



THE DATASHEET OF SD940-T

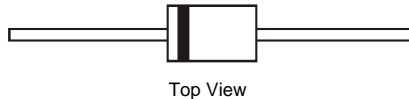


Features

- High Current Capability and Low Forward Drop
- High Surge Capacity
- Guard Ring for Transient Protection
- Low Power Loss, High Efficiency
- **Lead Free Finish, RoHS Compliant (Note 1)**

Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish — Tin. Leads Solderable per MIL-STD-202, Method 208 **(E3)**
- Polarity: Cathode Band
- Mounting Position: Any
- Ordering Information: See Page 3
- Weight: 1.1 grams (approximate)



Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	SD930	SD940	SD945	Unit
Peak Repetitive Reverse Voltage	V_{RRM}				
Working Peak Reverse Voltage	V_{RWM}	30	40	45	V
DC Blocking Voltage	V_R				
Voltage Rate of Change	dv/dt	10,000			V/ μs
Maximum Average Forward Current (Note 3) @ $T_C = 120^\circ\text{C}$	I_O	9.0			A
Maximum Peak One-Cycle Surge Current @ 5 μs Sine Wave @ 10ms Sine Wave	I_{FSM}	2150 340			A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 2)	$R_{\theta JL}$	8.0	K/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage (Note 4)	V_F	-	-	0.48	V	$I_F = 9.0\text{A}, T_J = 25^\circ\text{C}$
		-	-	0.42		$I_F = 9.0\text{A}, T_J = 125^\circ\text{C}$
		-	-	0.57		$I_F = 18\text{A}, T_J = 25^\circ\text{C}$
		-	-	0.52		$I_F = 18\text{A}, T_J = 125^\circ\text{C}$
Peak Reverse Current (Note 4)	I_R	-	-	0.8 70	mA	@ Rated $V_R, T_A = 25^\circ\text{C}$ @ Rated $V_R, T_A = 100^\circ\text{C}$
Total Capacitance	C_T	-	-	900	pF	$V_R = 4\text{V}, f = 1\text{MHz}$

- Notes:
1. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
 2. Thermal resistance from junction to lead vertical PC board mounting, 9.5mm lead length.
 3. Device mounted to heat sink with 1/8" lead length.
 4. Pulse width $\leq \mu\text{s}$ - Duty Cycle $\leq 2\%$.
 5. Short duration pulse test used to minimize self-heating effect.

