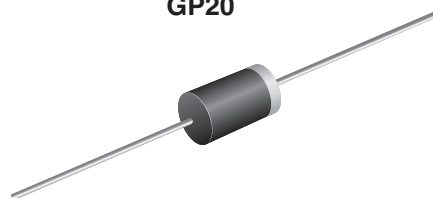


Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.5 A
V_{RRM}	400 V, 600 V
I_{FSM}	50 A
t_{rr}	35 ns
V_F	1.8 V
T_j max.	150 °C

GP20



Features

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



Mechanical Data

Case: GP20

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Typical Applications

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

Maximum Ratings

$T_A = 25$ °C unless otherwise specified

Parameter	Symbols	SUF15G	SUF15J	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, 0.375" (9.5 mm) lead length at $T_A = 50$ °C	$I_{F(AV)}$	1.5		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50		A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

Electrical Characteristics

$T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Test condition	Symbols	SUF15G	SUF15J	Units
Maximum instantaneous forward voltage	at 1.5 A ⁽¹⁾	V_F	1.8		V
Maximum peak reverse current at rated peak reverse voltage	$T_A = 25\text{ °C}$ $T_A = 100\text{ °C}$	I_R	10 100		μA
Maximum reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	35		ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	35		pF

Notes:

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

Thermal Characteristics

$T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Symbols	SUF15G	SUF15J	Units
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	65 20		$^{\circ}\text{C/W}$

