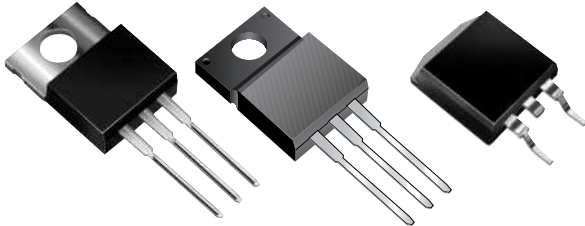


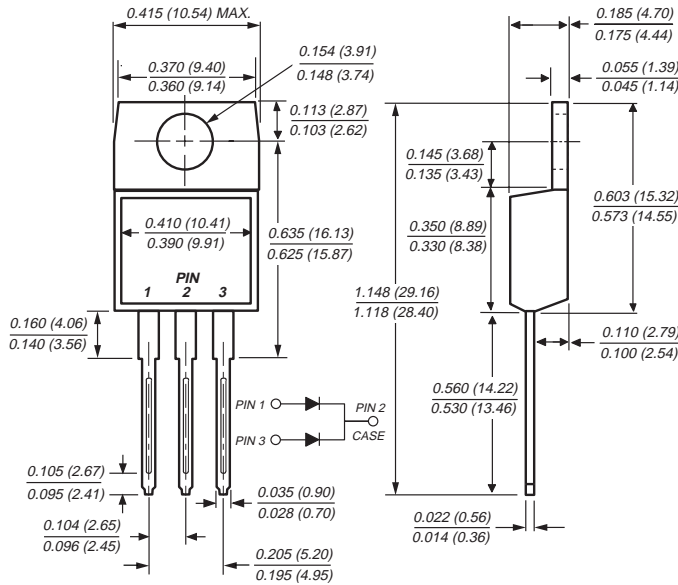


## Dual Ultrafast Soft Recovery Rectifier

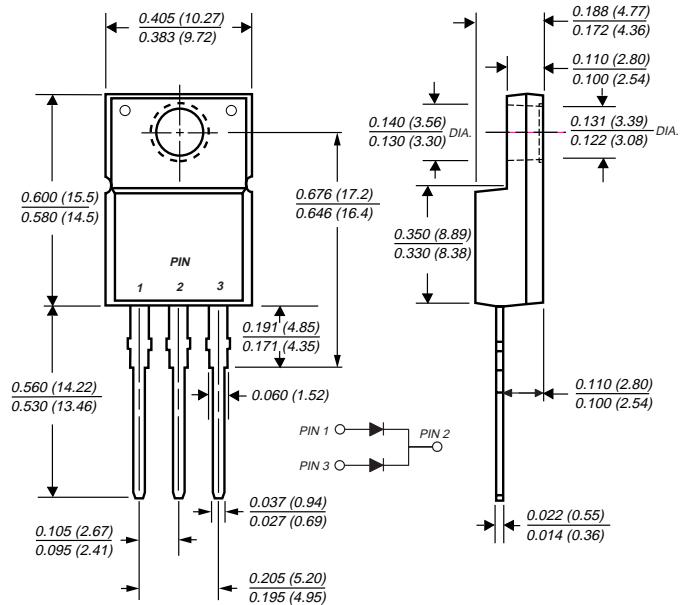


Reverse Voltage 300 to 400V  
Forward Current 10A  
Reverse Recovery Time 35ns

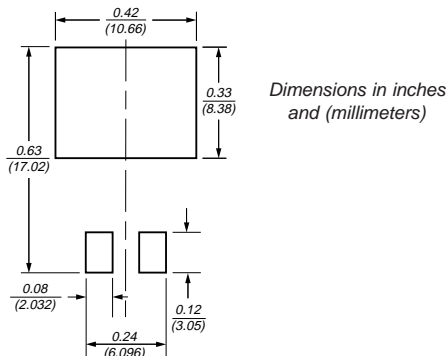
### TO-220AB (BYT28, UG10 Series)