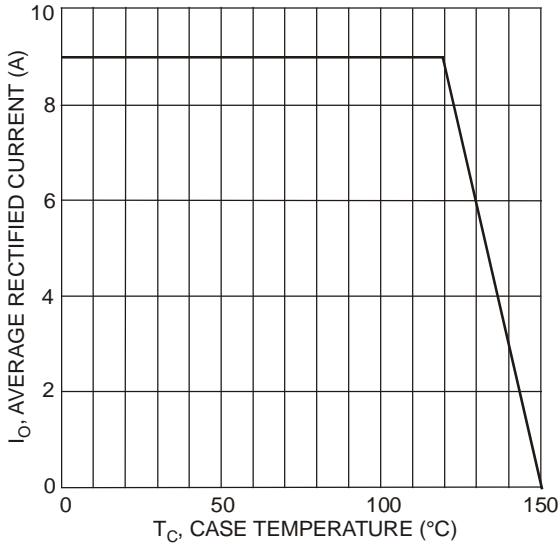


Fig. 1 Forward Current Derating Curve

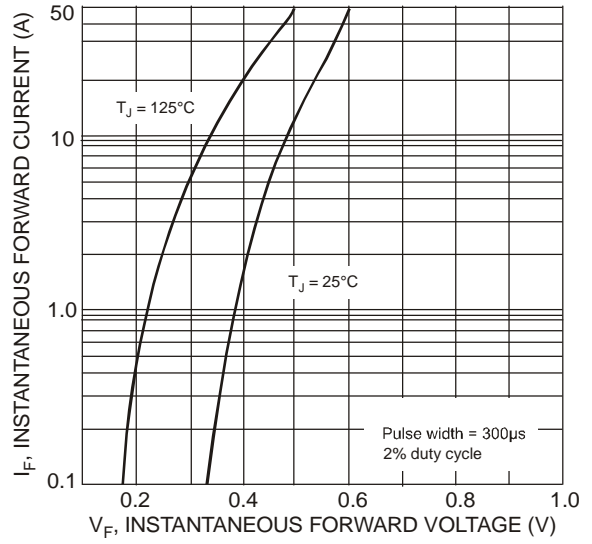


Fig. 2 Typical Forward Characteristics

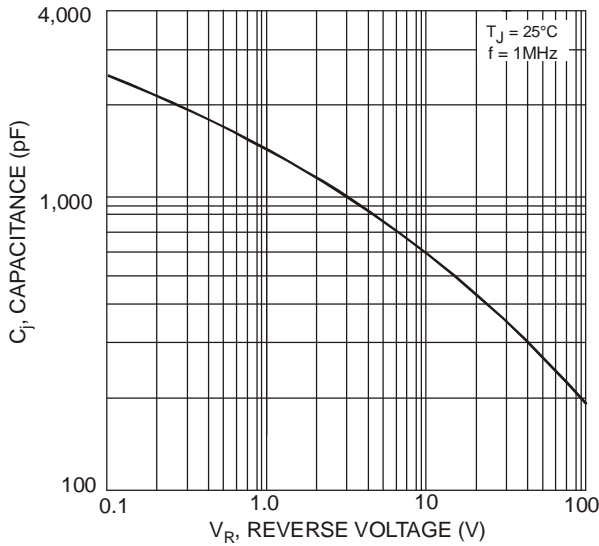


Fig. 3 Maximum Junction Capacitance

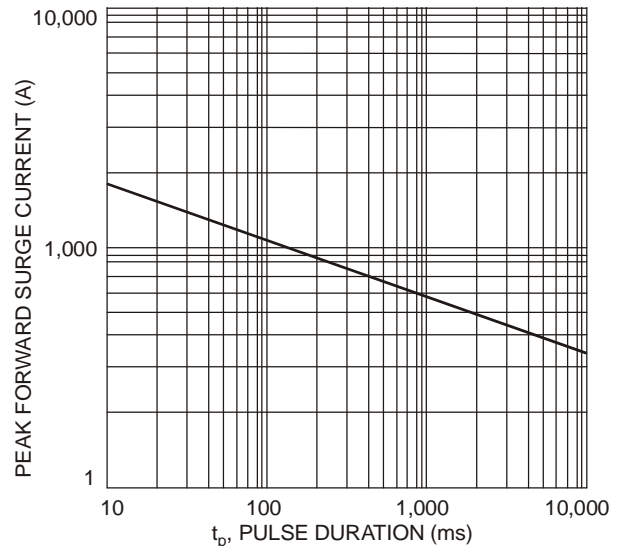


Fig. 4 Maximum Non-repetitive Surge Current

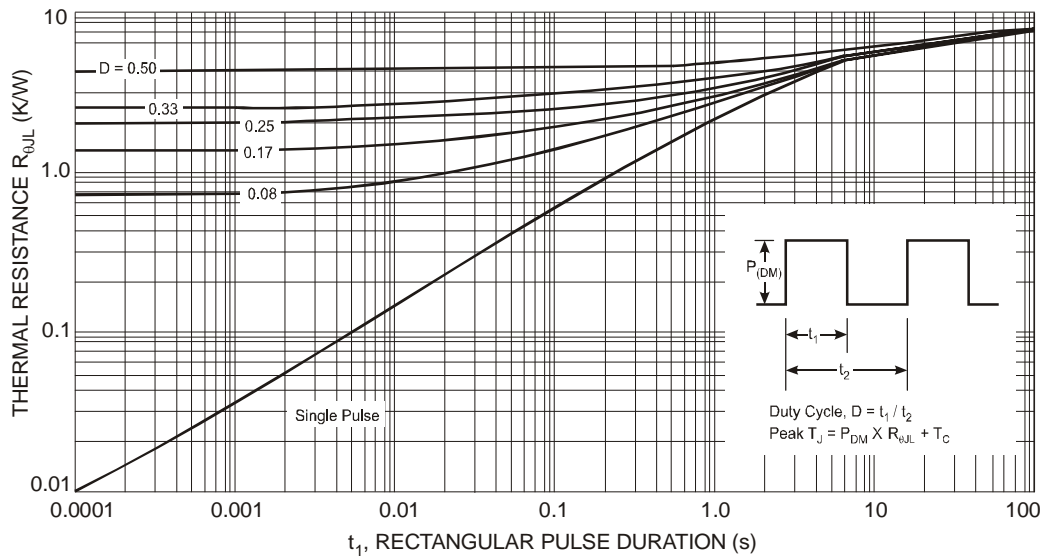
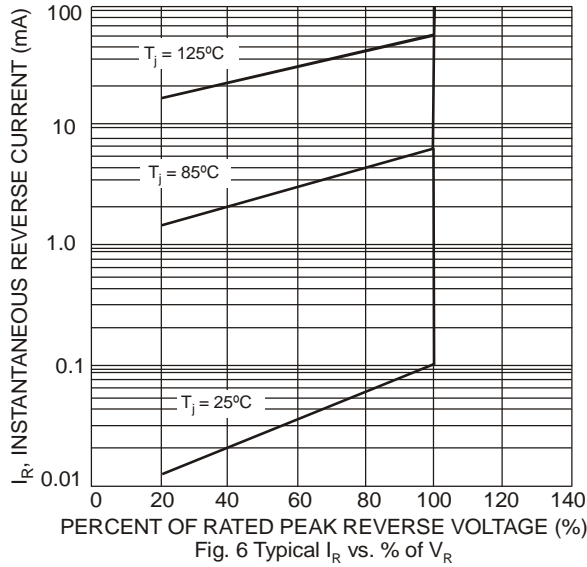


Fig. 5 Typical Thermal Resistance $R_{\theta_{JL}}$

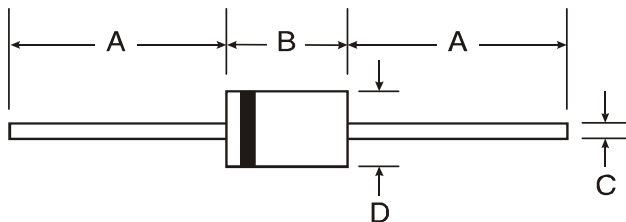


Ordering Information (Note 6)

Part Number	Case	Packaging
SD930-B	DO-201AD	500/Bulk
SD930-T	DO-201AD	1.2K/Tape & Reel, 13-inch
SD940-B	DO-201AD	500/Bulk
SD940-T	DO-201AD	1.2K/Tape & Reel, 13-inch
SD945-B	DO-201AD	500/Bulk
SD945-T	DO-201AD	1.2K/Tape & Reel, 13-inch

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Package Outline Dimensions



DO-201AD		
Dim	Min	Max
A	25.40	—
B	7.20	9.50
C	1.20	1.30
D	4.80	5.30
All Dimensions in mm		

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