



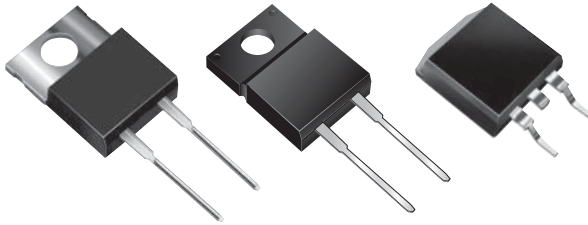
# GUR5H60, GURF5H60, GURB5H60

New Product

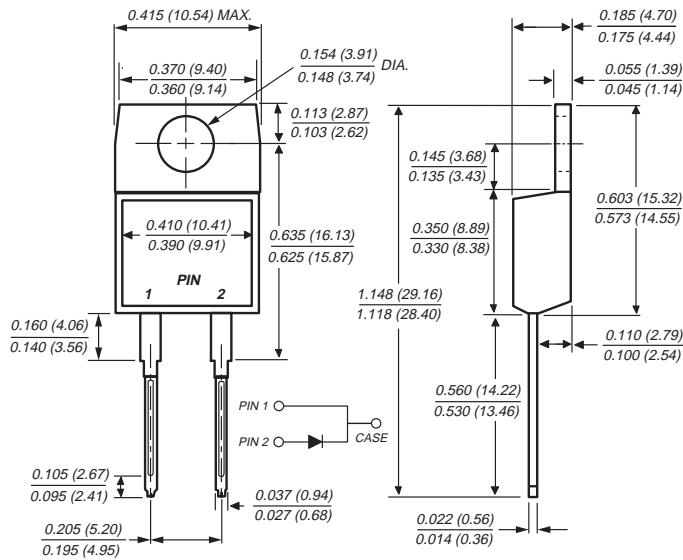
Vishay Semiconductors  
formerly General Semiconductor

## Ultrafast Rectifiers

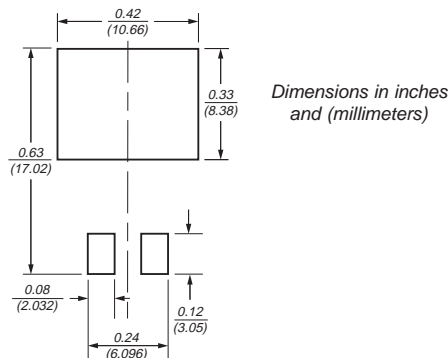
Reverse Voltage 600V  
Forward Current 5.0A  
Reverse Recovery Time 30ns



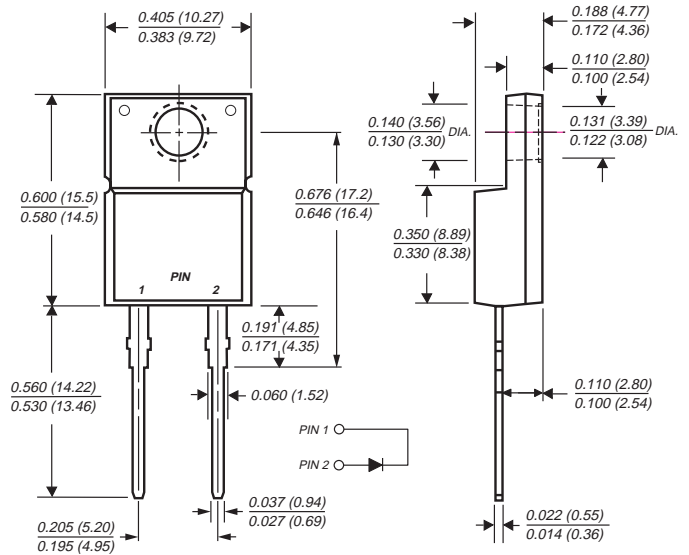
### TO-220AC (GUR5H60)



