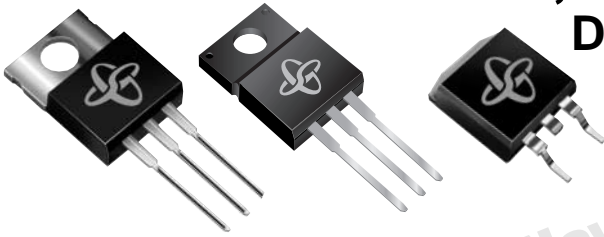


BYQ28E, BYQ28EF, BYQ28EB

UG10DCT, UGF10DCT, UGB10DCT Series

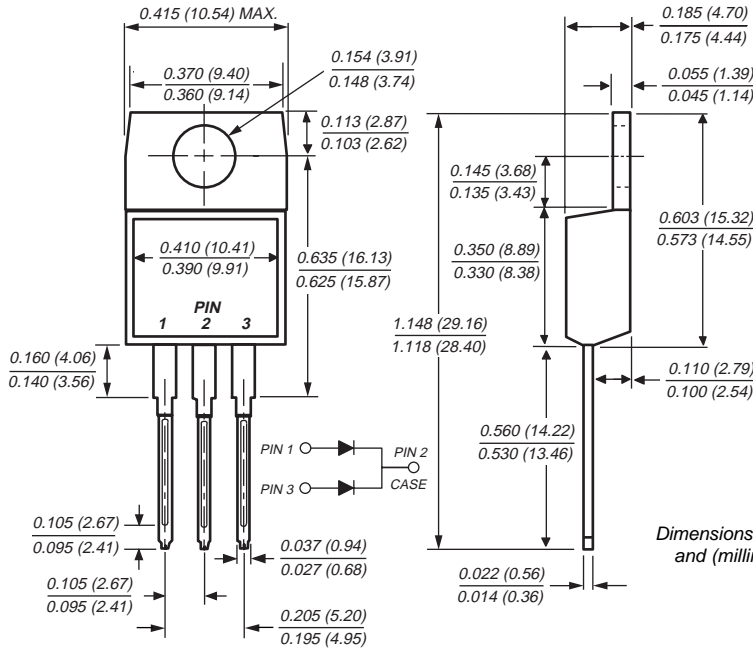
Dual Ultrafast Soft Recovery Rectifier

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

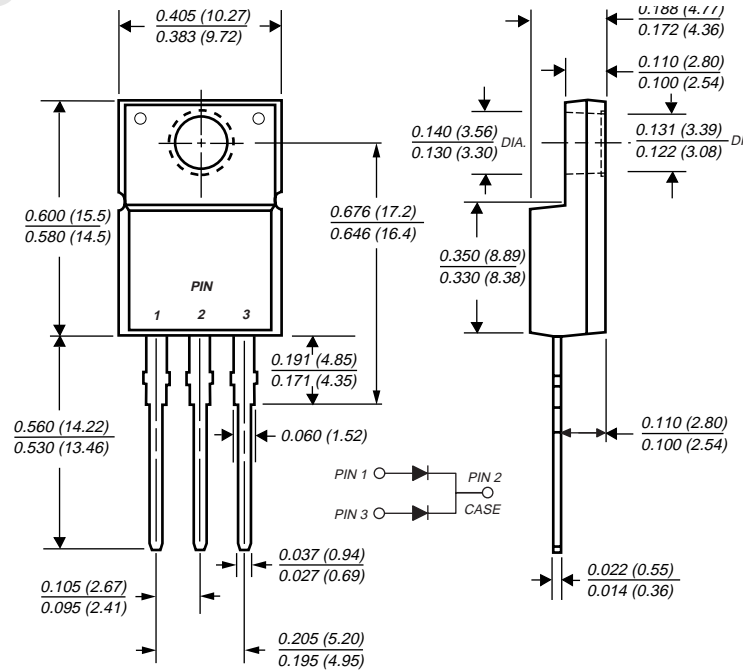


New Product

TO-220AB (BYQ28E, UG10 Series)

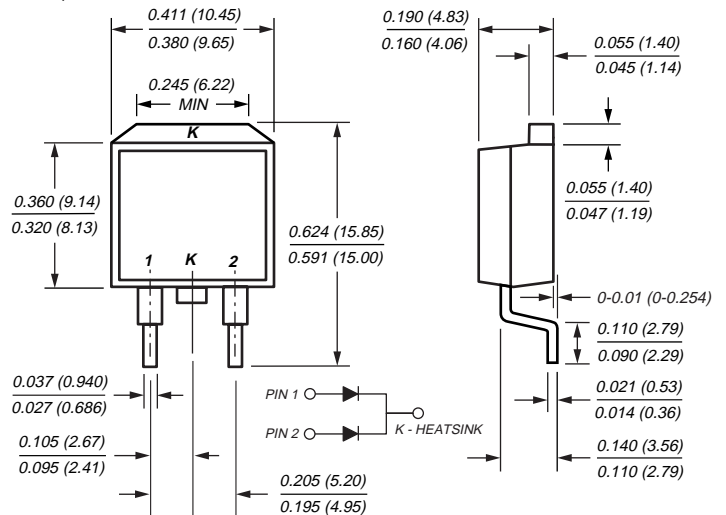


ITO-220AB (BYQ28EF, UGF10 Series)

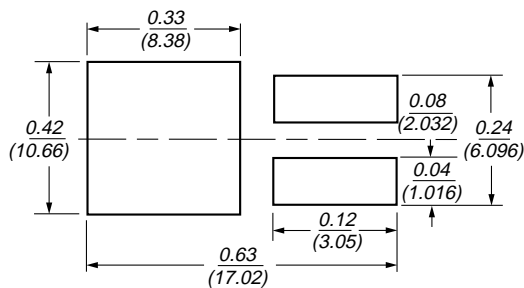


Dimensions in inches and (millimeters)

