



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

SDR04500S.22 SDR04600S.22

4 AMP HERMETIC SURFACE MOUNT HYPERFAST RECTIFIER 500 - 600 VOLTS

Designer's Data Sheet

Part Number / Ordering Information^{1/}

SDR04

- Screening^{2/}
 - = Not Screened
 - TX = TX Level
 - TXV = TXV Level
 - S = S Level
- Package
 - S.22 = SMD.22
- Voltage
 - 500 = 500 V
 - 600 = 600 V

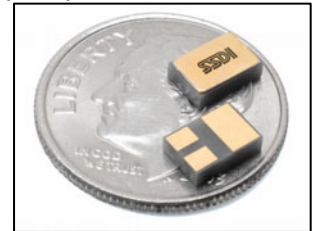
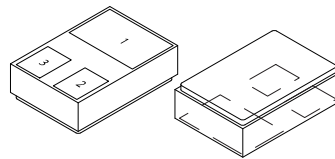
- FEATURES:**
- Extremely Small Footprint
 - Extremely Low Forward Voltage Drop
 - Low Reverse Leakage
 - Hermetically Sealed Surface Mount Package
 - Enhanced Equivalent for 1N6627/1N6628 Applications
 - 175°C Operating Junction Temperature
 - Weight: 0.12 g (typical)
 - TX, TXV, and S Level Screening Available - Consult Factory

MAXIMUM RATINGS ^{3/ 4/}		Symbol	Value	Unit
Peak Repetitive Reverse and DC Blocking Voltage	SDR04500 SDR04600	V_{RRM} V_{RWM} V_R	500 600	V
Average Rectified Forward Current (Resistive load, 60 Hz, sine wave, $T_A = 25^\circ\text{C}$)		I_o	4	A
Peak Surge Current (8.3 ms pulse, half sine wave, allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$)		I_{FSM}	40	A
Operating & Storage Temperature		T_{OP} & T_{stg}	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance (Junction to Case)		$R_{\theta JC}$	18 (typ 15)	$^\circ\text{C/W}$

NOTES:

- 1/ For ordering information, price, and availability - contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request.
- 3/ Unless otherwise specified, all electrical characteristics @ 25°C.
- 4/ For optimal performance, connect anode terminals together.

SMD.22 (S.22)



(dime used for size reference)



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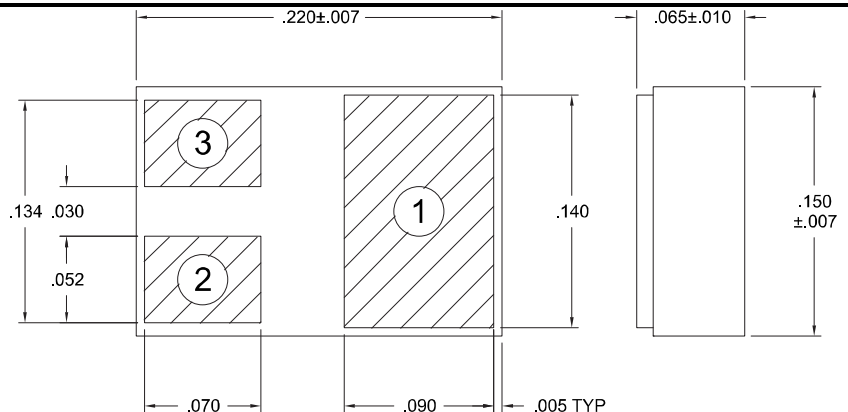
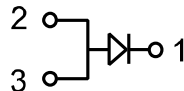
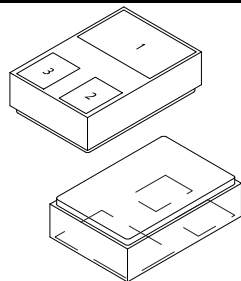
SDR04500S.22 SDR04600S.22

ELECTRICAL CHARACTERISTICS ^{4/}		Symbol	Min	Typ	Max	Unit
Instantaneous Forward Voltage Drop (T _A = 25°C, 300 µsec pulse)	I _F = 0.5 A	V _{F1}	-	0.95	-	V _{DC}
	I _F = 1.0 A	V _{F2}	-	1.06	1.15	
	I _F = 2.0 A	V _{F3}	-	1.18	1.35	
	I _F = 4.0 A	V _{F4}	-	1.35	1.50	
Instantaneous Forward Voltage Drop (T _A = 100°C, 300 µsec pulse)	I _F = 0.5 A	V _{F5}	-	0.80	-	V _{DC}
	I _F = 1.0 A	V _{F6}	-	0.91	-	
	I _F = 2.0 A	V _{F7}	-	1.05	-	
	I _F = 4.0 A	V _{F8}	-	1.3	-	
Instantaneous Forward Voltage Drop (T _A = 125°C, 300 µsec pulse)	I _F = 0.5 A	V _{F9}	-	0.75	-	V _{DC}
	I _F = 1.0 A	V _{F10}	-	0.86	0.95	
	I _F = 2.0 A	V _{F11}	-	1.0	-	
	I _F = 4.0 A	V _{F12}	-	1.25	1.35	
Instantaneous Forward Voltage Drop (T _A = -55°C, 300 µsec pulse)	I _F = 0.5 A	V _{F13}	-	1.06	-	V _{DC}
	I _F = 1.0 A	V _{F14}	-	1.15	1.25	
	I _F = 2.0 A	V _{F15}	-	1.26	-	
	I _F = 4.0 A	V _{F16}	-	1.5	1.65	
Breakdown Voltage (I _R = 50 µA)	T _A = 25°C T _A = -55°C	BV _R	600 550	660 600	- -	V
Reverse Leakage Current (Rated V _R , T _A = 25°C, 300 µsec pulse minimum)		I _{R1}	-	0.20	5	µA
Reverse Leakage Current (Rated V _R , T _A = 100°C, 300 µsec pulse minimum)		I _{R2}	-	0.85	-	µA
Reverse Leakage Current (Rated V _R , T _A = 125°C, 300 µsec pulse minimum)		I _{R3}	-	2	10	µA
Reverse Leakage Current (Rated V _R , T _A = 150°C, 300 µsec pulse minimum)		I _{R4}	-	10	-	µA
Reverse Recovery Time I _F = 0.5 A; I _{RM} = 1.0 A, I _(REC) = 0.25 A	T _A = 25°C	t _{RR}	-	18	30	ns
	T _A = 125°C		-	60	-	
Forward Recovery Voltage Forward Recovery Time	I _F = 1.0 A	V _{fr}	-	1.4	1.6	V
	I _F = 0.5 A	t _{fr}	-	50	65	
Junction Capacitance (f = 1 MHz, T _A = 25°C)	V _R = 10 V	C _J	-	11	15	pF

