



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SDR75U20 thru SDR75U50

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SDR75U

Screening ^{2/}

___ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Pin Configuration (See Table 1)

___ = Normal (Cathode to Stud)
R = Reverse (Anode to Stud)

Family/Voltage

20 = 200V
30 = 300V
40 = 400V
50 = 500V

75 Amp
ULTRAFAST RECOVERY
HIGH POWER RECTIFIER
200-500 Volt
50 nsec

Features:

- Low Reverse Leakage Current
- Single Chip Construction
- PIV to 500V
- Hermetically Sealed
- Low Thermal Resistance
- Higher Voltage Devices Up to 1KV Available*
- Fast and Ultra Fast Recovery Versions Available*
- For Reverse Polarity Add Suffix "R"
- TX, TXV, and S-Level Screening Available ^{2/}

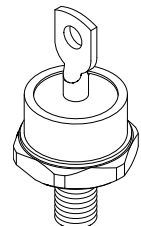
*Contact Factory

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	SDR75U20 SDR75U30 SDR75U40 SDR75U50	V_{RRM} V_{RWM} V_R	200 300 400 500	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$)		I_o	75	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $T_A = 25^\circ\text{C}$)		I_{FSM}	450	Amps
Operating & Storage Temperature		$T_{OP} \& T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Total Thermal Resistance Junction to Case		$R_{\theta JC}$	0.85	$^\circ\text{C/W}$

Notes:

- 1/ For ordering information, price, operating curves, and availability- contact factory.
2/ Screening based on MIL-PRF-19500. Screening flows available on request.

DO-5



NOTE: All specifications are subject to change without notification.
SSD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: RC0152A

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Electrical Characteristics		Symbol	Max	Typ	Units
Instantaneous Forward Voltage Drop ($T_A = 25^\circ\text{C}$, 300 μs pulse)	$I_F = 10\text{Adc}$	V_{F1}	1200	1060	mV_{DC}
	$I_F = 25\text{Adc}$	V_{F2}	1500	1300	
	$I_F = 50\text{Adc}$	V_{F3}	1800	1550	
	$I_F = 75\text{Adc}$	V_{F4}	2000	1750	
Instantaneous Forward Voltage Drop ($T_A = -55^\circ\text{C}$, 300 μs pulse)	$I_F = 10\text{Adc}$	V_{F6}	-	1050	mV_{DC}
	$I_F = 25\text{Adc}$	V_{F7}	-	1200	
	$I_F = 50\text{Adc}$	V_{F8}	1700	1350	
	$I_F = 75\text{Adc}$	V_{F9}	-	1425	
Instantaneous Forward Voltage Drop ($T_A = 100^\circ\text{C}$, 300 μs pulse)	$I_F = 10\text{Adc}$	V_{F11}	-	950	mV_{DC}
	$I_F = 25\text{Adc}$	V_{F12}	-	1200	
	$I_F = 50\text{Adc}$	V_{F13}	-	1500	
	$I_F = 75\text{Adc}$	V_{F14}	-	1700	
Instantaneous Forward Voltage Drop ($T_A = 125^\circ\text{C}$, 300 μs pulse)	$I_F = 10\text{Adc}$	V_{F16}	-	900	mV_{DC}
	$I_F = 25\text{Adc}$	V_{F17}	-	1150	
	$I_F = 50\text{Adc}$	V_{F18}	1900	1450	
	$I_F = 75\text{Adc}$	V_{F19}	-	1650	
Instantaneous Forward Voltage Drop ($T_A = 150^\circ\text{C}$, 300 μs pulse)	$I_F = 10\text{Adc}$	V_{F21}	-	850	mV_{DC}
	$I_F = 25\text{Adc}$	V_{F22}	-	1100	
	$I_F = 50\text{Adc}$	V_{F23}	-	1400	
	$I_F = 75\text{Adc}$	V_{F24}	-	1625	
Reverse Leakage Current (Rated V_R , $T_A = 25^\circ\text{C}$, 300 μs pulse minimum)		I_{R1}	75	2	μA
Reverse Leakage Current (Rated V_R , $T_A = 100^\circ\text{C}$, 300 μs pulse minimum)		I_{R2}	-	250	μA
Reverse Leakage Current (Rated V_R , $T_A = 125^\circ\text{C}$, 300 μs pulse minimum)		I_{R3}	25	1	mA
Reverse Leakage Current (Rated V_R , $T_A = 150^\circ\text{C}$, 300 μs pulse minimum)		I_{R4}	-	3	mA
Reverse Recovery Time ($I_F = 500\text{mA}$, $I_R = 1\text{Amp}$, $I_{RR} = 250\text{mA}$, $T_A = 25^\circ\text{C}$)		t_{RR}	50	40	nsec
Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	$V_R = 5V_{\text{DC}}$	C_J	-	420	pF
	$V_R = 10V_{\text{DC}}$		450	330	