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 ounce, 2.24 grams

UG10DCT, UGF10DCT, UGB10DCT Series Ultrafast Soft Recovery Rectifier

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>Total device Per leg</i>	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
Repetitive peak reverse current per leg at t _p = 100μs	I _{RRM}	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
Non-repetitive peak reverse current per leg at t _p = 100μs	I _{RSM}	0.2			A
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) T _J = 25°C T _J = 100°C	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	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

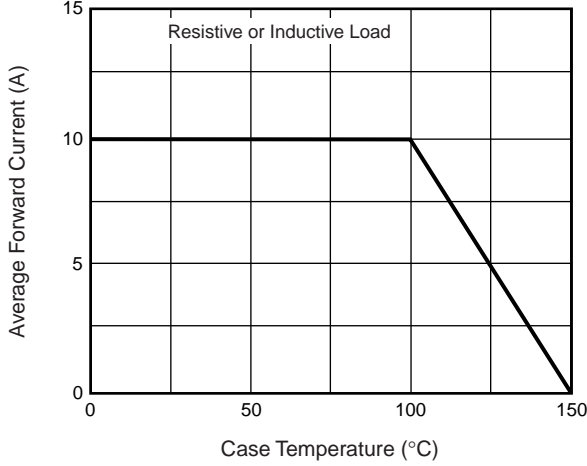
UG10DCT, UGF10DCT, UGB10DCT Series

Ratings and

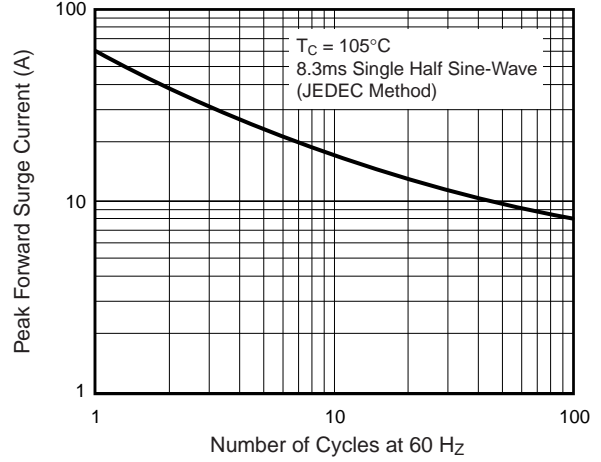
Ultrafast Soft Recovery Rectifier

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

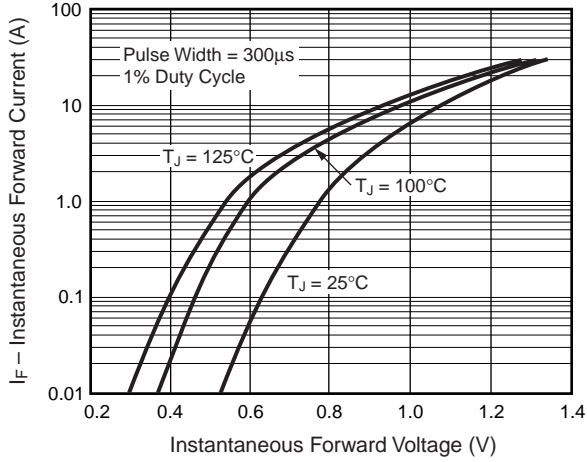
Forward Current Derating Curve



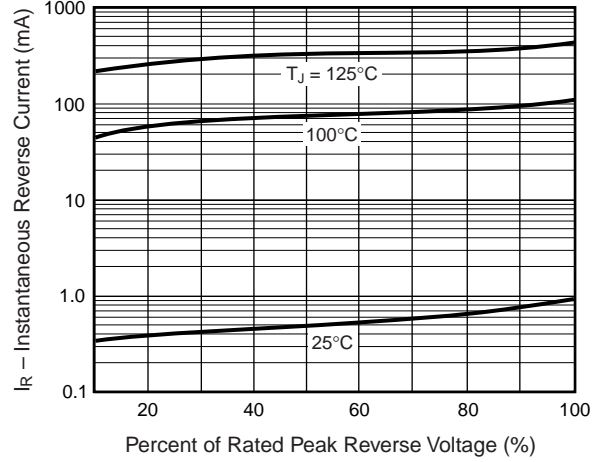
Maximum Non-Repetitive Peak Forward Surge Current Per Leg



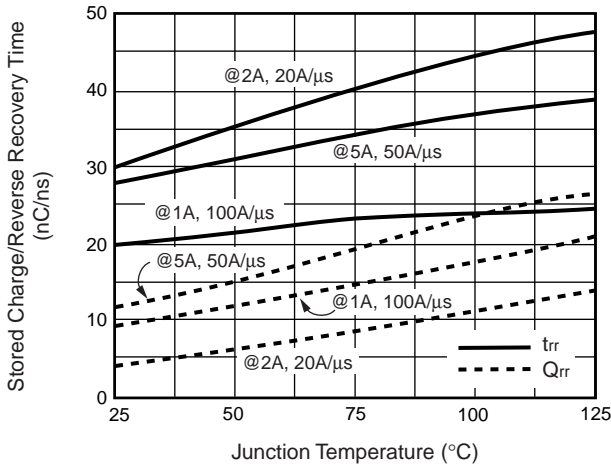
Typical Instantaneous Forward Characteristics Per Leg



Typical Reverse Characteristics Per Leg



Reverse Switching Characteristics Per Leg



Typical Junction Capacitance Per Leg

