



**THE DATASHEET OF
GURF5H60-E3/45**





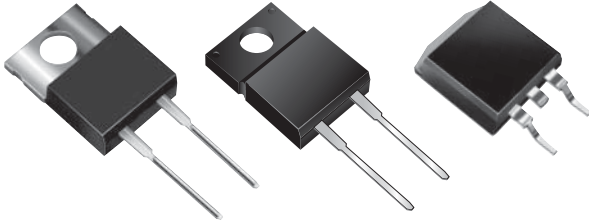
GUR5H60, GURF5H60, GURB5H60

New Product

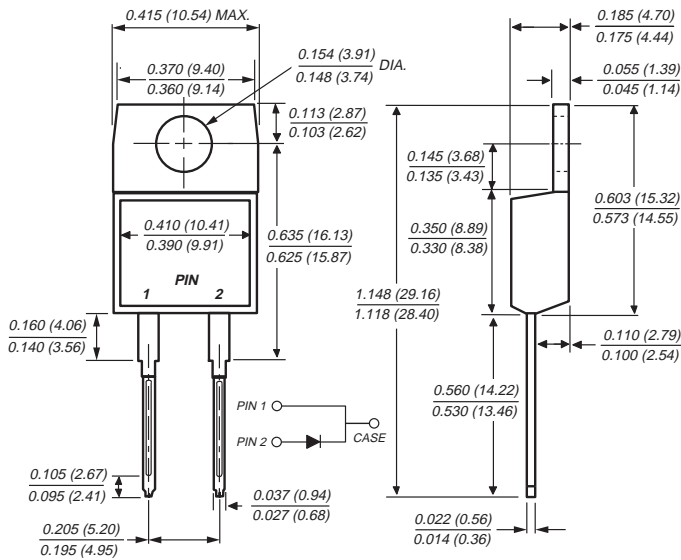
Vishay Semiconductors
formerly General Semiconductor

Ultrafast Rectifiers

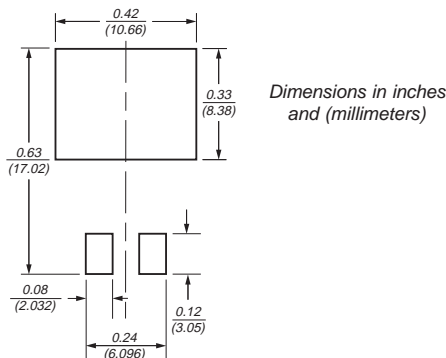
Reverse Voltage 600V
Forward Current 5.0A
Reverse Recovery Time 30ns



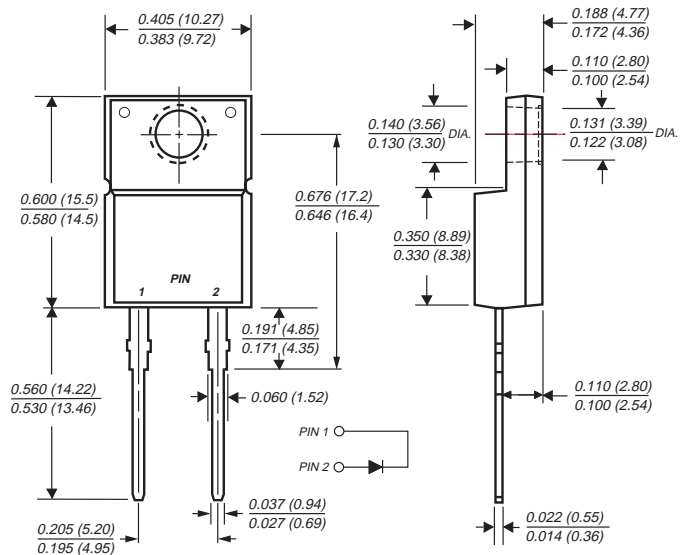
TO-220AC (GUR5H60)



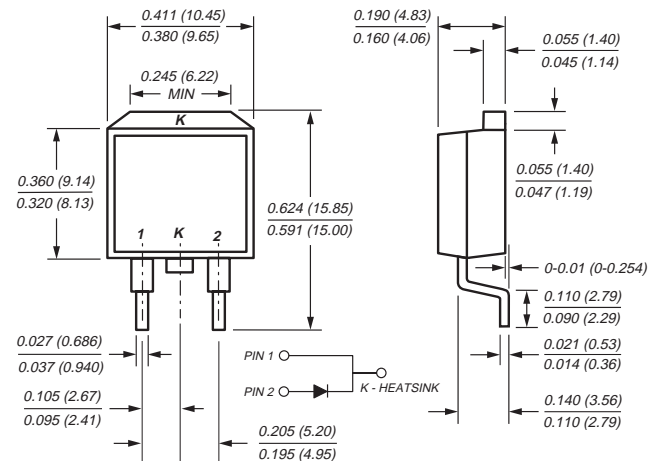
Mounting Pad Layout TO-263AB



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_C = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	600	V
Maximum working reverse voltage	V _{RWM}	480	V
Maximum RMS voltage	V _{RMS}	420	V
Maximum DC blocking voltage	V _{DC}	600	V
Maximum average forward rectified current	I _{F(AV)}	5.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _C = 100°C	I _{FSM}	90	A
Reverse Energy	E _R	10	mJ
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C
RMS Isolation voltage (GURF types only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V _{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾	V

