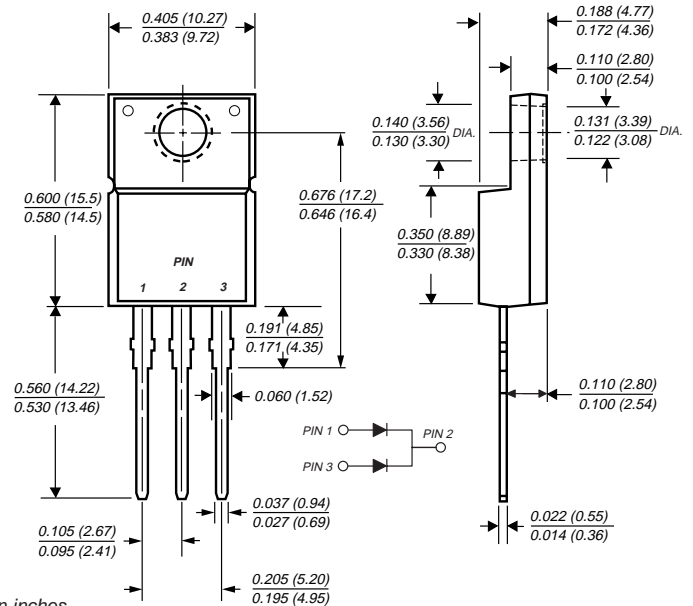


Reverse Voltage 100 to 200 V
Forward Current 10 A
Reverse Recovery Time 20ns

TO-220AB (BYQ28E, UG10 Series)

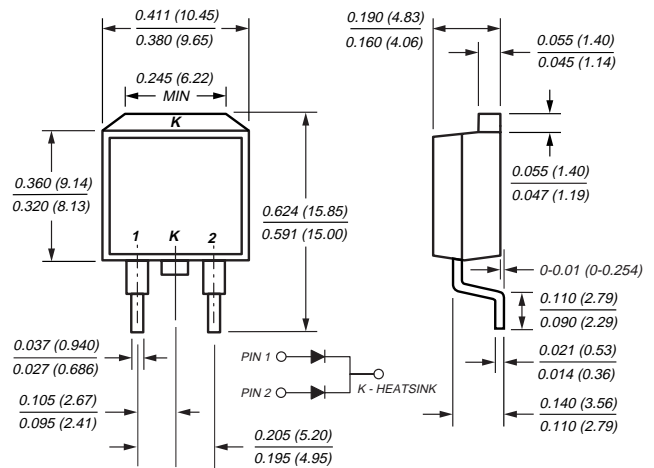


ITO-220AB (BYQ28EF, UGF10 Series)

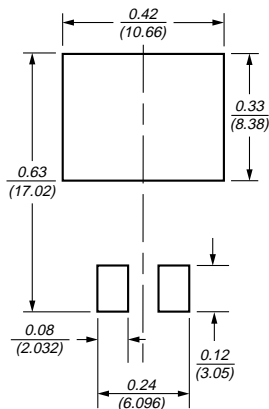


Dimensions in inches and millimeters

TO-263AB (BYQ28EB, UGB10 Series)



Mounting Pad Layout TO-263AB



Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High reverse energy capability
- Excellent high temperature switching
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- Glass passivated chip junction
- Soft recovery characteristics

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 oz., 2.24 g

Maximum Ratings (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | UG10BCT | UG10CCT | UG10DCT | Unit |
|--|-----------------------------------|---|------------|------------|------|
| | | BYQ28E-100 | BYQ28E-150 | BYQ28E-200 | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 100 | 150 | 200 | V |
| Working peak reverse voltage | V _{RWM} | 100 | 150 | 200 | V |
| Maximum DC blocking voltage | V _{DC} | 100 | 150 | 200 | V |
| Maximum average forward rectified current at T _C = 100°C | I _{F(AV)} | 10 5 | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg | I _{FSM} | 55 | | | A |
| Non-repetitive peak reverse current per leg at t _p = 100µs | I _{RSM} | 0.2 | | | A |
| Electrostatic discharge capacitor voltage, Human body model: C = 250pF, R = 1.5kΩ | V _C | 8 | | | KV |
| Operating junction and storage temperature range | T _J , T _{STG} | -40 to +150 | | | °C |
| RMS Isolation voltage (BYQ28EF, UGF types) from terminals to heatsink with t = 1 second, RH ≤ 30% | V _{ISOL} | 4500 (NOTE 1) 3500 (NOTE 2) 1500 (NOTE 3) | | | V |

Electrical Characteristics (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------|-----------------------|------|
| Maximum instantaneous forward voltage per leg (Note 4) at I _F = 10A, T _J = 25°C at I _F = 5A, T _J = 25°C at I _F = 5A, T _J = 150°C | V _F | 1.25 1.10 0.895 | V |
| Maximum reverse current per leg at working peak reverse voltage (Note 4) | I _R | 10 200 | µA |
| Maximum reverse recovery time per leg at I _F = 1.0A, di/dt = 100A/µs, V _R = 30V, I _{rr} = 0.1 I _{RM} | t _{rr} | 25 | ns |
| Maximum reverse recovery time per leg at I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A | t _{rr} | 20 | ns |
| Maximum stored charge per leg I _F = 2A, di/dt = 20A/µs, V _R = 30V, I _{rr} = 0.1 I _{RM} | Q _{rr} | 9 | nC |

Thermal Characteristics (T_C = 25°C unless otherwise noted)

| Parameter | Symbol | UG10 | UGF10 | UGB10 | Unit |
|---|------------------|--------|---------|---------|------|
| | | BYQ28E | BYQ28EF | BYQ28EB | |
| Typical thermal resistance — junction to ambient per leg | R _{θJA} | 50 | 55 | 50 | °C/W |
| — junction to case | R _{θJC} | 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



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

