



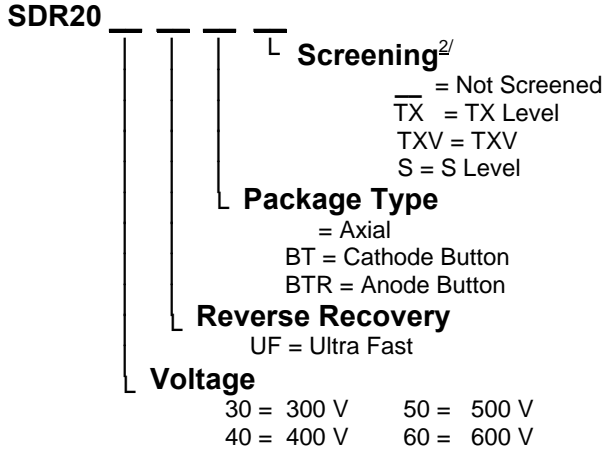
**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
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 ssdi@ssdi-power.com \* www.ssdi-power.com

**SDR2030UF thru  
SDR2060UF Series**

**Designer's Data Sheet**

**Part Number / Ordering Information <sup>1/</sup>**



**20 AMP  
Ultra Fast Rectifier  
300 - 600 Volts  
45 nsec**

**Features:**

- Replaces DO-4 and DO-5
- Ultra Fast Recovery
- Low Reverse Leakage Current
- Hermetically Sealed Void-Free Construction<sup>3/</sup>
- Monolithic Single Chip Construction
- High Surge Rating
- Low Thermal Resistance
- Higher Voltages Available - Contact Factory
- Replacement for MSARS20E060G
- TX, TXV, and Space Level Screening Available

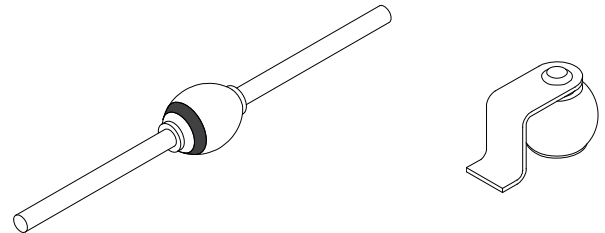
MAXIMUM RATINGS		Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage</b>	SDR2030UFBT	$V_{RRM}$ $V_{RWM}$ $V_R$	300	<b>Volts</b>
	SDR2040UFBT		400	
	SDR2050UFBT		500	
	SDR2060UFBT		600	
<b>Average Rectified Forward Current</b> (Resistive Load, 60Hz Sine Wave)	Button @T <sub>c</sub> ≤ 100°C Axial @T <sub>L</sub> ≤ 55°C	$I_o$	20 10	<b>Amps</b>
<b>Peak Surge Current</b> (8.3 ms Pulse, Half sine Wave Superimposed on I <sub>o</sub> , Allow Junction to Reach Equilibrium Between Pulses, T <sub>A</sub> =25°C)		$I_{FSM}$	300	<b>Amps</b>
<b>Operating and Storage Temperature</b>		T <sub>op</sub> & T <sub>stg</sub>	-65 to +175	<b>°C</b>
<b>Maximum Thermal Resistance</b>	BT Button	$R_{\theta JC}$	2.0	<b>°C/W</b>
	BTR Button	$R_{\theta JC}$	2.2	
	Axial @ 0.25"	$R_{\theta JL}$	6.0	

**Notes:**

- <sup>1/</sup> For ordering information, price, operating curves, and availability, contact factory.  
<sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.  
<sup>3/</sup> PIND testing not required on void free devices per MIL-PRF-19500.

**Axial**

**Button**



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

**DATA SHEET #: RC0146C**

**DOC**



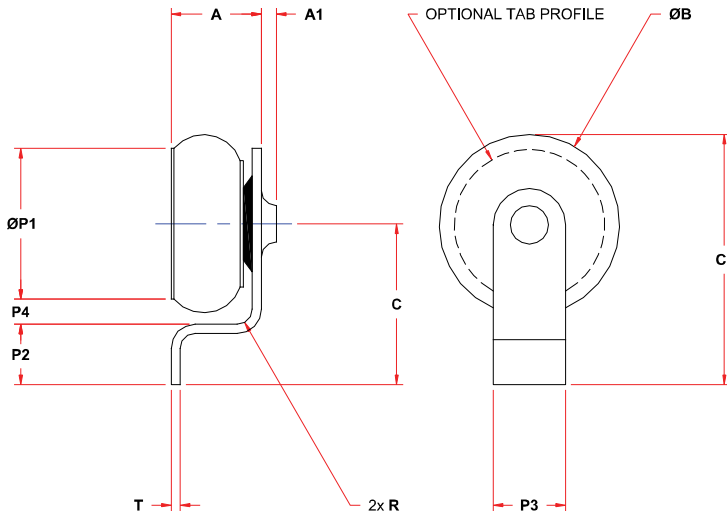
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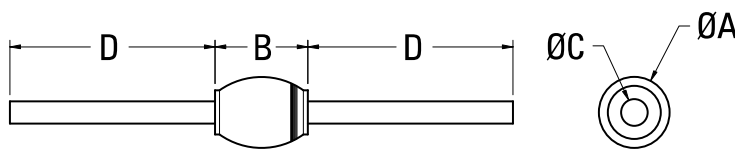
# SDR2030UF thru SDR2060UF Series

ELECTRICAL CHARACTERISTICS (T <sub>a</sub> = 25 °C unless specified)	Symbol	Max	Unit
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 5A pulsed	V <sub>F1</sub>	1.25	V
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 10A pulsed	V <sub>F2</sub>	1.40	V
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 20A pulsed	V <sub>F3</sub>	1.65	V
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 20A pulsed T <sub>A</sub> = -55°C	V <sub>F4</sub>	2.05	V
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 20A pulsed T <sub>A</sub> = 125°C	V <sub>F5</sub>	1.70	V
<b>Instantaneous Forward Voltage Drop</b> I <sub>F</sub> = 10A pulsed T <sub>A</sub> = -55°C	V <sub>F4</sub>	1.45	V
<b>Reverse Leakage Current</b> Rated V <sub>R</sub> , pulsed	I <sub>R1</sub>	5	μA
<b>Reverse Leakage Current</b> Rated V <sub>R</sub> , pulsed, T <sub>A</sub> = 125°C)	I <sub>R2</sub>	500	μA
<b>Minimum Breakdown Voltage</b> I <sub>R</sub> = 100 μA	BVR	Rated	V (min)
<b>Junction Capacitance</b> (V <sub>R</sub> = 10 V <sub>DC</sub> , f = 1MHz, T <sub>A</sub> = 25°C)	C <sub>J</sub>	80	pF
<b>Reverse Recovery Time</b> (I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0 A, I <sub>RR</sub> = 0.25A, T <sub>A</sub> = 25°C)	t <sub>rr</sub>	45	nsec

## CASE OUTLINES: Button



Dim	Min	Max
A	0.150"	0.165"
A1	—	0.020"
ØB	0.135"	0.165"
C	0.190"	0.210"
C1	0.280" REF	
P1	0.110"	0.130"
P2	0.055"	0.075"
P3	0.090"	0.110"
P4	0.065"	—
T	0.008"	0.012"
R	0.015" REF	



DIM	MIN	MAX
A	0.135"	0.165"
B	0.150"	0.180"
C	0.057"	0.062"
D	.500"	—

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**DOC**