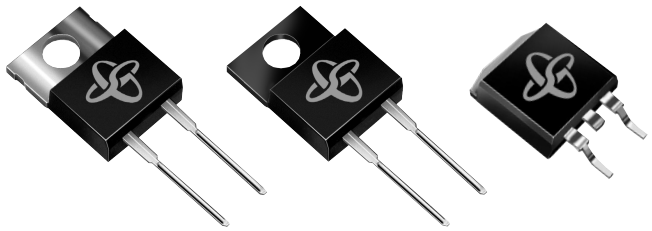
GENERAL SEMICONDUCTOR®

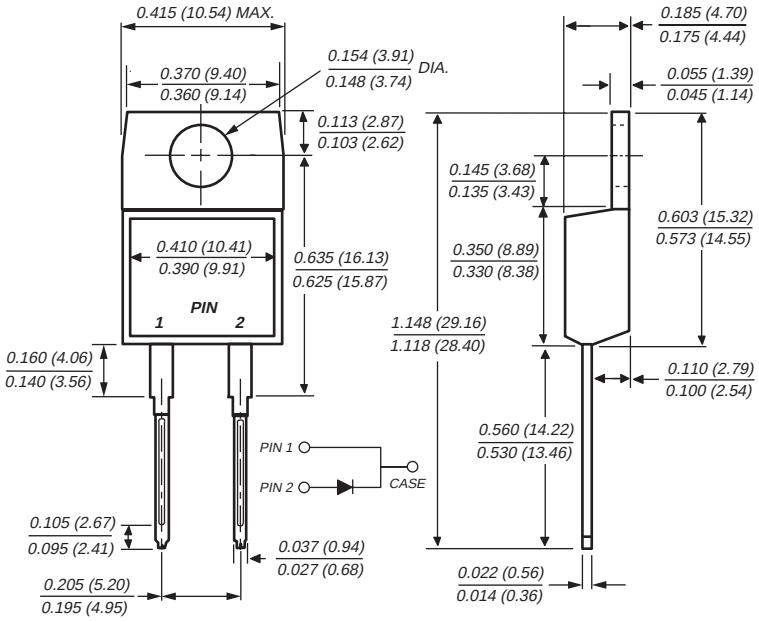
UG8AT-DT, UGF8AT-DT, UGB8AT-DT

Ultrafast Rectifier

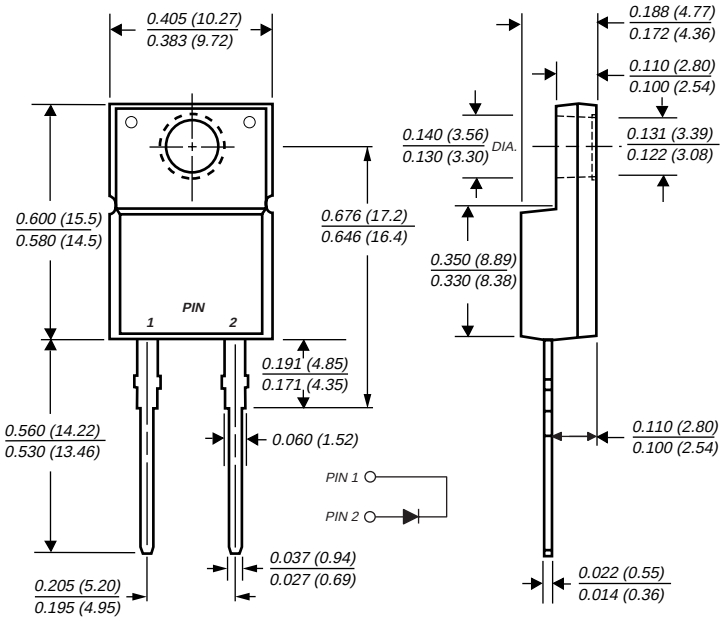
Reverse Voltage 50 to 200 V
Forward Current 8.0 A
Reverse Recovery Time 20 ns



