

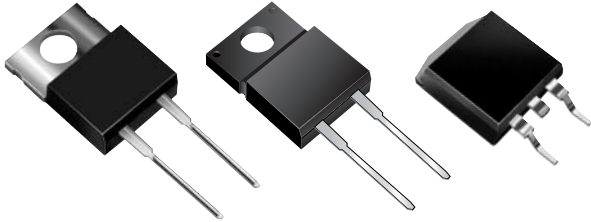


UG8AT-DT, UGF8AT-DT, UGB8AT-DT

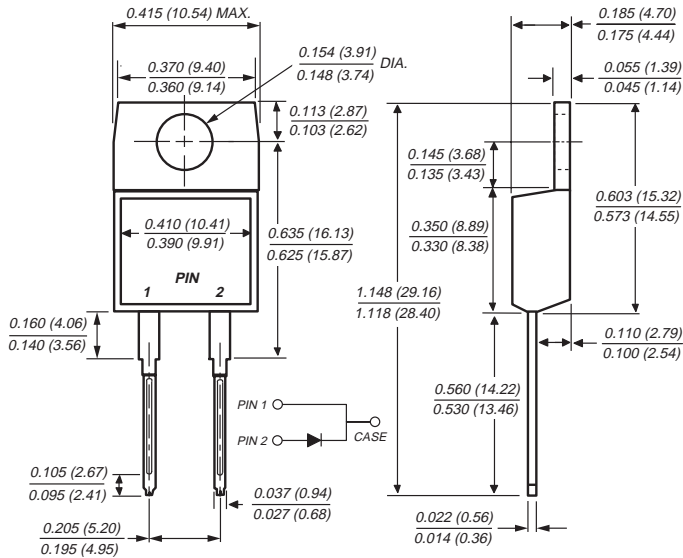
Vishay Semiconductors
formerly General Semiconductor

Ultrafast Rectifier

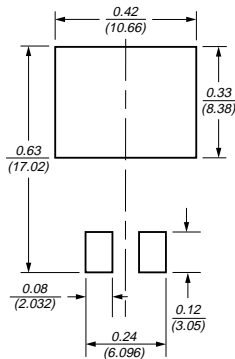
Reverse Voltage 50 to 200 V
Forward Current 8.0 A
Reverse Recovery Time 20 ns



TO-220AC (UG8AT-DT)

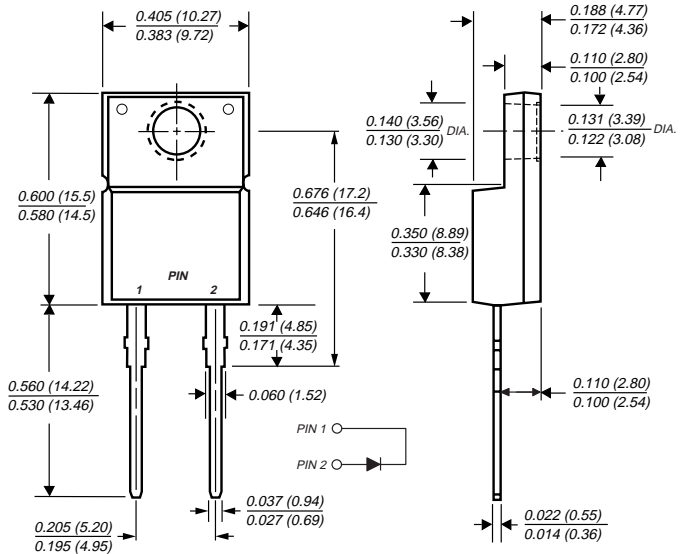


Mounting Pad Layout TO-263AB

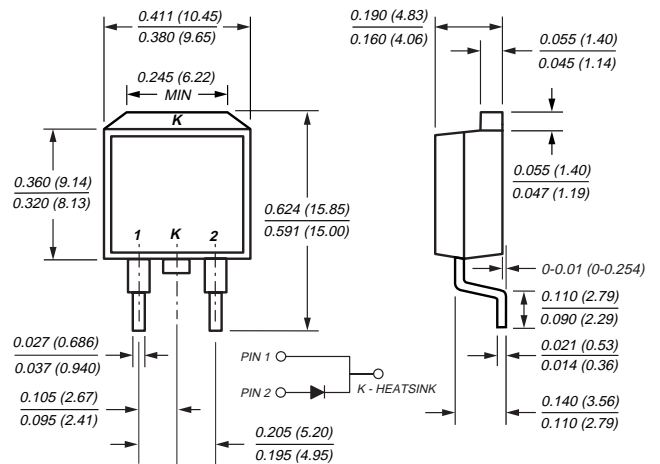


Dimensions in inches and (millimeters)

ITO-220AC (UGF8AT-DT)



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 oz., 2.24 g

UG8AT-DT, UGF8AT-DT, UGB8AT-DT



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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 8.0 20A (NOTE 4) 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 _{θJC}	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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Maximum Forward Current Derating Curve

