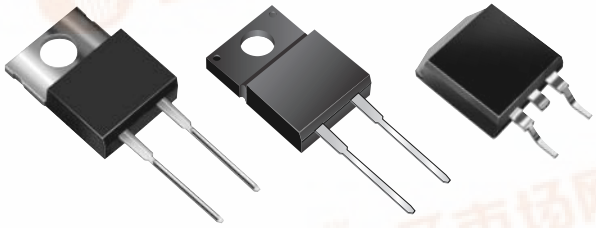
GUR5H60, GURF5H60, GURB5H60

New Product

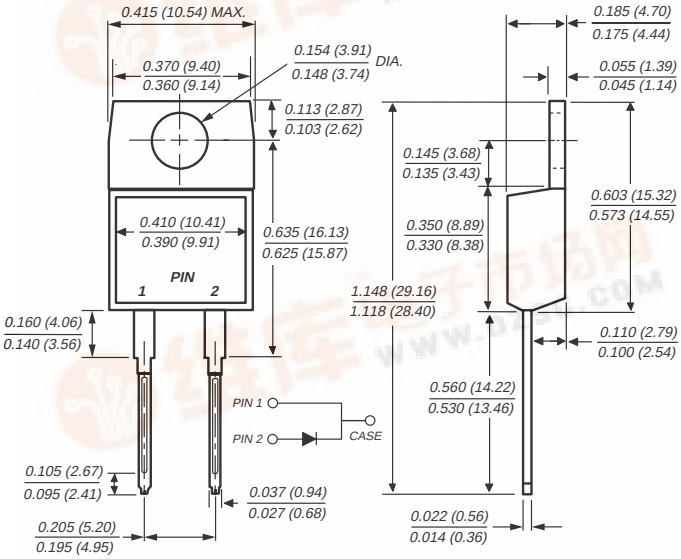
Vishay Semiconductors
formerly General Semiconductor

Ultrafast Rectifiers

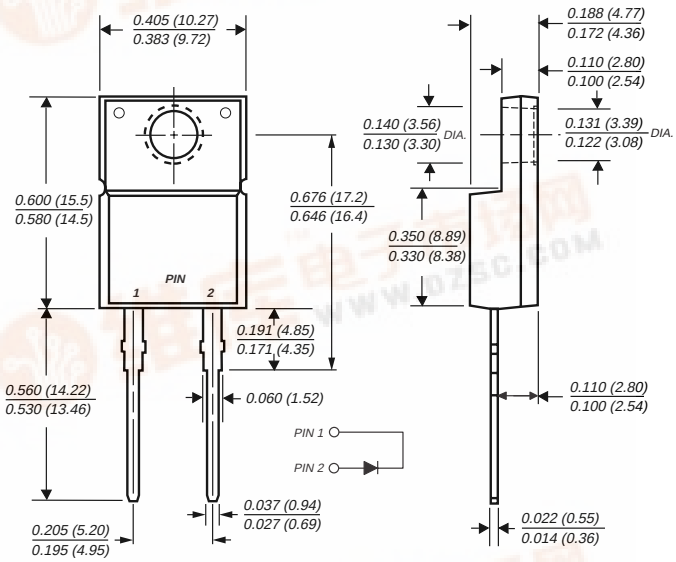
Reverse Voltage 600V
Forward Current 5.0A
Reverse Recovery Time 30ns



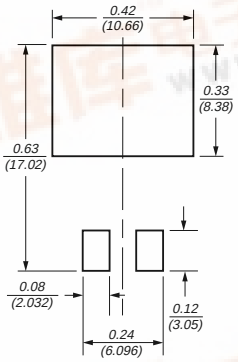
TO-220AC (GUR5H60)



ITO-220AC (GURF5H60)

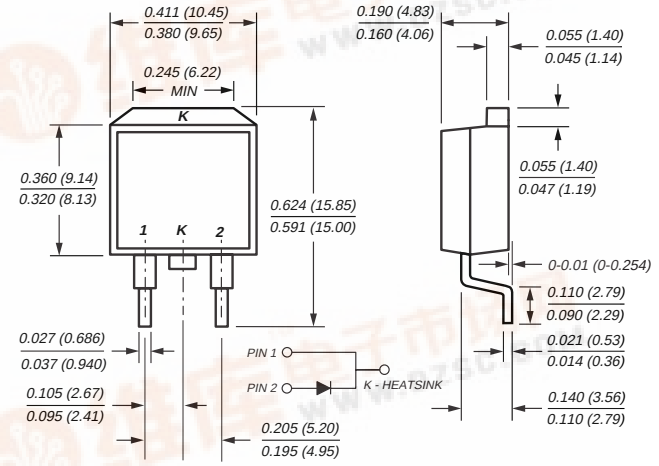


Mounting Pad Layout TO-263AB



Dimensions in inches and (millimeters)