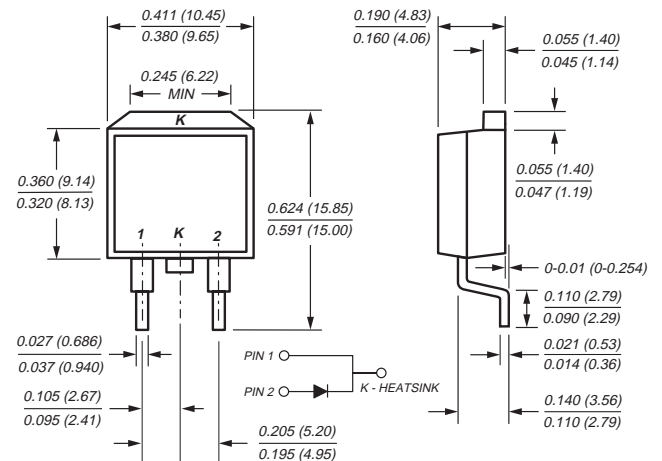
### Mounting Pad Layout TO-263AB



### ITO-220AC (GURF5H60)



### TO-263AB (GURB5H60)



## Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for freewheeling diode and power factor correction applications
- Low leakage
- Superfast recovery time for high efficiency
- Ideal for diode modulation and secondary DC/DC output rectification
- 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

High temperature soldering in accordance with CECC 802 / Reflow guaranteed

**Polarity:** As marked **Mounting Position:** Any

**Mounting Torque:** 10 in-lbs maximum

**Weight:** 0.08 oz., 2.24 g

## Maximum Ratings (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	V
Maximum working reverse voltage	V <sub>RWM</sub>	480	V
Maximum RMS voltage	V <sub>RMS</sub>	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	5.0	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>	90	A
Reverse Energy	E <sub>R</sub>	10	mJ
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
RMS Isolation voltage (GURF types only) from terminals to heatsink with t = 1.0 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 <sup>(4)</sup>	V <sub>F</sub>	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C 1.8 I <sub>F</sub> = 5A, T <sub>J</sub> = 150°C 1.6	V
Maximum DC reverse current at V <sub>RWM</sub>	I <sub>R</sub>	T <sub>J</sub> = 25°C 20 T <sub>J</sub> = 150°C 400	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>	30	ns

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

Parameter	Symbol	GUR	GURF	GURB	Unit
Typical thermal resistance from junction to case	R <sub>θJC</sub>	2	3	2	°C/W

**Notes:** (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset  
(3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")

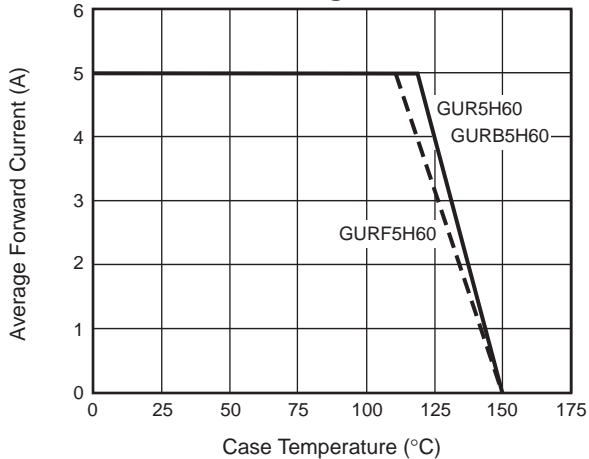
(2) Clip mounting (on case), where leads do overlap heatsink  
(4) Pulse test: 300μs pulse width, 1% duty cycle