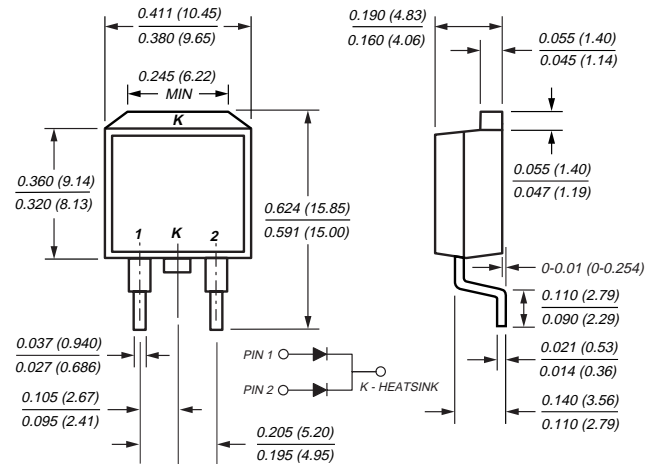
### ITO-220AB (BYT28F, UGF10 Series)



### Mounting Pad Layout TO-263AB



### 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<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	UG10FCT	UG10GCT	Unit
		BYT28-300	BYT28-400	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	300	400	V
Maximum working reverse voltage	V <sub>RWM</sub>	300	400	V
Maximum RMS voltage	V <sub>RMS</sub>	210	280	
Maximum DC blocking voltage	V <sub>DC</sub>	300	400	V
Maximum average forward rectified current at T <sub>C</sub> = 100°C	I <sub>F(AV)</sub>	10 5		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I <sub>FSM</sub>	60		A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-40 to +150		°C
RMS Isolation voltage (BYT28F, UGF types) from terminals to heatsink with t = 1 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 <sup>(1)</sup> 3500 <sup>(2)</sup> 1500 <sup>(3)</sup>		V

## Electrical Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage per leg <sup>(4)</sup> at I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C at I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C at I <sub>F</sub> = 5A, T <sub>J</sub> = 150°C	V <sub>F</sub>	1.30 1.40 1.05	V
Maximum reverse current per leg at V <sub>RRM</sub>	I <sub>R</sub>	10 200	μA
Maximum reverse recovery time per leg at I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A	t <sub>rr</sub>	35	ns
Maximum reverse recovery time per leg at I <sub>F</sub> = 1.0A, di/dt = 100A/μs, V <sub>R</sub> = 30V, I <sub>rr</sub> = 0.1 I <sub>RM</sub>	t <sub>rr</sub>	50	ns
Maximum reverse recovery current per leg at I <sub>F</sub> = 5A, di/dt = 50A/μs, V <sub>R</sub> = 30V, T <sub>C</sub> = 100°C	I <sub>RM</sub>	3.0	A
Maximum stored charge per leg I <sub>F</sub> = 2A, di/dt = 20A/μs, V <sub>R</sub> = 30V, I <sub>rr</sub> = 0.1 I <sub>RM</sub>	Q <sub>rr</sub>	50	nC

## Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	UG10	UGF10	UGB10	Unit
		BYT28	BYT28F	BYT28B	
Typical thermal resistance junction to case	R <sub>θJC</sub>	4.5	6.7	4.5	°C/W

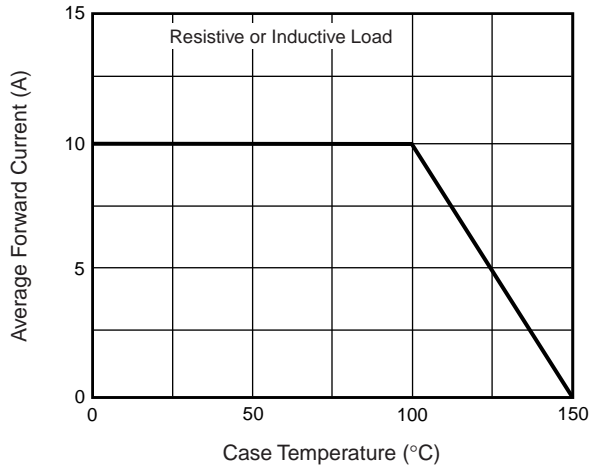
### Notes:

