



Solid State Devices, Inc.

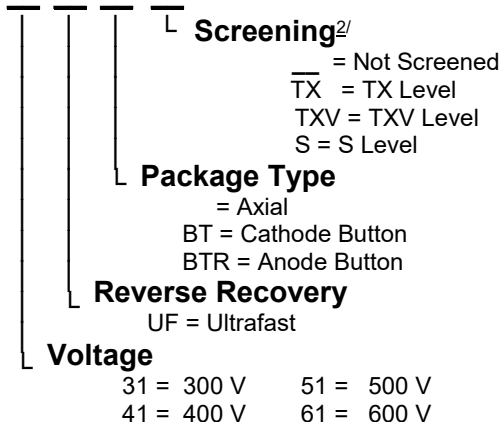
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 ssdi@ssdi-power.com * www.ssdi-power.com

SDR2031UF thru SDR2061UF Series

Designer's Data Sheet

Part Number / Ordering Information ^{1/}

SDR20



**20 AMP
ULTRAFast RECTIFIER**
300 - 600 Volts
45 nsec

Features:

- Replaces DO-4, DO-5, and TO-25X type devices
- Ultrafast Recovery
- Low Reverse Leakage Current
- Hermetically Sealed Void-Free Construction^{3/}
- High Surge Rating
- Low Thermal Resistance
- Higher Voltages Available - Contact Factory
- Replacement for MSARS20E060G
- TX, TXV, and Space Level Screening Available

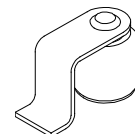
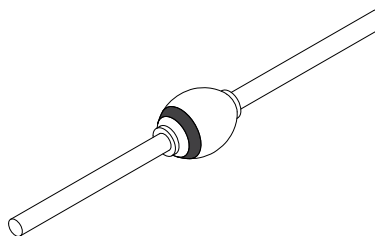
MAXIMUM RATINGS		Symbol	Value	Unit
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SDR2031UF	V_{RRM}	300	V
	SDR2041UF	V_{RWM}	400	
	SDR2051UF	V_R	500	
	SDR2061UF		600	
Average Rectified Forward Current (Resistive Load, 60Hz Sine Wave)	Button @ $T_c \leq 100^\circ\text{C}$	I_o	20	A
	Axial @ $T_L \leq 55^\circ\text{C}$		10	
Peak Surge Current (8.3 ms Pulse, Half sine Wave Superimposed on I_o , Allow Junction to Reach Equilibrium Between Pulses, $T_A = 25^\circ\text{C}$)		I_{FSM}	300	A
Operating and Storage Temperature		$T_{op} \text{ \& } T_{stg}$	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance	BT Button	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$
	BTR Button	$R_{\theta JC}$	2.2	
	Axial @ 0.25"	$R_{\theta JL}$	6.0	

Notes:

- ^{1/} For ordering information, price, operating curves, and availability, contact factory.
- ^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.
- ^{3/} 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 #: RC0215A

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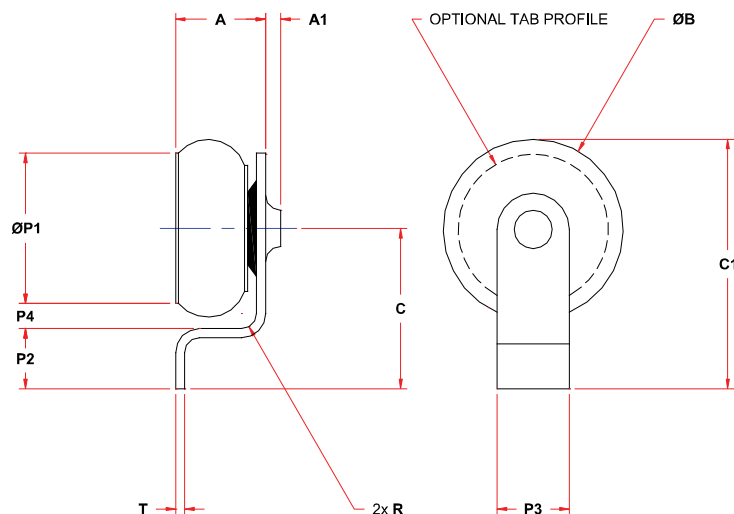
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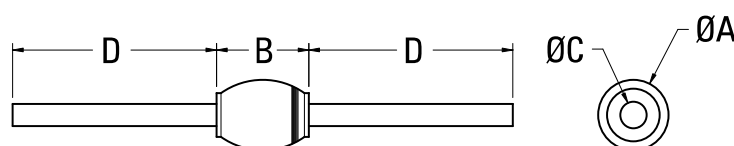
SDR2031UF thru SDR2061UF Series

ELECTRICAL CHARACTERISTICS (T _A = 25°C unless specified)	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage Drop I _F = 5 A pulsed	V_{F1}	1.16	1.25	V
Instantaneous Forward Voltage Drop I _F = 10 A pulsed	V_{F2}	1.30	1.40	V
Instantaneous Forward Voltage Drop I _F = 20 A pulsed	V_{F3}	1.50	1.65	V
Instantaneous Forward Voltage Drop I _F = 20 A pulsed, T _A = -55°C	V_{F4}	1.35	2.05	V
Instantaneous Forward Voltage Drop I _F = 20 A pulsed, T _A = 125°C	V_{F5}	1.60	1.70	V
Instantaneous Forward Voltage Drop I _F = 10 A pulsed, T _A = -55°C	V_{F6}	1.34	1.45	V
Reverse Leakage Current Rated V _R , pulsed	I_{R1}	0.20	5	μA
Reverse Leakage Current V _R = Rated V _{DC} , pulsed, T _A = 125°C	I_{R2}	110	200	μA
Minimum Breakdown Voltage I _R = 100 μA	BVR	110% Rated	100% Rated	V (min)
Junction Capacitance V _R = 10 V _{DC} , f = 1 MHz, T _A = 25°C	C_J	73	80	pF
Reverse Recovery Time I _F = 0.5 A, I _R = 1.0 A, I _{RR} = 0.25 A, T _A = 25°C	t_{rr}	42 155 @ 125°C	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	0.100"	0.120"
P4	0.065"	—
T	0.008"	0.015"
R	0.015" REF	



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

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