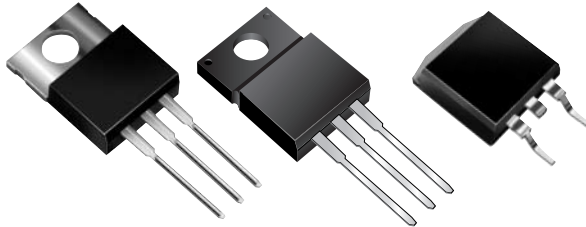


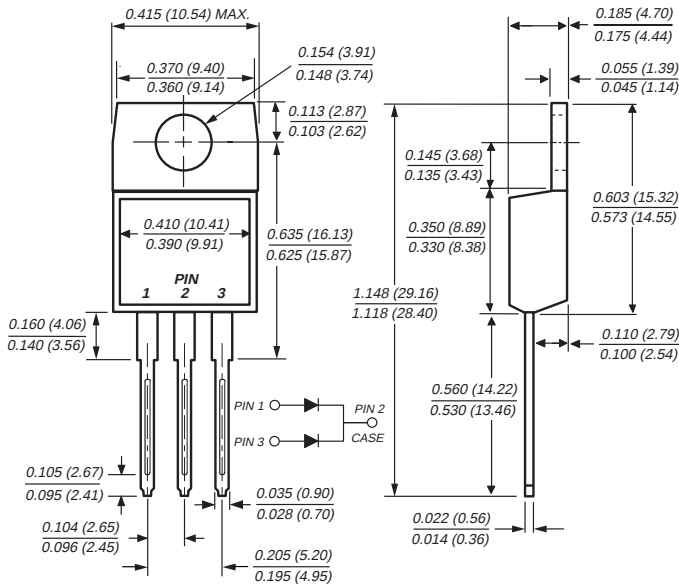


Dual Ultrafast Soft Recovery Rectifier

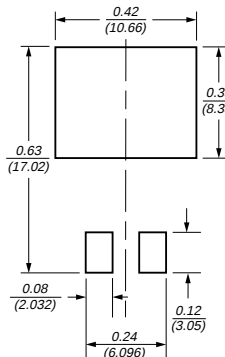


Reverse Voltage 300 to 400V
Forward Current 10A
Reverse Recovery Time 35ns

TO-220AB (BYT28, UG10 Series)

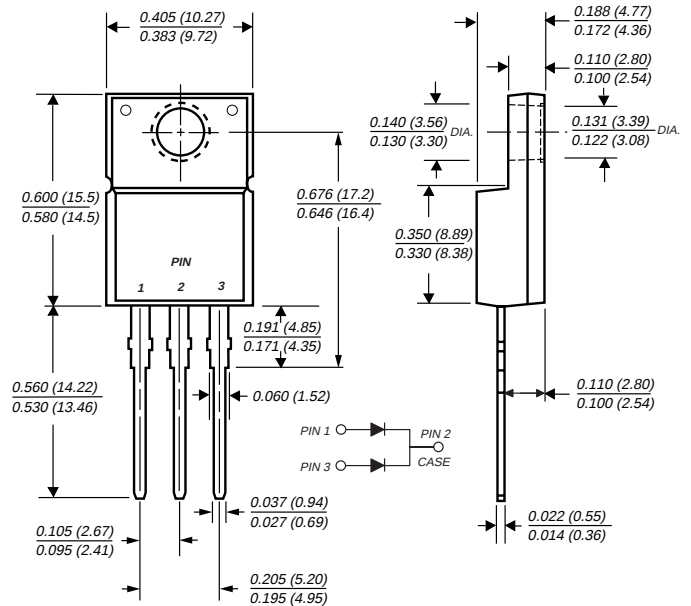


Mounting Pad Layout TO-263AB

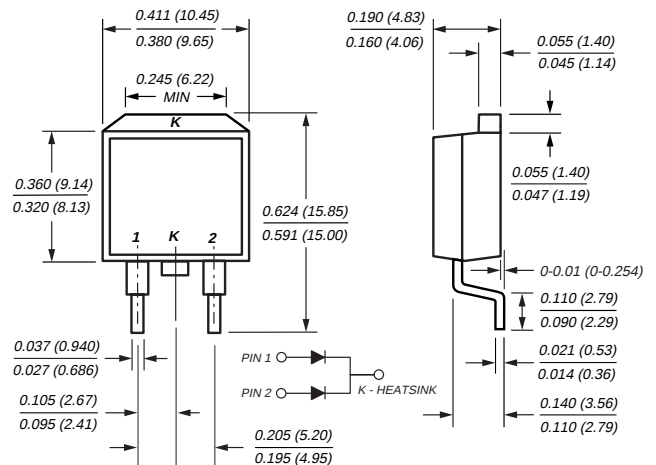


Dimensions in inches
and (millimeters)

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

Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise noted)

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

Electrical Characteristics ($T_C = 25^\circ\text{C}$ unless otherwise noted)

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

Thermal Characteristics ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	UG10	UGF10	UGB10	Unit
		BYT28	BYT28F	BYT28B	
Typical thermal resistance junction to case	$R_{\theta JC}$	4.5	6.7	4.5	$^\circ\text{C}/\text{W}$

