

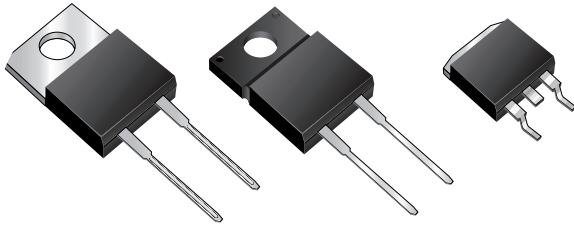


BYV29, BYV29F, BYV29B, UG8GT, UGF8GT, UGB8GT Series

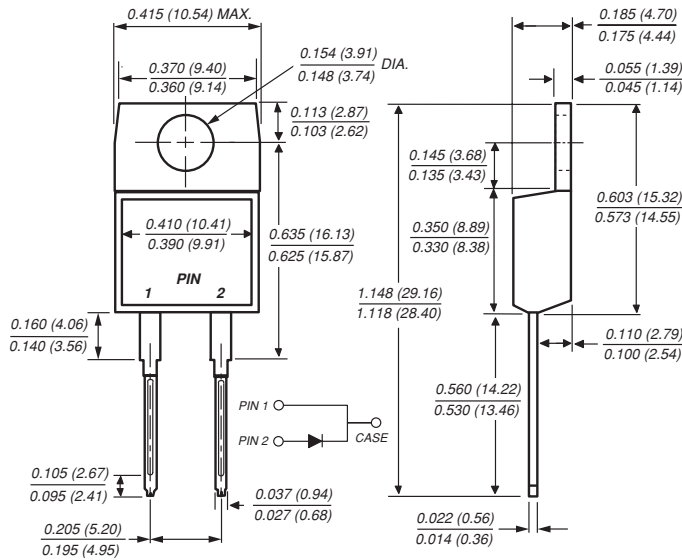
Vishay Semiconductors
formerly General Semiconductor

Ultrafast Rectifier

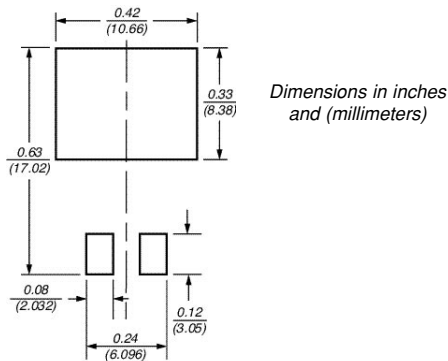
Reverse Voltage 300 to 400V
Forward Current 8.0A
Reverse Recovery Time 35ns



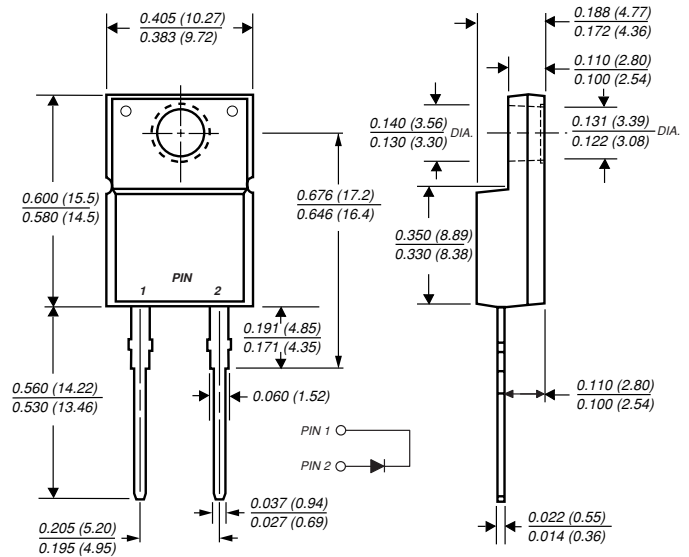
TO-220AC (BYV29, UG8 Series)



