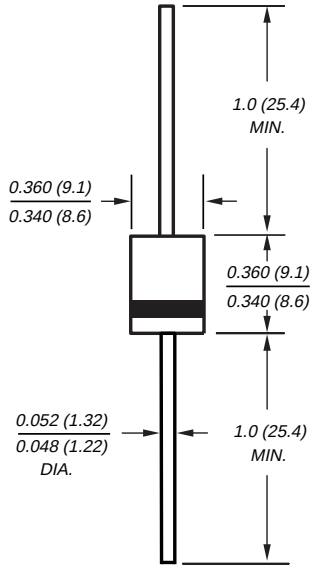
SUF30G and SUF30J

Vishay Semiconductors
formerly General Semiconductor

Ultrafast Plastic Rectifier

Reverse Voltage 400 to 600V
Forward Current 3.0A

P600



Dimensions in inches and (millimeters)

Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Glass passivated chip junction
- Ultrafast recovery time for high efficiency
- High forward surge current capability
- Low leakage current
- Low power loss
- High temperature soldering guaranteed: 260°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

Mechanical Data

Case: Molded epoxy body over passivated chip
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.07 oz., 2.1 g

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	SUF30G	SUF30J	Units
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	V
Maximum RMS voltage	V_{RMS}	280	420	V
Maximum DC blocking voltage	V_{DC}	400	600	V
Maximum average forward rectified current, 0.200" (5.0mm) lead length at T_A = 60°C	$I_{F(AV)}$	3.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) at T_A = 60°C	I_{FSM}	80		A
Typical thermal resistance (1)	$R_{\Theta JA}$	25		°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150		°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	SUF30G	SUF30J	Units
Maximum instantaneous forward voltage at 3.0A (2)	V_F	1.80	2.0	V
Maximum peak reverse current T_A = 25°C at rated peak reverse voltage T_A = 100°C	I_R	10 100		µA
Maximum reverse recovery time at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	35		ns
Typical junction capacitance at 4.0V, 1MHz	C_J	60		pF

Notes:

(1) Thermal resistance from junction to ambient at 0.200" (5.0mm) lead length with both leads attached to heat sink

(2) Pulse test: 300µs pulse width, 1% duty cycle

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

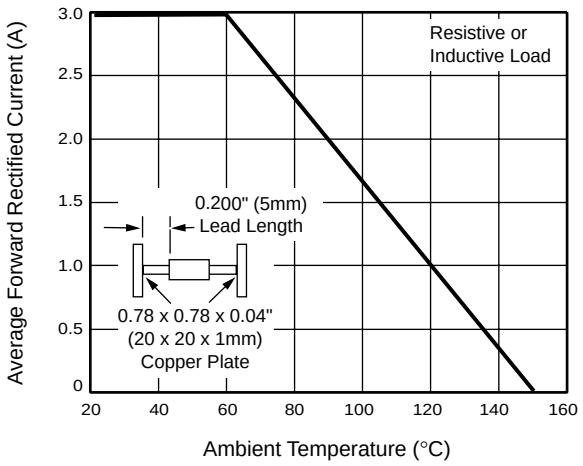


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

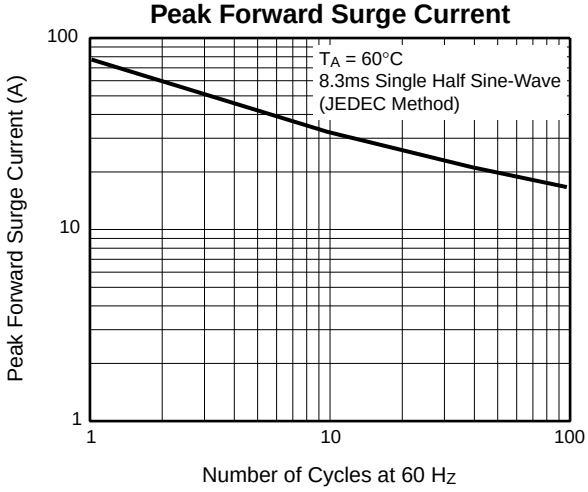


Fig. 3 – Typical Instantaneous Forward Characteristics

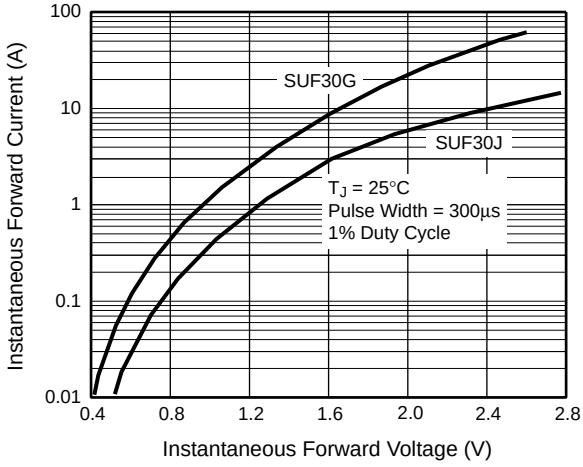


Fig. 4 – Typical Reverse Leakage Characteristics

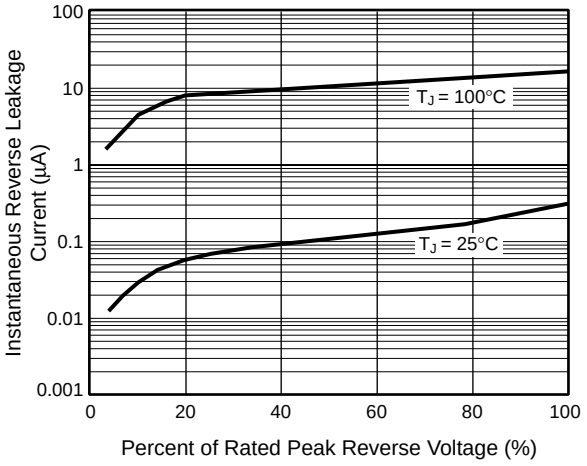


Fig. 5 – Typical Junction Capacitance

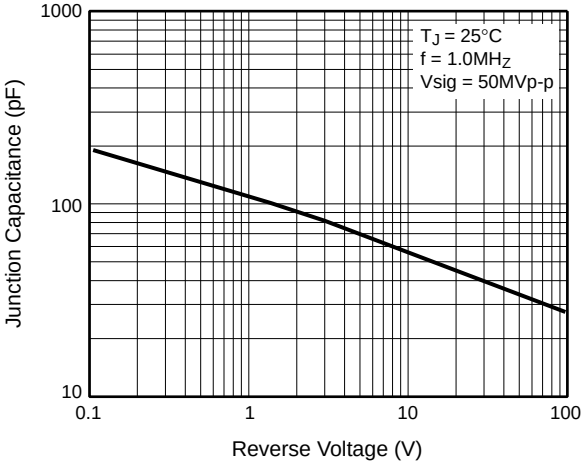


Fig. 6 – Typical Transient Thermal Impedance