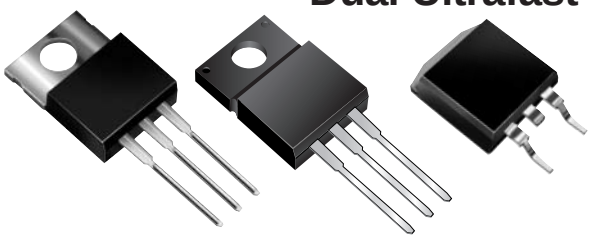
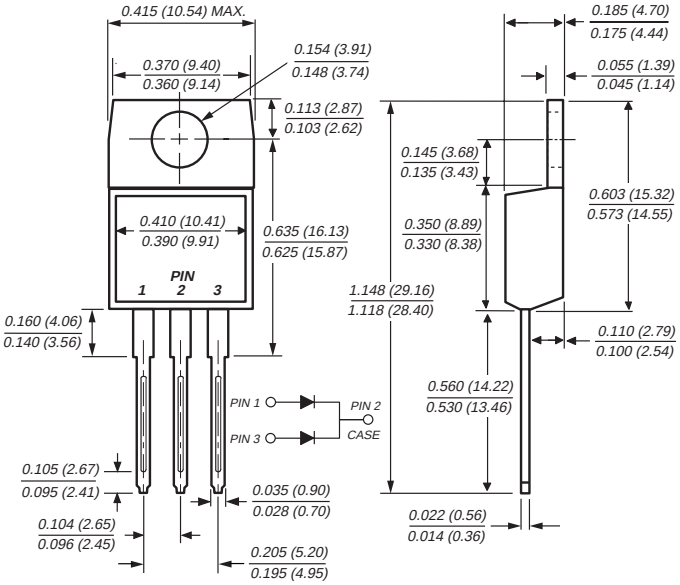
Vishay Semiconductors
formerly General Semiconductor

Dual Ultrafast Soft Recovery Rectifier

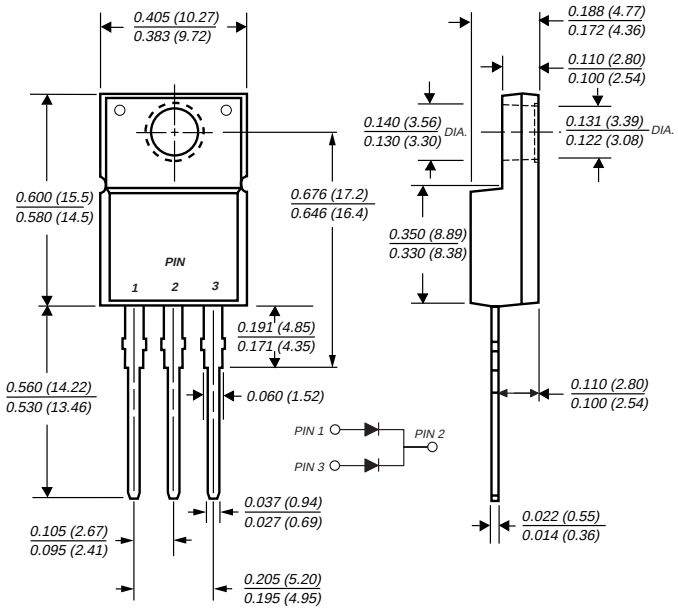


Reverse Voltage 300 to 400V
Forward Current 10A
Reverse Recovery Time 35ns

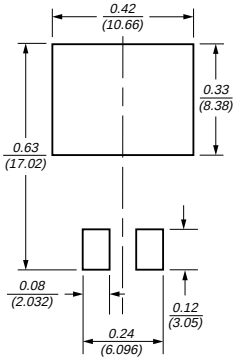
TO-220AB (BYT28, UG10 Series)



ITO-220AB (BYT28F, UGF10 Series)