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

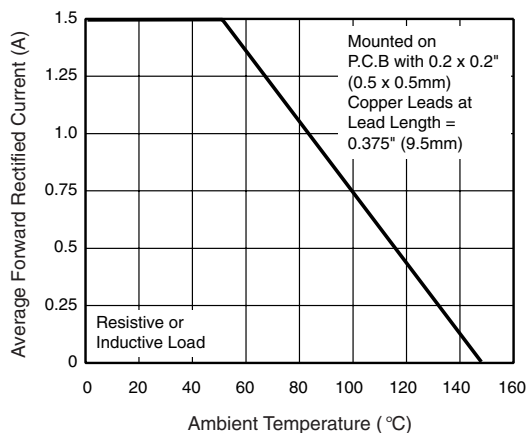


Figure 1. Maximum Forward Current Derating Curve

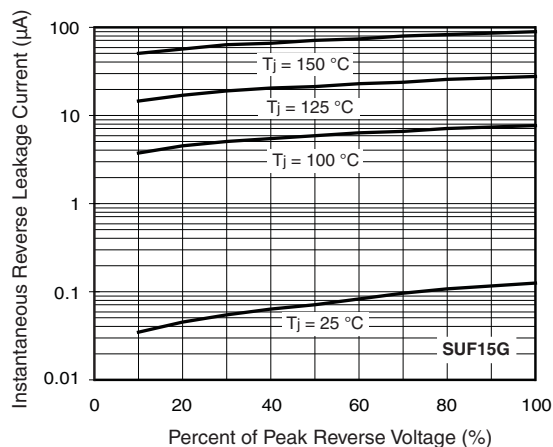


Figure 4. Typical Reverse Leakage Characteristics

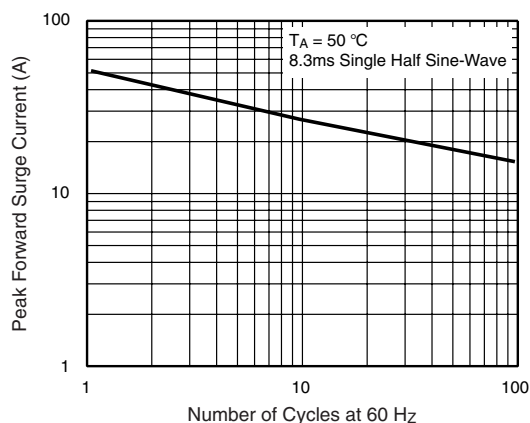


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

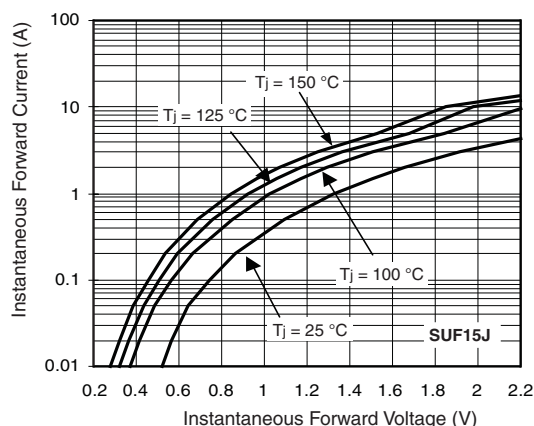


Figure 5. Typical Instantaneous Forward Characteristics

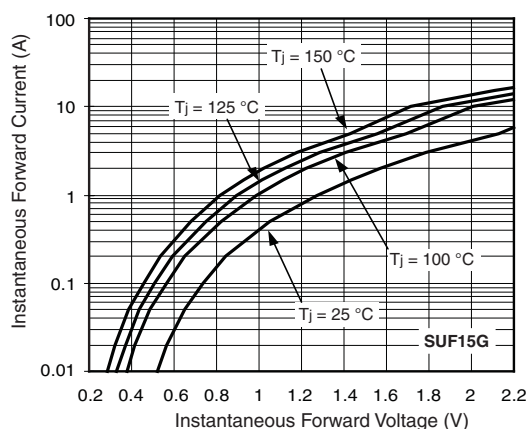


Figure 3. Typical Instantaneous Forward Characteristics

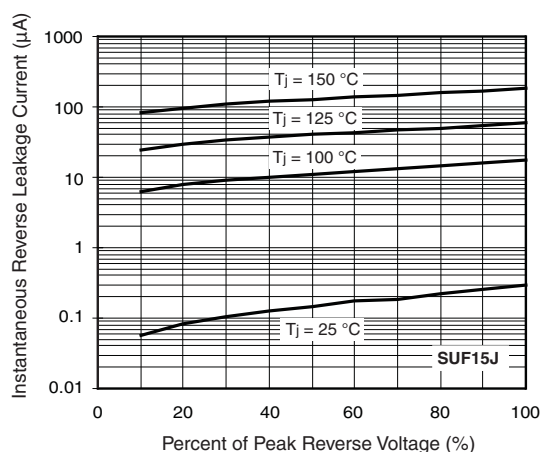


Figure 6. Typical Reverse Leakage Characteristics

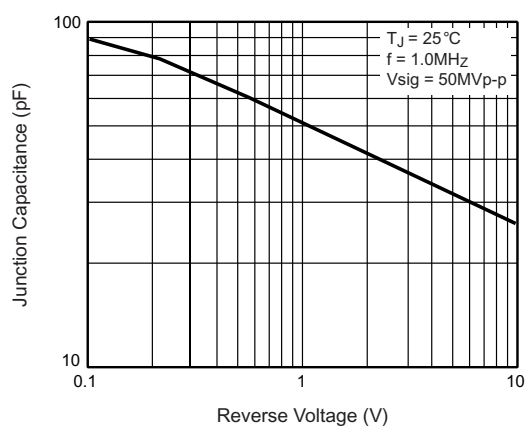


Figure 7. Typical Junction Capacitance

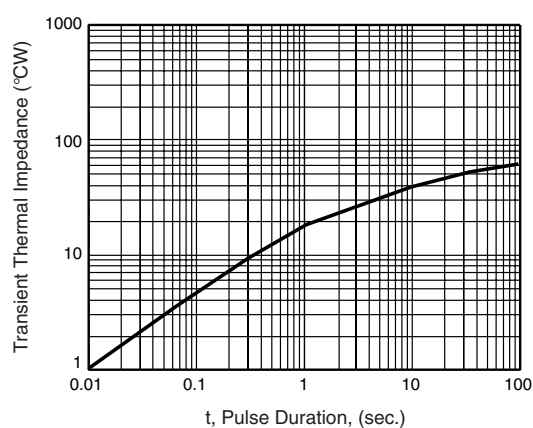
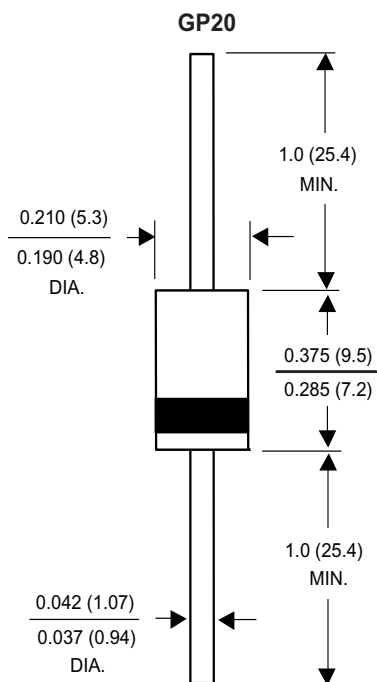


Figure 8. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)





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