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

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage ⁽⁴⁾	V _F	I _F = 5A, T _J = 25°C 1.8 I _F = 5A, T _J = 150°C 1.6	V
Maximum DC reverse current at V _{RWM}	I _R	T _J = 25°C 20 T _J = 150°C 400	μA
Maximum reverse recovery time at I _F = 0.5A, I _R = 1.0A, I _{rr} = 0.25A	t _{rr}	30	ns

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

Parameter	Symbol	GUR	GURF	GURB	Unit
Typical thermal resistance from junction to case	R _{θJC}	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

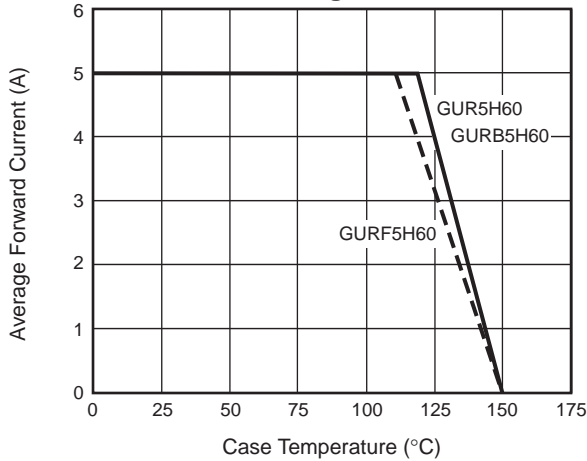


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

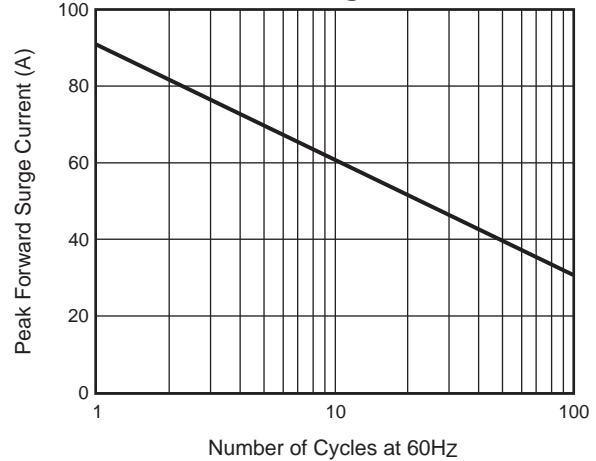


Fig. 3 – Typical Reverse Current

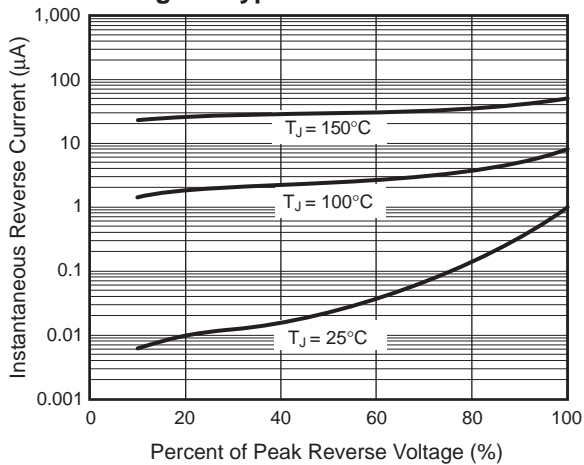


Fig. 4 – Typical Forward Voltage

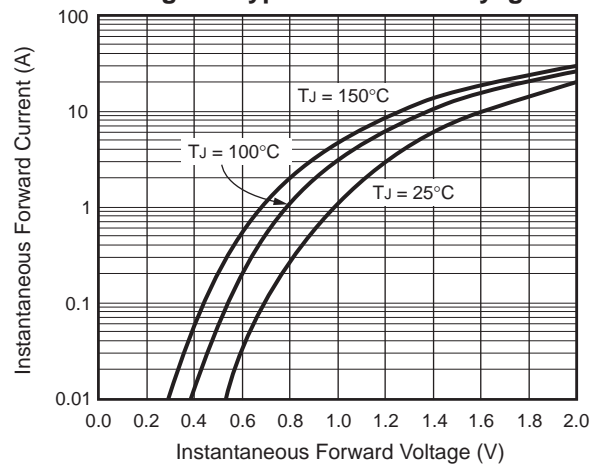
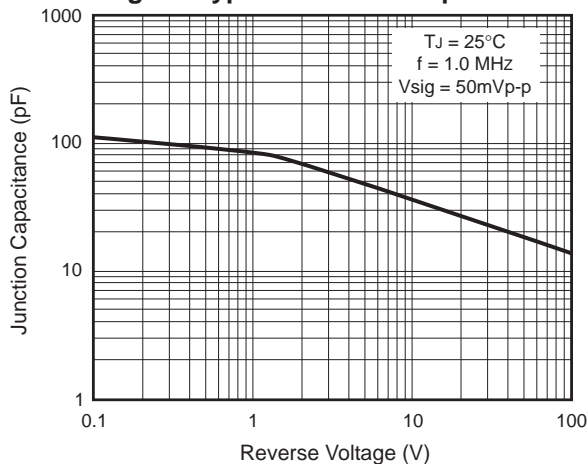



Fig. 5 – Typical Junction Capacitance



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