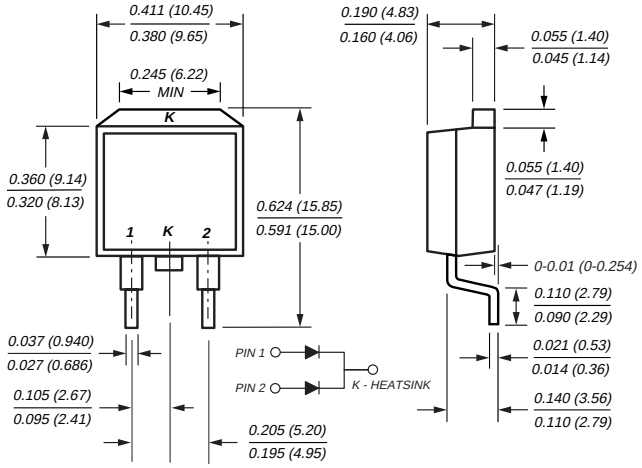


Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

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 oz., 2.24 g

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

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

Parameter	Symbol	UG10FCT / BYT28-300	UG10GCT / BYT28-400	Unit
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	
Maximum DC blocking voltage	V_{DC}	300	400	V
Maximum average forward rectified current at T_C = 100°C — total device	$I_{F(AV)}$	10		A
Maximum average forward rectified current at T_C = 100°C — per leg	$I_{F(AV)}$	5		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I_{FSM}	60		A
Operating junction and storage temperature range	T_J, T_{STG}	–40 to +150		°C
RMS Isolation voltage (BYT28F, UGF types) from terminals to heatsink with t = 1 second, RH ≤ 30%	V_{ISOL}	4500(1) 3500(2) 1500(3)		V

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

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage per leg(4) at I_F = 5A, T_J = 25°C	V_F	1.30	V
at I_F = 10A, T_J = 25°C	V_F	1.40	V
at I_F = 5A, T_J = 150°C	V_F	1.05	V
Maximum reverse current per leg at V_{RRM} — T_J = 25°C	I_R	10	µA
Maximum reverse current per leg at V_{RRM} — T_J = 100°C	I_R	200	µA
Maximum reverse recovery time per leg at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	35	ns
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}	50	ns
Maximum reverse recovery current per leg at I_F = 5A, di/dt = 50A/µs, V_R = 30V, T_C = 100°C	I_{RM}	3.0	A
Maximum stored charge per leg I_F = 2A, di/dt = 20A/µs, V_R = 30V, I_{rr} = 0.1 I_{RM}	Q_{rr}	50	nC

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

Parameter	Symbol	UG10 / BYT28	UGF10 / BYT28F	UGB10 / BYT28B	Unit
Typical thermal resistance junction to case per leg	$R_{\Theta JC}$	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°C unless otherwise noted)