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 $\leq 4.9\text{ mm}$ (0.19")
- (4) Pulse test: 300 μs pulse width, 1% duty cycle



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

Fig 1 — Forward Current Derating Curve

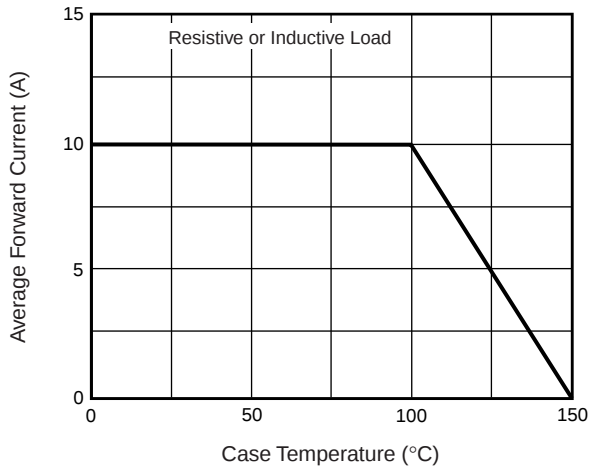


Fig 2 — Maximum Non-Repetitive Peak Forward Surge Current Per Leg

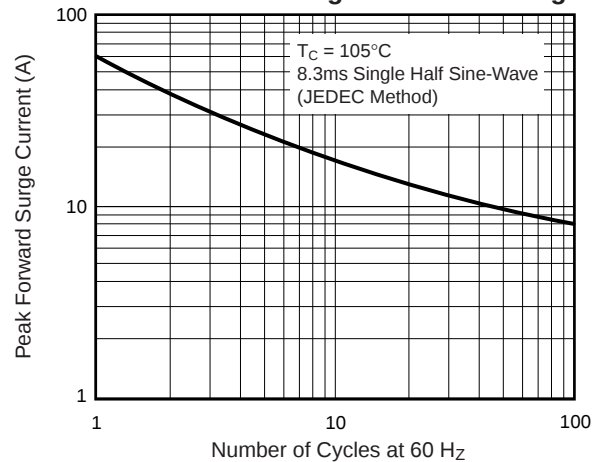


Fig 3 — Typical Instantaneous Forward Characteristics Per Leg

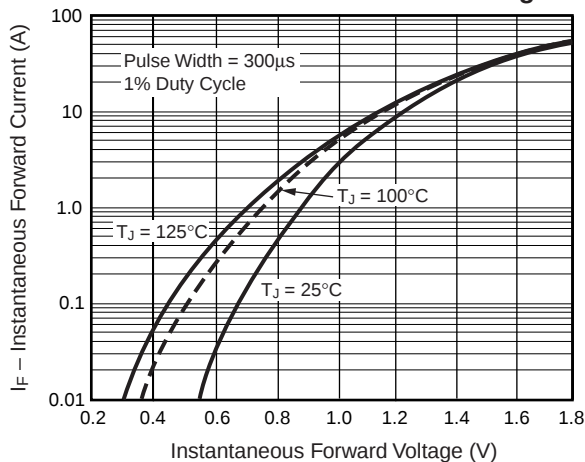


Fig 4 — Typical Reverse Characteristics Per Leg

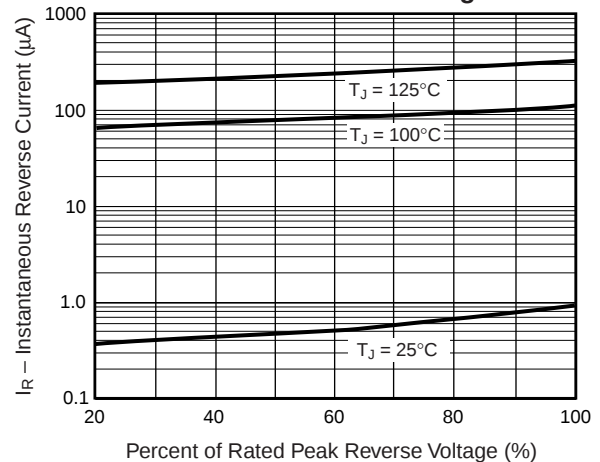


Fig 5 — Reverse Switching Characteristics Per Leg

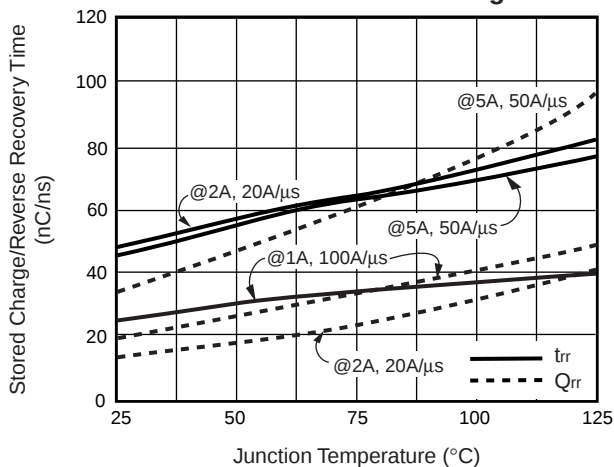


Fig 6 — Typical Junction Capacitance Per Leg

