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SRP100A, SRP100B, SRP100D, SRP100G, SRP100J, SRP100K

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Vishay General Semiconductor

Fast Switching Plastic Rectifier



DO-204AL (DO-41)

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer, and telecommunication.

Note

- These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-204AL, molded epoxy body
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V
I_{FSM}	30 A
t_{rr}	100 ns, 200 ns
I_R	10 μ A
V_F	1.3 V
T_J max.	125 °C
Package	DO-204AL (DO-41)
Diode variation	Single die

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	SRP100A	SRP100B	SRP100D	SRP100G	SRP100J	SRP100K	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55\text{ °C}$	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30						A
Operating junction temperature range	T_J	- 50 to + 125						°C
Storage temperature range	T_{STG}	- 50 to + 150						°C



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	SRP100A	SRP100B	SRP100D	SRP100G	SRP100J	SRP100K	UNIT
Maximum instantaneous forward voltage	1.0 A	V _F	1.3						V
Maximum DC reverse current at rated DC blocking voltage	T _A = 25 °C	I _R	10						μA
	T _A = 100 °C		200						
Maximum reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A	t _{rr}	100				200		ns
Typical junction capacitance	4.0 V, 1 MHz	C _J	12						pF

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	SRP100A	SRP100B	SRP100D	SRP100G	SRP100J	SRP100K	UNIT	
Typical thermal resistance	R _{θJA} ⁽¹⁾	41						°C/W	

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SRP100J-E3/54	0.33	54	5500	13" diameter paper tape and reel
SRP100J-E3/73	0.33	73	3000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

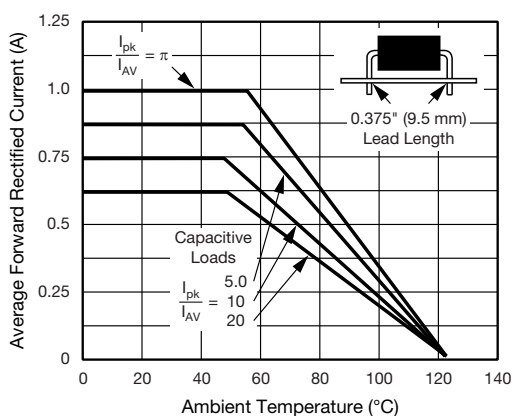


Fig. 1 - Forward Current Derating Curves

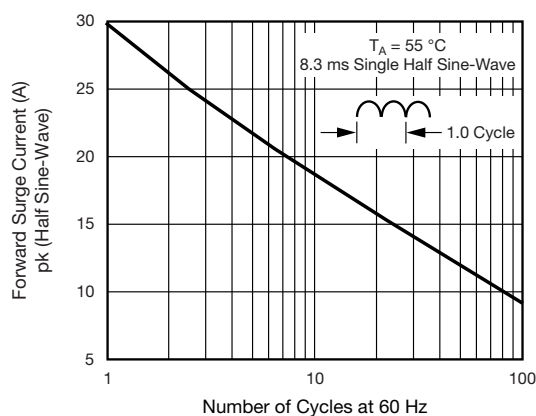


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current



SRP100A, SRP100B, SRP100D, SRP100G, SRP100J, SRP100K

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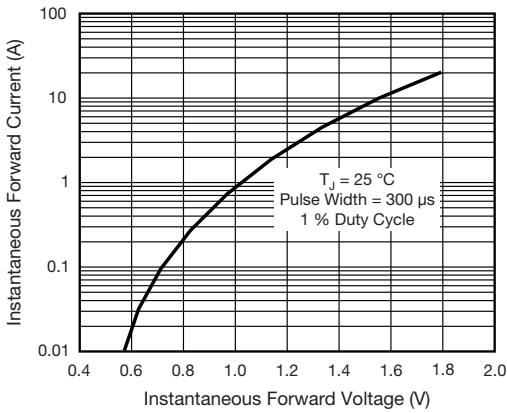


Fig. 3 - Typical Instantaneous Forward Characteristics

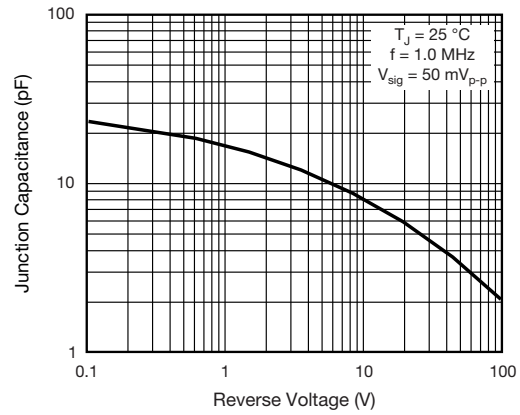


Fig. 5 - Typical Junction Capacitance

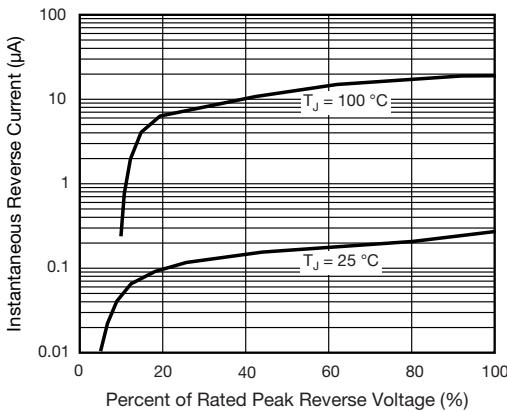


Fig. 4 - Typical Reverse Characteristics

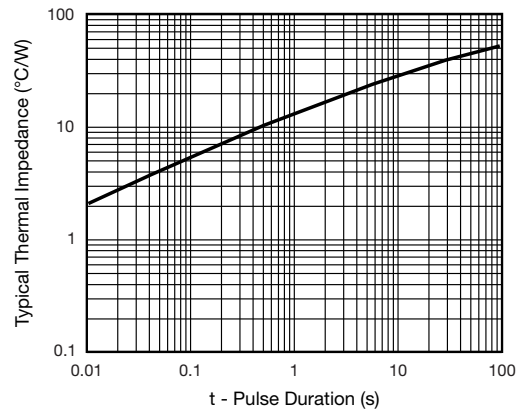
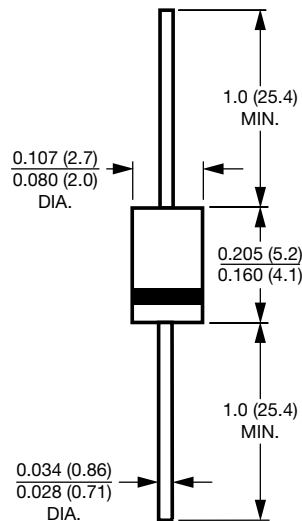


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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