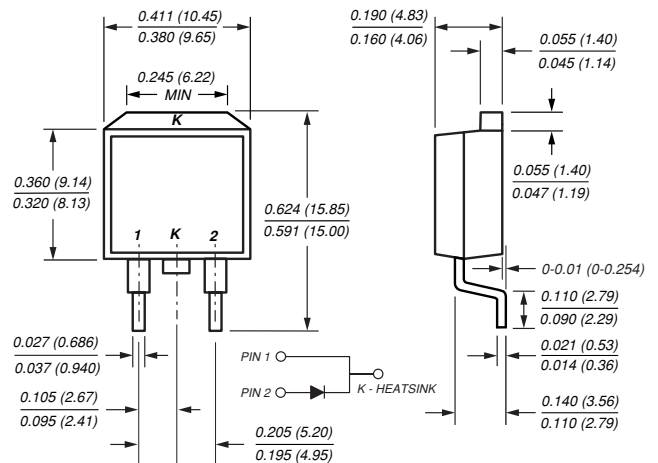
Mounting Pad Layout TO-263AB



ITO-220AC (BYV29F, UGF8 Series)



TO-263AB (BYV29B, UGB8 Series)



Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for freewheeling diode power factor correction applications
- Soft recovery characteristics
- Excellent high temperature switching
- Optimized to reduce switching losses
- High temperature soldering in accordance with CECC 802 / Reflow guaranteed
- Glass passivated chip junction

Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC & 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

BYV29, BYV29F, BYV29B, UG8GT, UGF8GT, UGB8GT Series



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

Parameter	Symbol	UG8FT	UG8GT	Unit
		BYV29-300	BYV29-400	
Maximum repetitive peak reverse voltage	V _{RRM}	300	400	V
Maximum working reverse voltage	V _{RWM}	300	400	V
Maximum RMS voltage	V _{RMS}	210	280	V
Maximum DC blocking voltage	V _{DC}	300	400	V
Maximum average forward rectified current at T _C = 100°C	I _{F(AV)}	8.0		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _C = 100°C	I _{FSM}	110		A
Operating junction and storage temperature range	T _J , T _{STG}	-40 to +150		°C
RMS Isolation voltage (UGF & BYV29F types only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V _{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾		V

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

Parameter	Symbol	UG8FT	UG8GT	Unit
		BYV29-300	BYV29-400	
Maximum instantaneous forward voltage ⁽⁴⁾ I _F = 8A, T _J = 25°C I _F = 8A, T _J = 150°C I _F = 20A, T _J = 25°C	V _F	1.25 1.03 1.40		V
Maximum DC reverse current at V _{RRM} T _C = 25°C T _C = 100°C	I _R	10 350		μA
Maximum reverse recovery time at I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A	t _{rr}	35		ns
Maximum reverse recovery time at I _F = 1.0A, di/dt = 100A/μs, V _R = 30V, I _{rr} = 0.1 I _{RM}	t _{rr}	50		ns
Maximum reverse recovery current at I _F = 10A, di/dt = 50A/μs, V _R = 30V, T _C = 100°C	I _{RM}	5.5		A
Maximum recovered stored charged at I _F = 2A, di/dt = 20A/μs, V _R = 30V, I _{rr} = 0.1 I _{RM}	Q _{rr}	55		nC

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

Parameter	Symbol	UG8	UGF8	UGB8	Unit
		BYV29	BYV29F	BYV29B	
Typical thermal resistance from junction to case	R _{θJC}	2.5	5.5	2.5	°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)