- (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

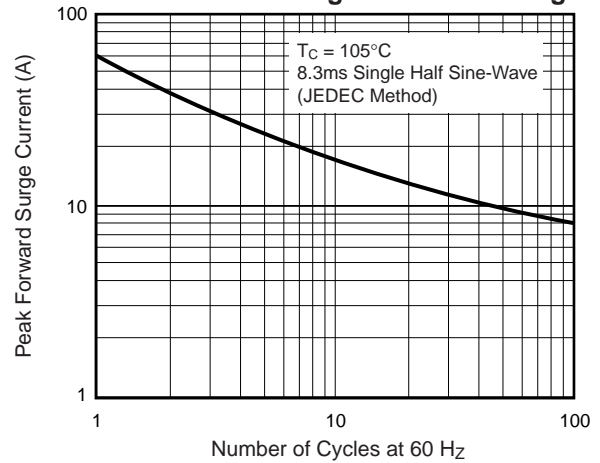


## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

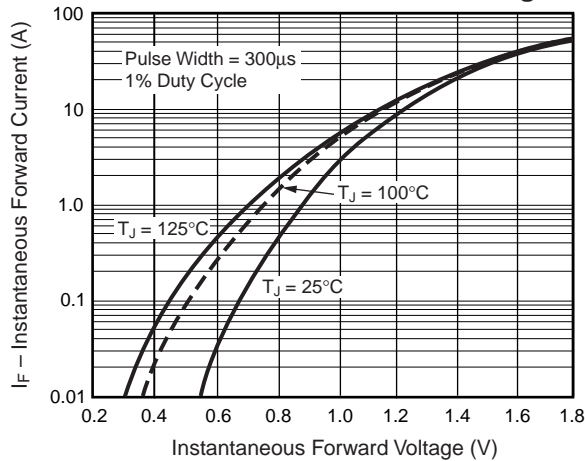
### Fig 1 — Forward Current Derating Curve



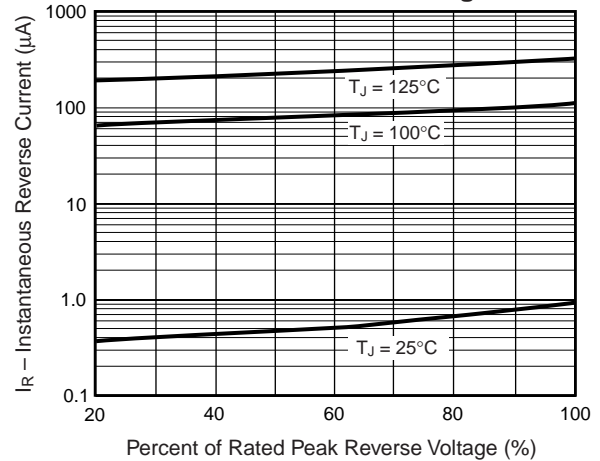
### Fig 2 — Maximum Non-Repetitive Peak Forward Surge Current Per Leg



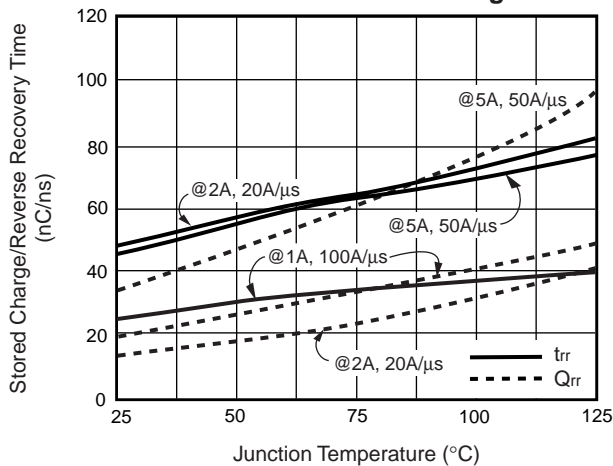
### Fig 3 — Typical Instantaneous Forward Characteristics Per Leg



### Fig 4 — Typical Reverse Characteristics Per Leg



### Fig 5 — Reverse Switching Characteristics Per Leg



### Fig 6 — Typical Junction Capacitance Per Leg

