Ultrafast Plastic Rectifier

Case Style P600

FEATURES

- Glass passivated chip junction
- Ideal for printed circuit boards
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	80 A
t_{rr}	35 ns
V_F	1.8 V, 2.0 V
T_J max.	150 °C

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

MECHANICAL DATA

Case: P600

Epoxy meets UL 94V-0 flammability rating

T**erminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SUF30G	SUF30J	UNIT
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" (5.0 mm) 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	I_{FSM}	80		A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**SUF30G**	**SUF30J**	**UNIT**
Maximum instantaneous forward voltage (1)	3.0 A		V_F	1.8	2.0	V
Maximum peak reverse current at rated peak reverse voltage		T_A = 25 °C T_A = 100 °C	I_R	10 100		µA
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	35		ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	60		pF

Note:

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**SUF30G**	**SUF30J**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$	25		°C/W

Note:

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SUF30J-E3/54	1.834	54	800	13" diameter paper tape and reel
SUF30J-E3/73	1.834	73	300	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

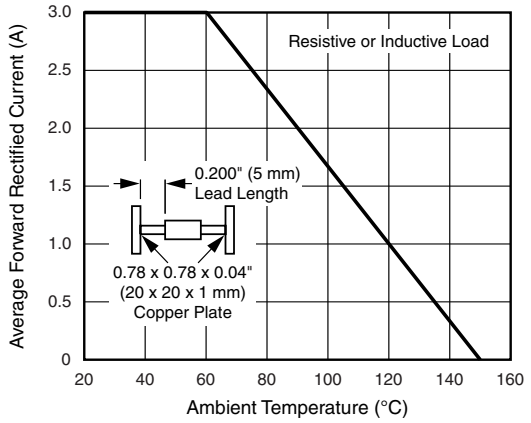

Figure 1. Forward Current Derating Curve

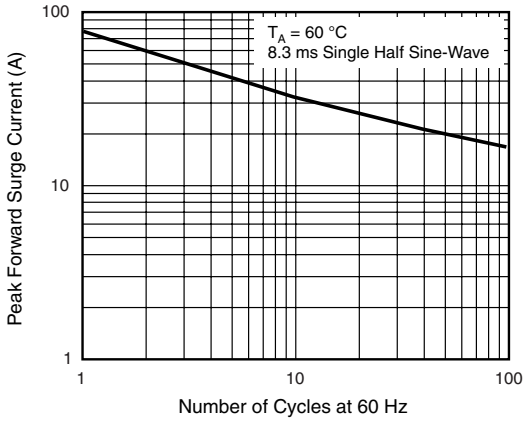

Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

For technical questions within your region, please contact one of the following:
PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com

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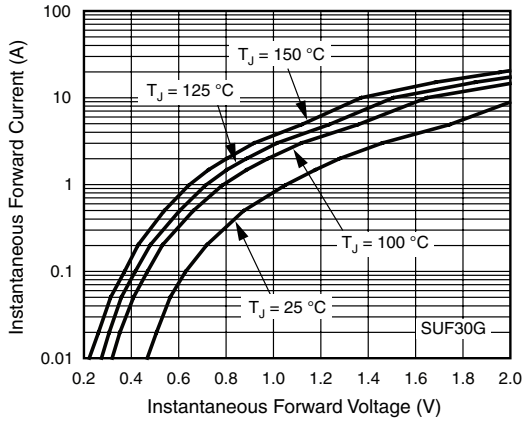