**Package Outline:
SMD.22 (S.22)**

PIN OUT:
 PIN 1: CATHODE
 PIN 2: ANODE
 PIN 3: ANODE

Note: For optimal performance, connect anode terminals together.



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

DATA SHEET #: RC0206D

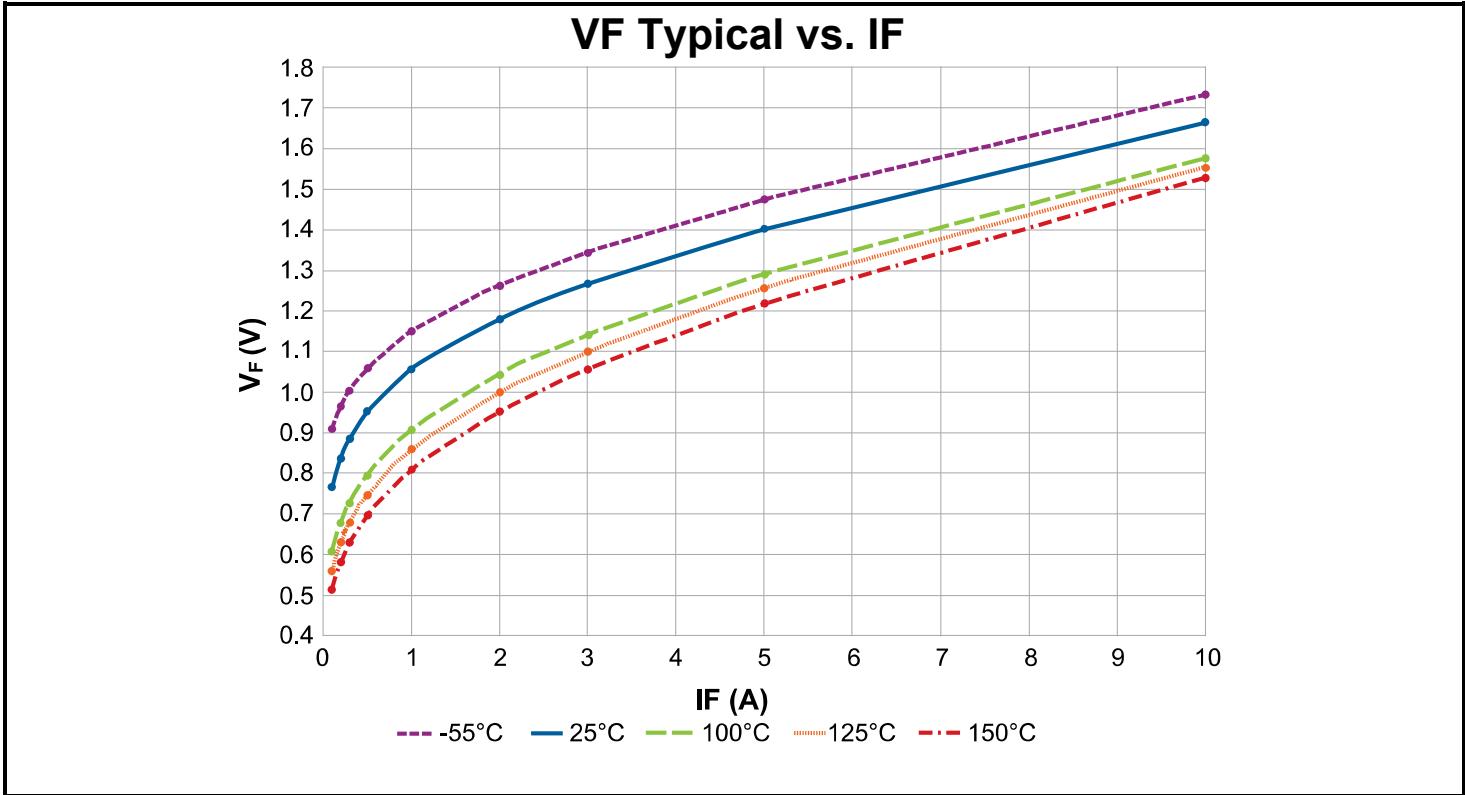
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