

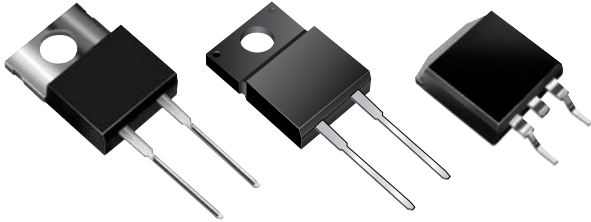


# UG8AT-DT, UGF8AT-DT, UGB8AT-DT

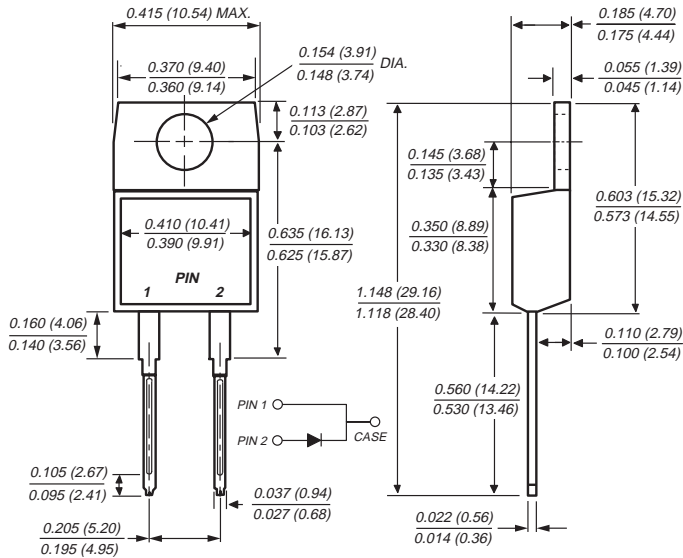
Vishay Semiconductors  
formerly General Semiconductor

## Ultrafast Rectifier

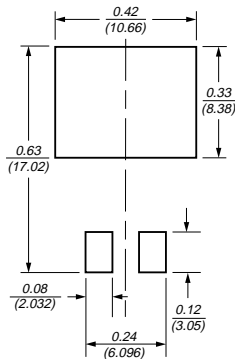
Reverse Voltage 50 to 200 V  
Forward Current 8.0 A  
Reverse Recovery Time 20 ns



TO-220AC (UG8AT-DT)

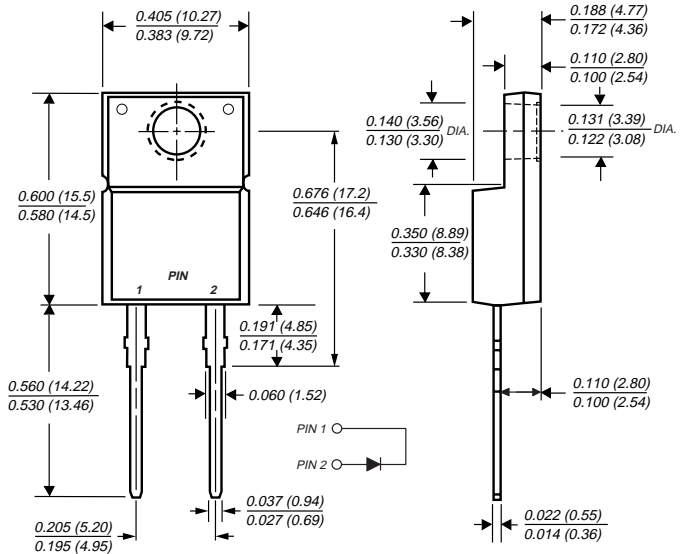


Mounting Pad Layout TO-263AB

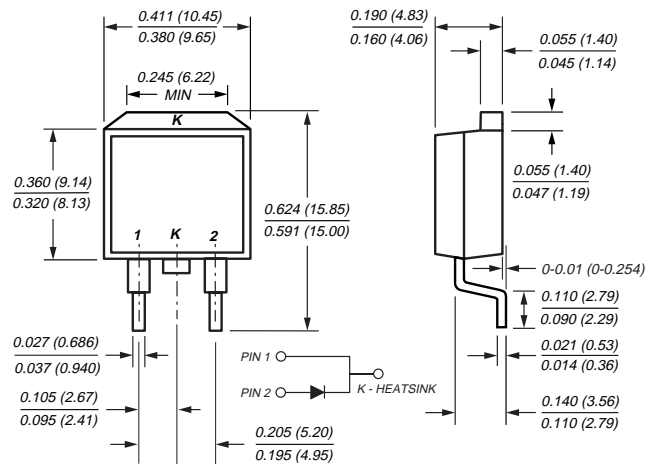


Dimensions in inches and (millimeters)

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

Parameter	Symbol	UG8AT	UG8BT	UG8CT	UG8DT	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	V
Maximum average forward rectified current at T <sub>C</sub> = 100°C	I <sub>F(AV)</sub>	8.0				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T <sub>C</sub> = 100°C	I <sub>FSM</sub>	150				A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150				°C
RMS Isolation voltage (UGF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 (NOTE 1) 3500 (NOTE 2) 1500 (NOTE 3)				V