Figure 3. Typical Instantaneous Forward Characteristics

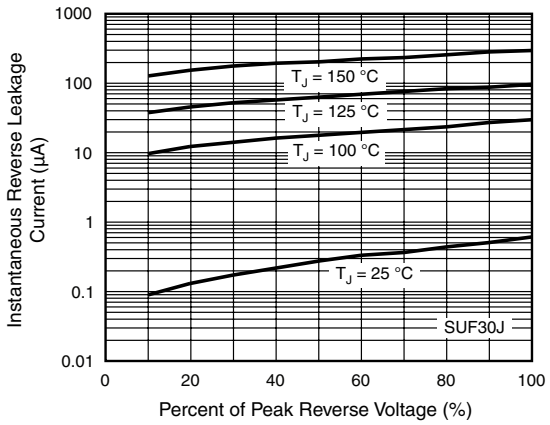


Figure 6. Typical Reverse Leakage Characteristics

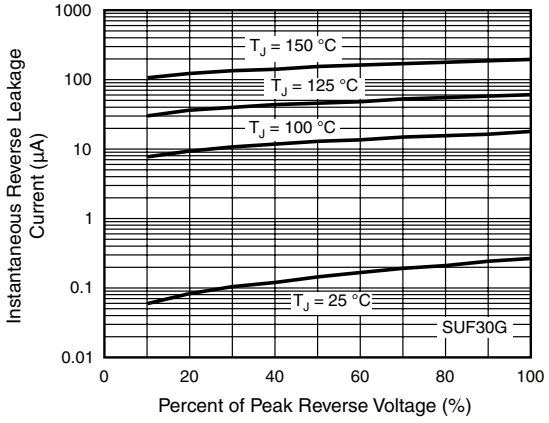


Figure 4. Typical Reverse Leakage Characteristics

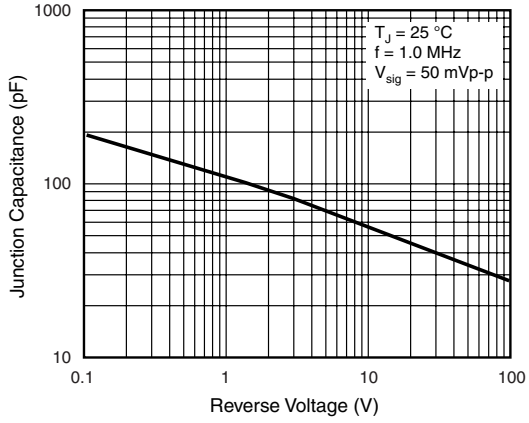


Figure 7. Typical Junction Capacitance

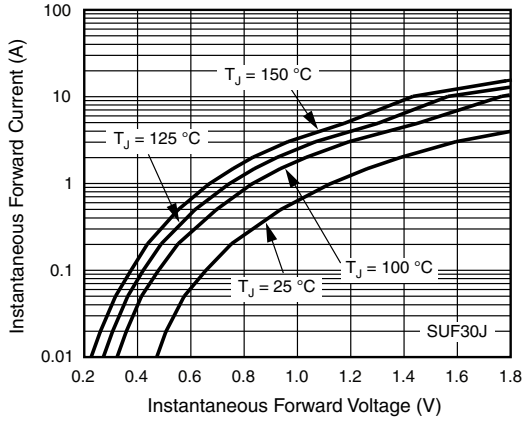


Figure 5. Typical Instantaneous Forward Characteristics

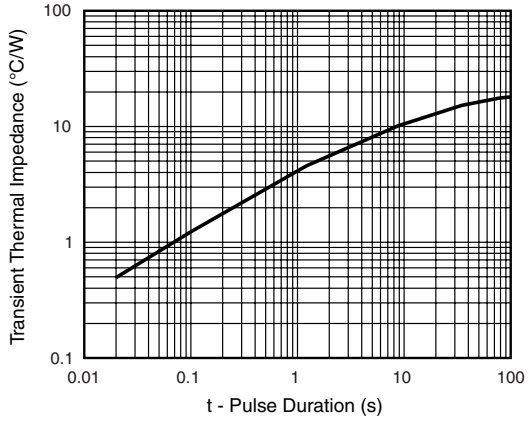
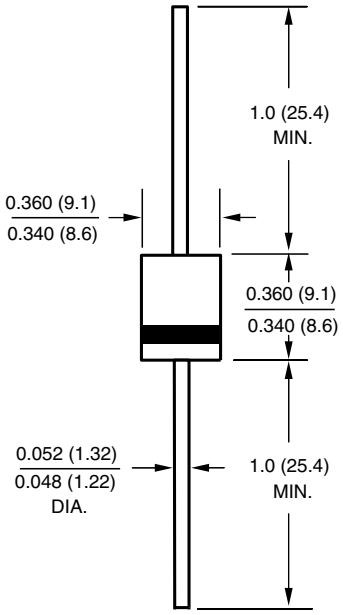


Figure 8. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

P600



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