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

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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)	I_F = 5A, T_J = 25°C I_F = 5A, T_J = 150°C	V_F	1.8 1.6	V
Maximum DC reverse current at V_{RWM}	T_J = 25°C T_J = 150°C	I_R	20 400	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	$R_{\theta JC}$	2	3	2	°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

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°C unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

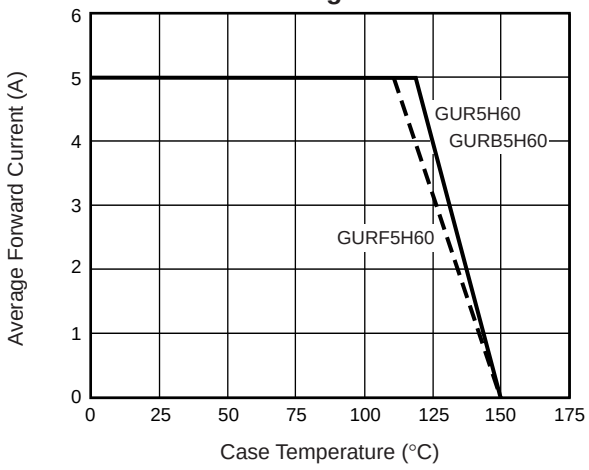

Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

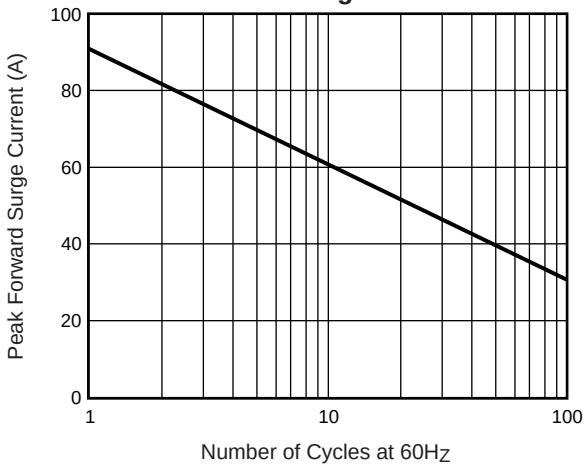

Fig. 3 – Typical Reverse Current

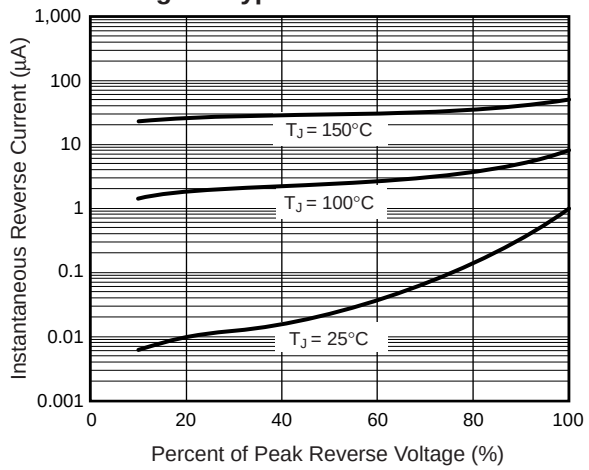

Fig. 4 – Typical Forward Volyage

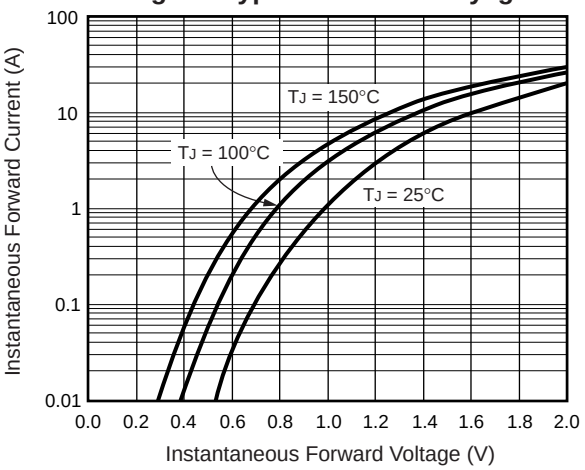

Fig. 5 – Typical Junction Capacitance