Fig. 1 – Maximum Forward Current Derating Curve

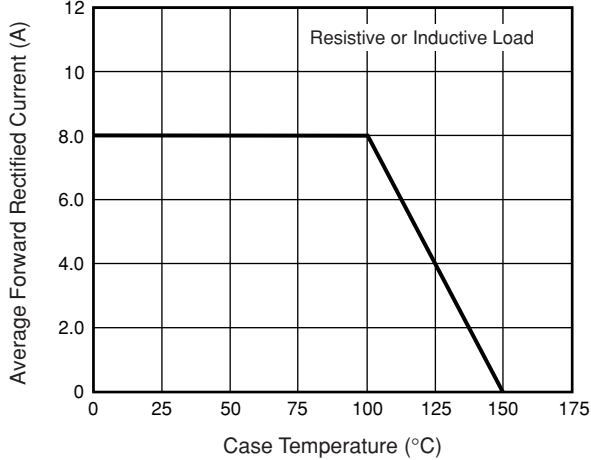


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

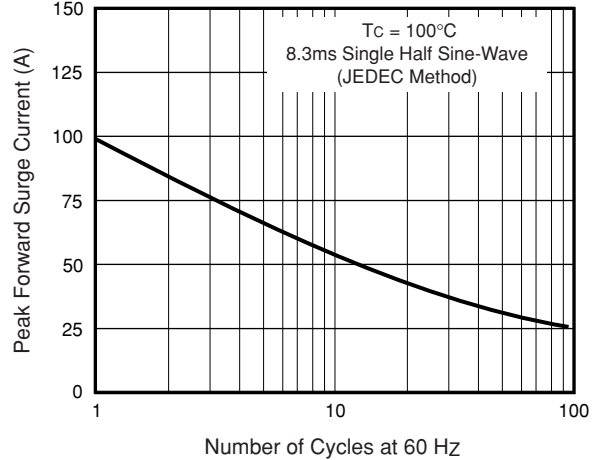


Fig. 3 – Typical Instantaneous Forward Characteristics

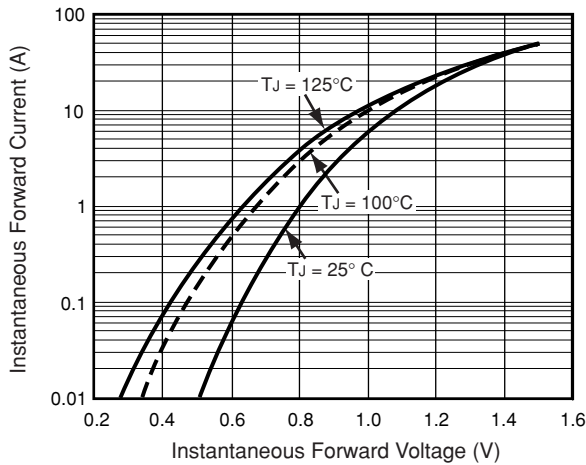


Fig. 4 – Typical Reverse Leakage Characteristics

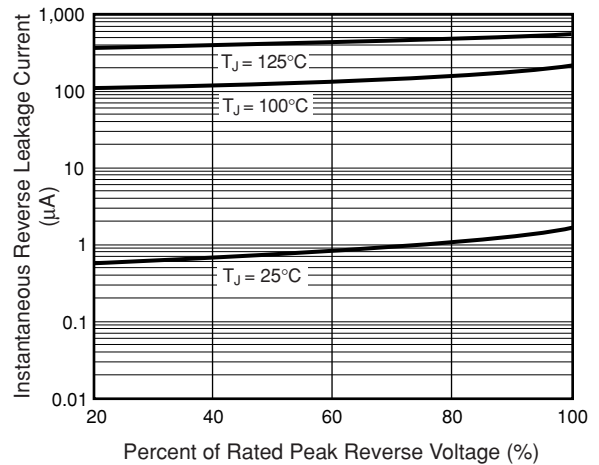


Fig 5 – Reverse Switching Characteristics Per Leg

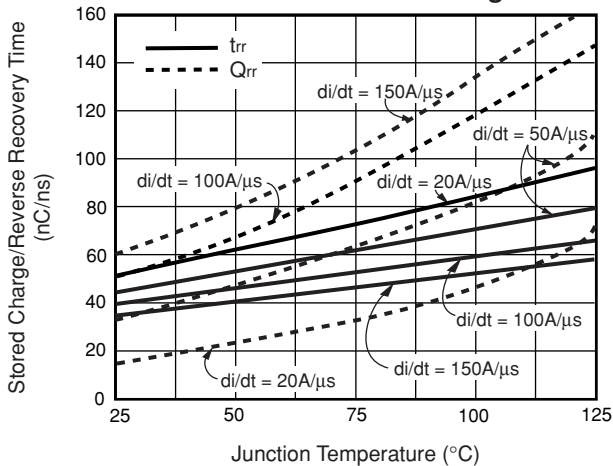


Fig. 6 – Typical Junction Capacitance