## Ordering Information

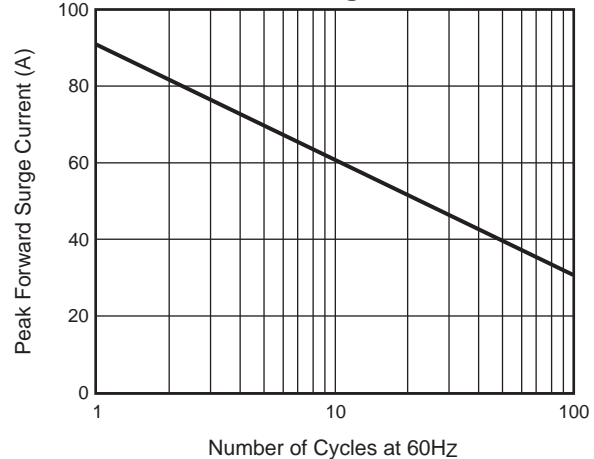
Product	Case	Package Code	Package Option
GUR5H60	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
GURF5H60	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
GURB5H60	TO-263AB	31 45 81	13" reel, 800/reel, 4.8K/carton Anti-Static tube, 50/tube, 2K/carton Anti-Static 13" reel, 800/reel, 4.8K/carton

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

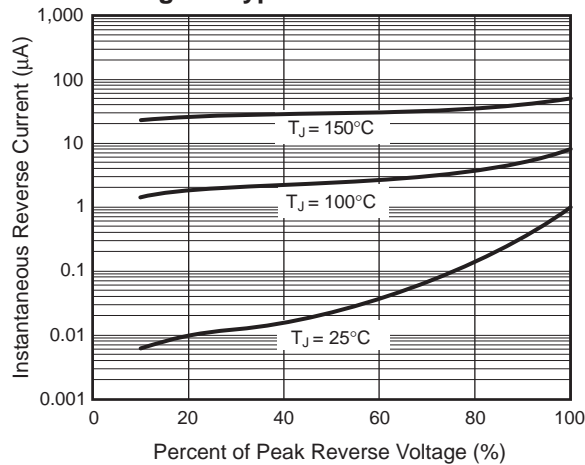
**Fig. 1 – Forward Current Derating Curve**



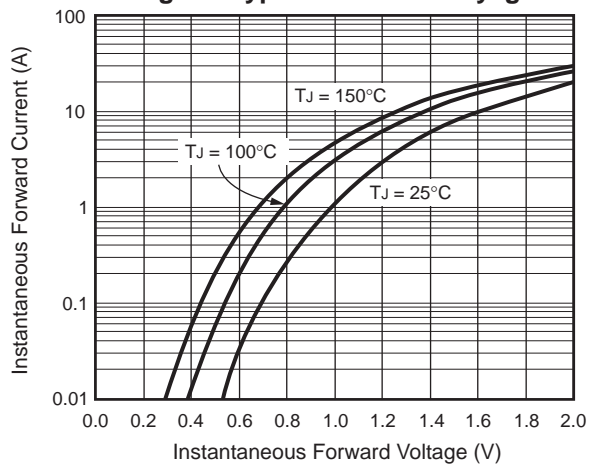
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



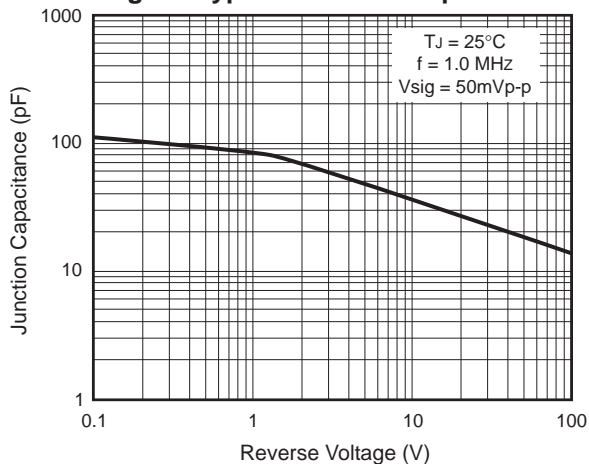
**Fig. 3 – Typical Reverse Current**



**Fig. 4 – Typical Forward Voltage**



**Fig. 5 – Typical Junction Capacitance**



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