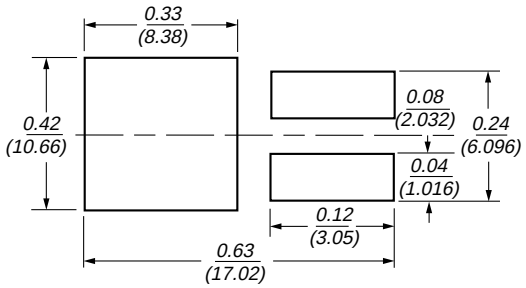
TO-220AC (UG8AT-DT)



ITO-220AC (UGF8AT-DT)

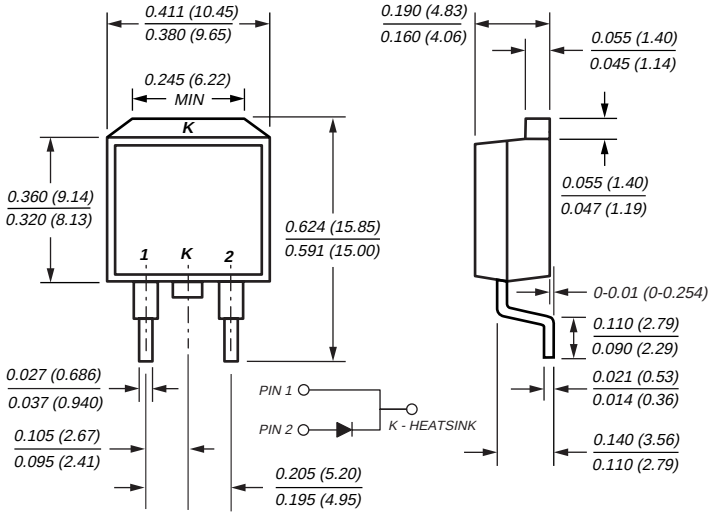


Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

TO-263AB (UGB8AT-DT)



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

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: 5 in-lbs maximum

Weight: 0.08 ounce, 2.24 grams

1/17/00

GENERAL SEMICONDUCTOR®

UG8AT-DT, UGF8AT-DT
UGB8AT-DT
Ultrafast Rectifier

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

Parameter	Symbol	UG8AT	UG8BT	UG8CT	UG8DT	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	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}	150				A
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150				°C
RMS Isolation voltage (UGF type only) from terminals to heatsink with t = 1.0 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	UG8AT	UG8BT	UG8CT	UG8DT	Unit
Maximum instantaneous forward voltage at (NOTE 4)	8.0 20A 5.0A, T_J= 150°C	V_F	1.0 1.2 0.95				V
Maximum DC reverse current at rated DC blocking voltage	T_J=25°C T_J=100°C	I_R	10 300				µA
Maximum reverse recovery time at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A		t_{rr}	20				ns
Maximum reverse recovery time at I_F=8.0A, V_R=30V, di/dt=50A/µs, I_{rr}=10% I_{RM}	T_J=25°C T_J=100°C	t_{rr}	30 50				ns
Maximum recovered stored charged at I_F=8.0A, V_R=30V, di/dt=50A/µs	T_J=25°C T_J=100°C	Q_{rr}	20 45				nC
Typical junction capacitance at 4.0V, 1MHz		C_J	45				pF

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

Parameter	Symbol	UG8AT	UGF8AT	UGB8AT	Unit
Typical thermal resistance from junction to case	$R_{\Theta JC}$	4.0	5.0	4.0	°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

