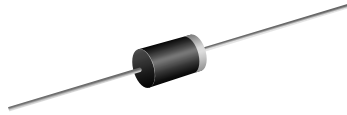


Fast Switching Plastic Rectifier


DO-204AL (DO-41)

FEATURES

- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


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 Q101 qualified.)

MECHANICAL DATA

Case: DO-204AL, molded epoxy body

Epoxy meets UL-94V-0 flammability rating

Terminals: 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 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

MAXIMUM RATINGS ($T_A = 25$ °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 $T_A = 55$ °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

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 T _A = 100 °C	I _R				10 200			μA
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 ⁽¹⁾	R _{θJA}				41			°C/W	

Note:

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

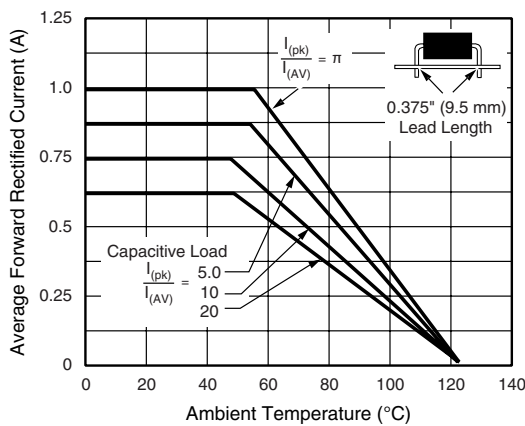


Figure 1. Forward Current Derating Curves

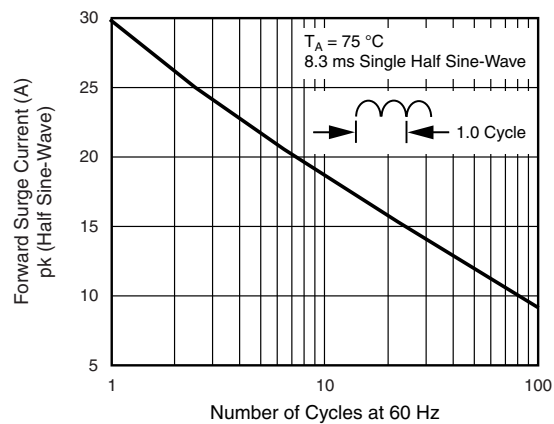


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

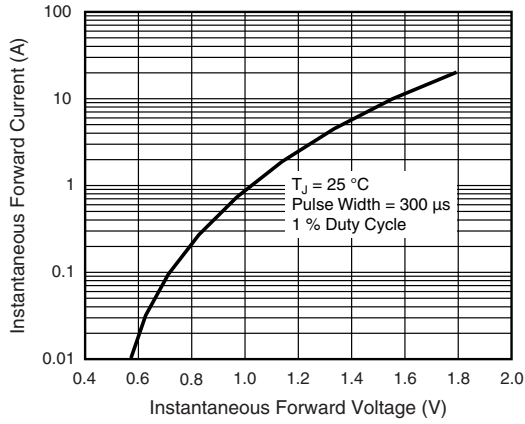


Figure 3. Typical Instantaneous Forward Characteristics

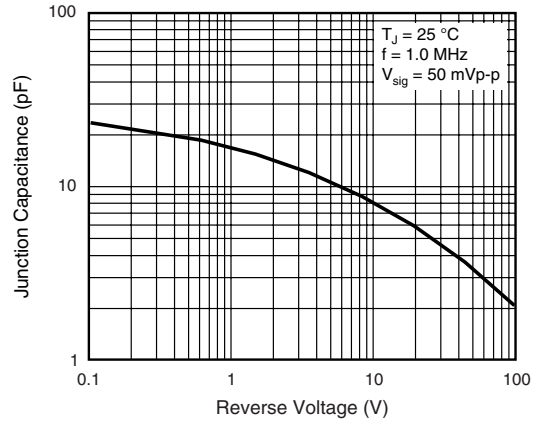


Figure 5. Typical Junction Capacitance

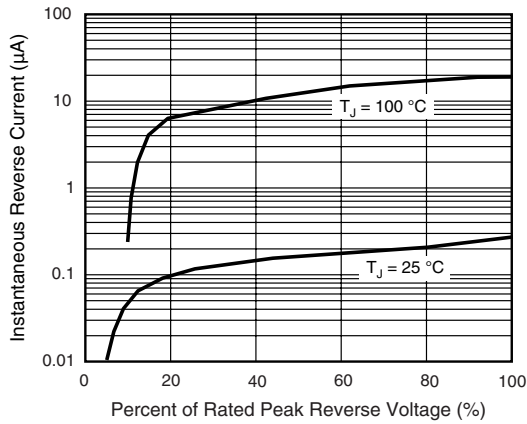


Figure 4. Typical Reverse Characteristics

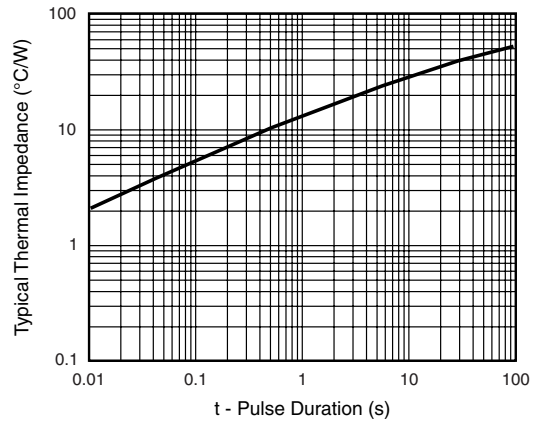
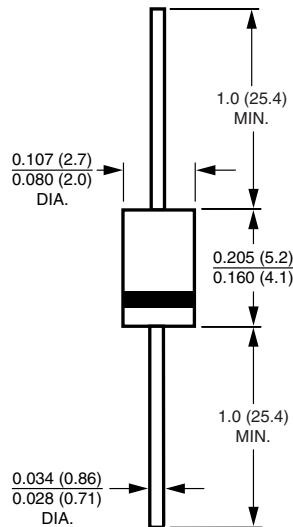


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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