Fig 1 — Forward Current Derating Curve

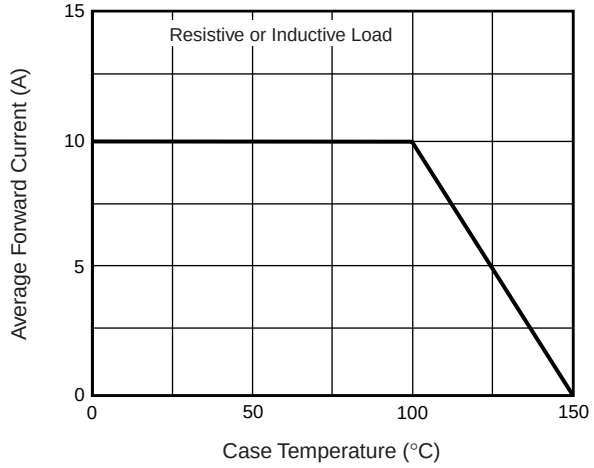


Fig 2 — Maximum Non-Repetitive Peak Forward Surge Current Per Leg

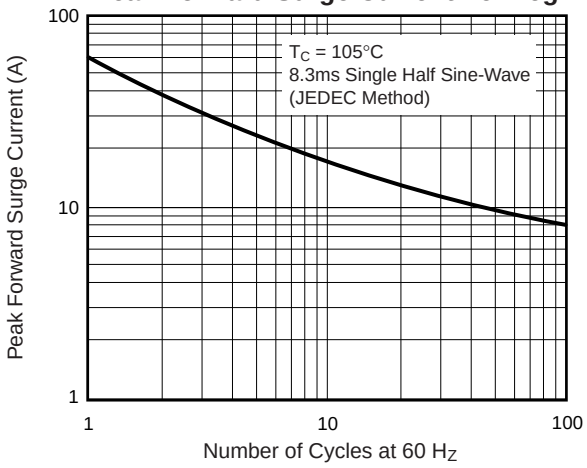


Fig 3 —Typical Instantaneous Forward Characteristics Per Leg

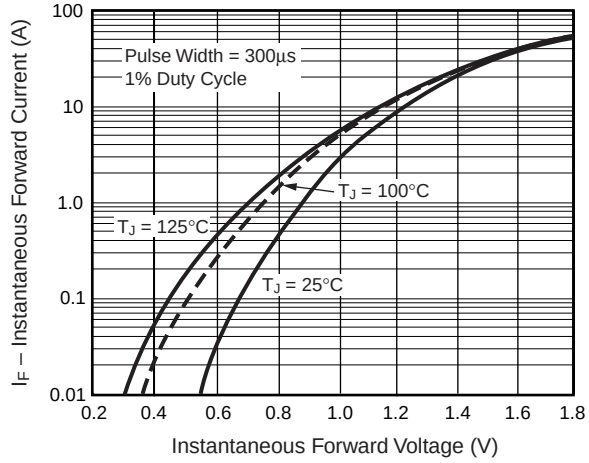


Fig 4 — Typical Reverse Characteristics Per Leg

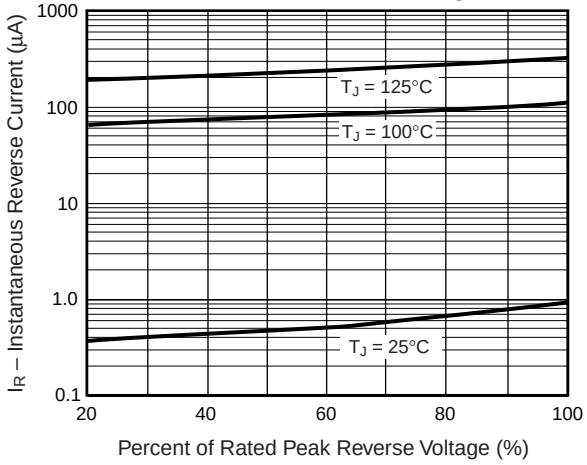


Fig 5 — Reverse Switching Characteristics Per Leg

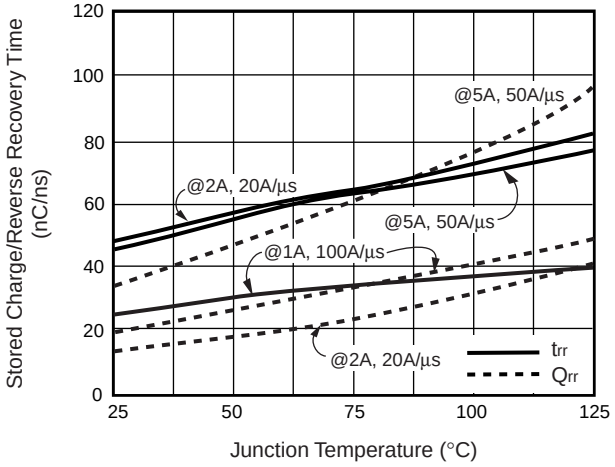


Fig 6 — Typical Junction Capacitance Per Leg