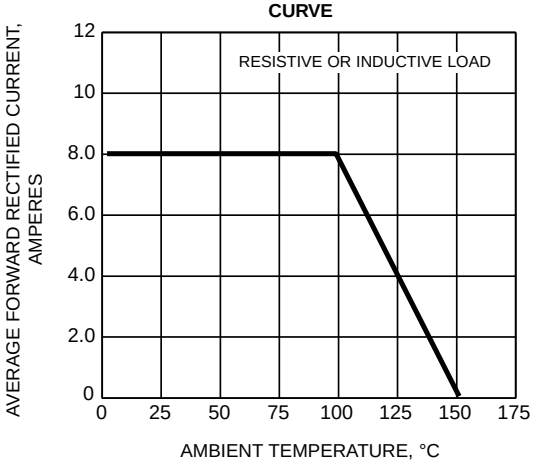


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

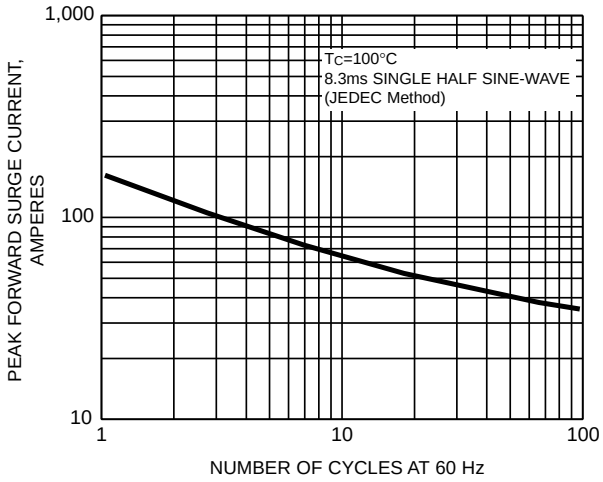


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

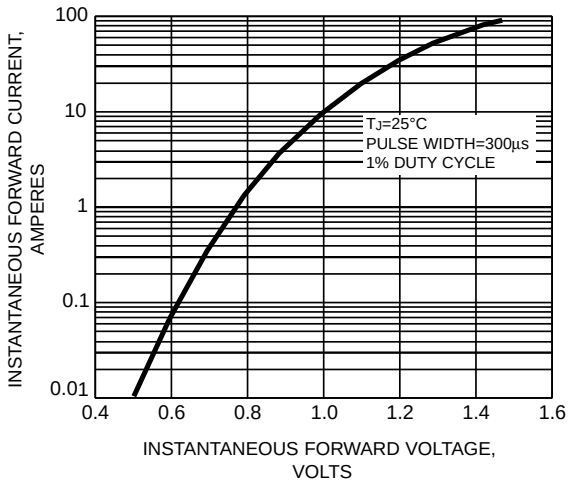


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

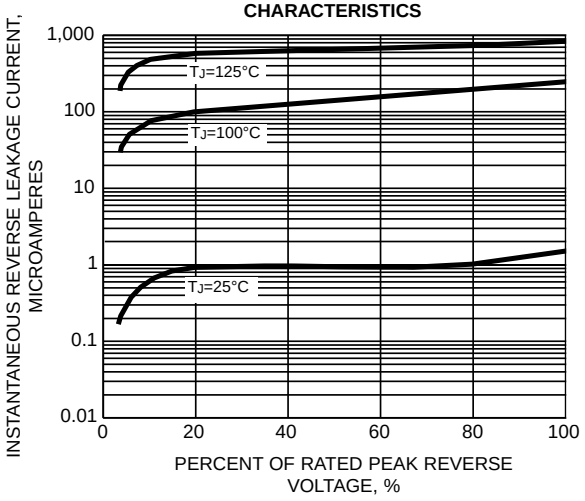


FIG. 5 - REVERSE SWITCHING CHARACTERISTICS

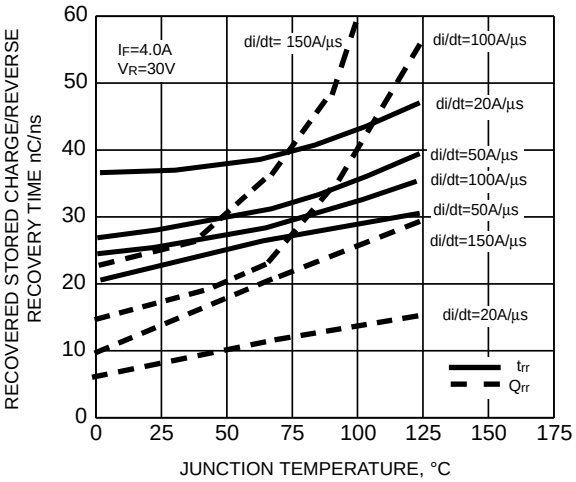


FIG. 6 - TYPICAL JUNCTION CAPACITANCE