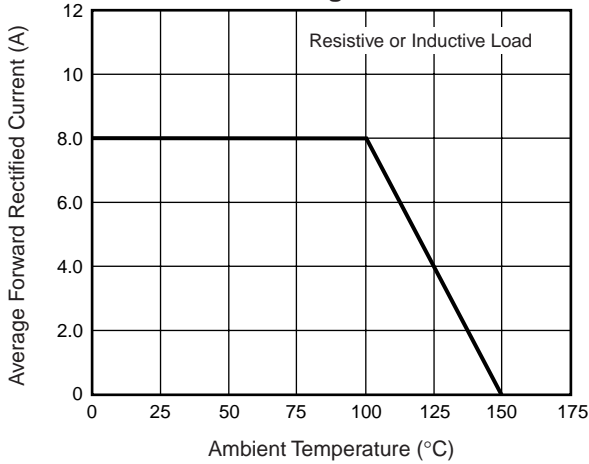


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

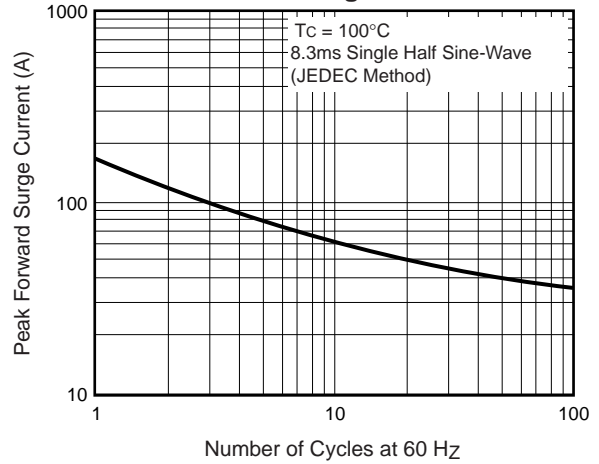


Fig. 3 – Typical Instantaneous Forward Characteristics

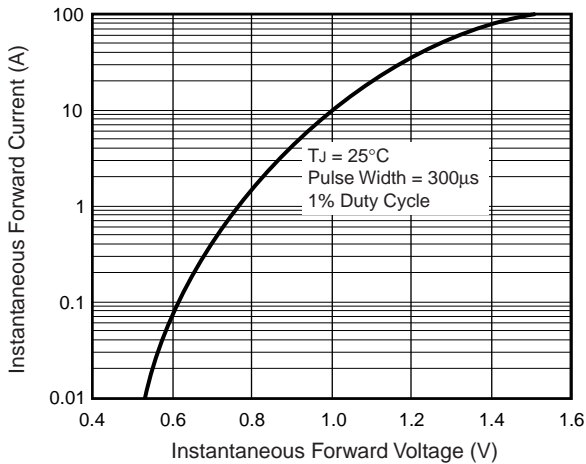


Fig. 4 – Typical Reverse Characteristics

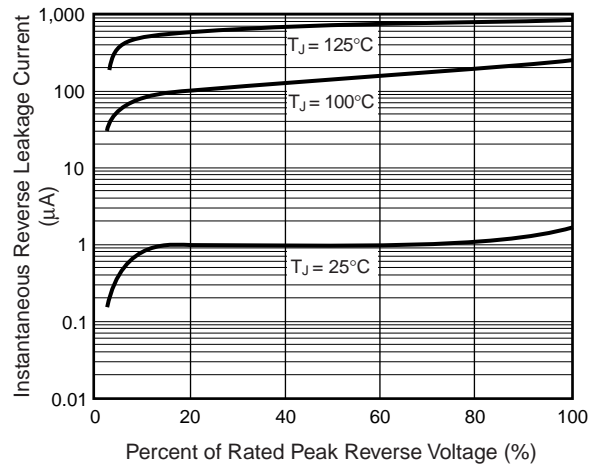


Fig. 5 – Reverse Switching Characteristics

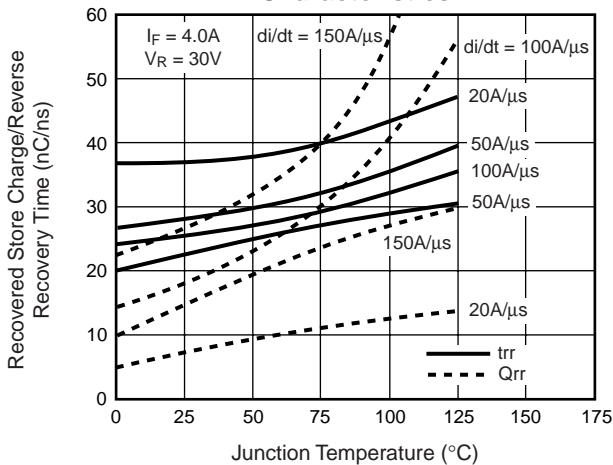


Fig. 6 – Typical Junction Capacitance