Table 1- PIN ASSIGNMENT

Code	Configuration	Terminal	Stud
—	Normal	Anode	Cathode
R	Reverse	Cathode	Anode

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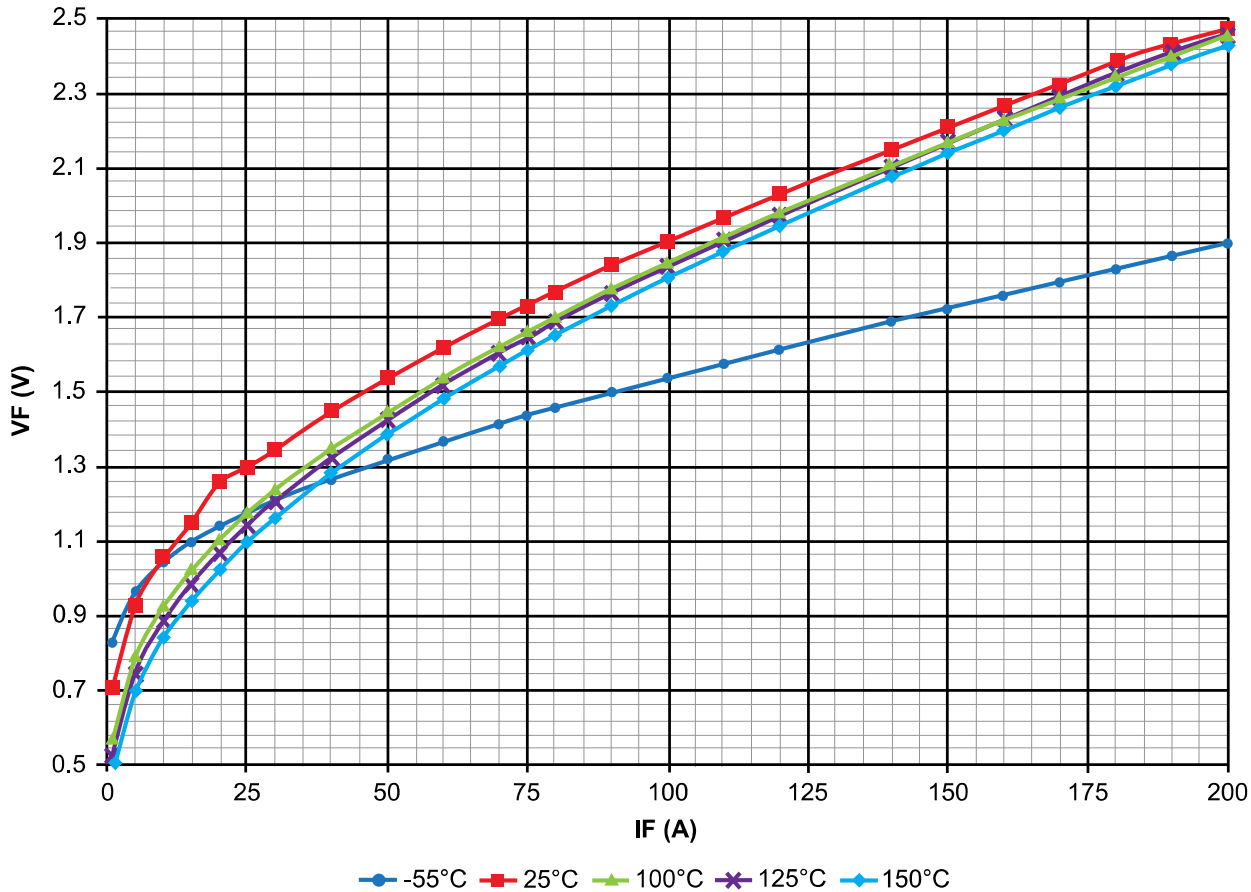
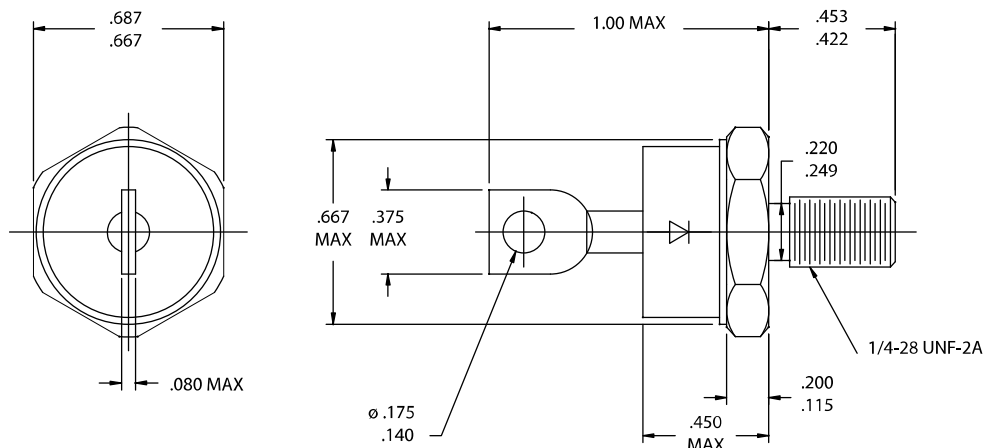


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DO-5 Outline (Normal Pin Configuration Shown):



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