## Electrical Characteristics (T<sub>C</sub> = 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 <sub>J</sub> = 150°C	V <sub>F</sub>	1.0 1.2 0.95				V
Maximum DC reverse current at rated DC blocking voltage T <sub>J</sub> =25°C T <sub>J</sub> =100°C	I <sub>R</sub>	10 300				μA
Maximum reverse recovery time at I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A	t <sub>rr</sub>	20				ns
Maximum reverse recovery time at I <sub>F</sub> =8.0A, V <sub>R</sub> =30V, di/dt=50A/μs, I <sub>rr</sub> =10% I <sub>RM</sub> T <sub>J</sub> =25°C T <sub>J</sub> =100°C	t <sub>rr</sub>	30 50				ns
Maximum recovered stored charged at I <sub>F</sub> =8.0A, V <sub>R</sub> =30V, di/dt=50A/μs T <sub>J</sub> =25°C T <sub>J</sub> =100°C	Q <sub>rr</sub>	20 45				nC
Typical junction capacitance at 4.0V, 1MHz	C <sub>J</sub>	45				pF

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

Parameter	Symbol	UG8AT	UGF8AT	UGB8AT	Unit
Typical thermal resistance from junction to case	R <sub>θJC</sub>	4.0	5.0	4.0	°C/W

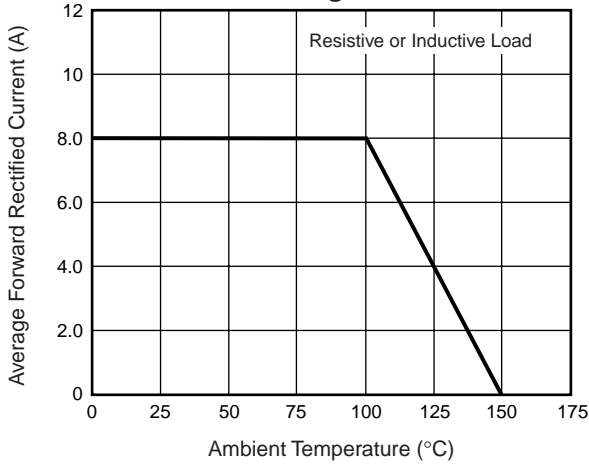
### Notes:

- (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

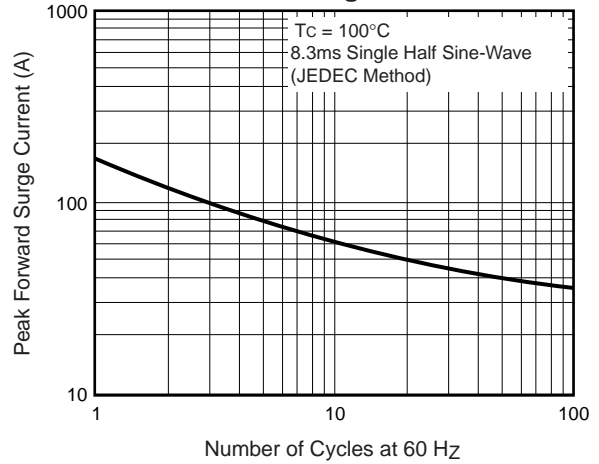


**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

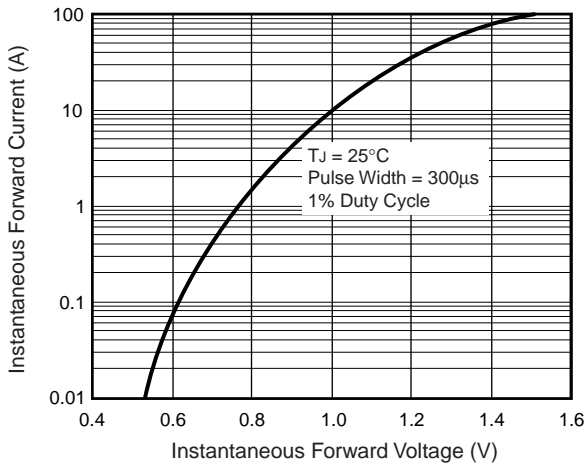
**Fig. 1 – Maximum Forward Current Derating Curve**



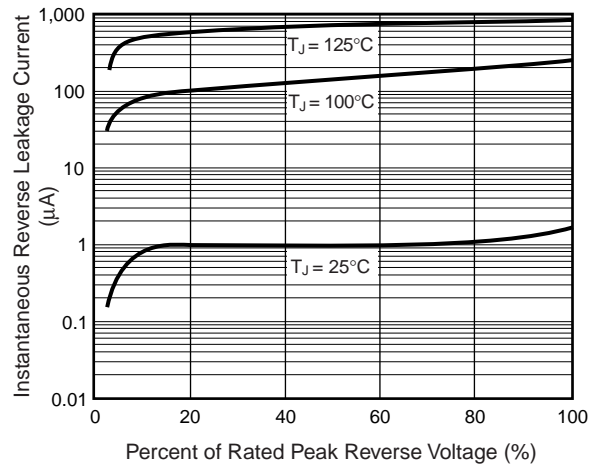
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



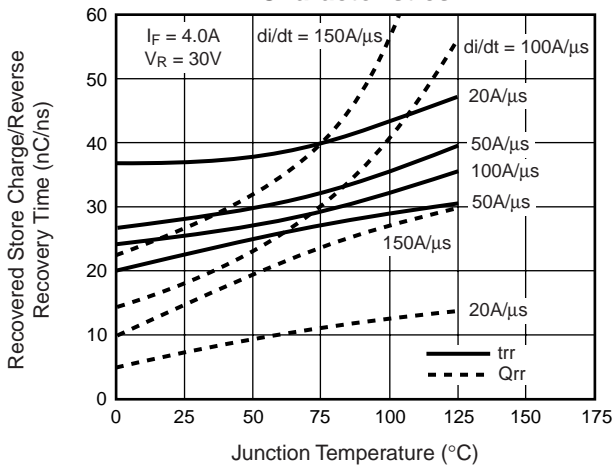
**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Characteristics**



**Fig. 5 – Reverse Switching Characteristics**



**Fig. 6 – Typical Junction Capacitance**

