



SOLID STATE DEVICES, INC.

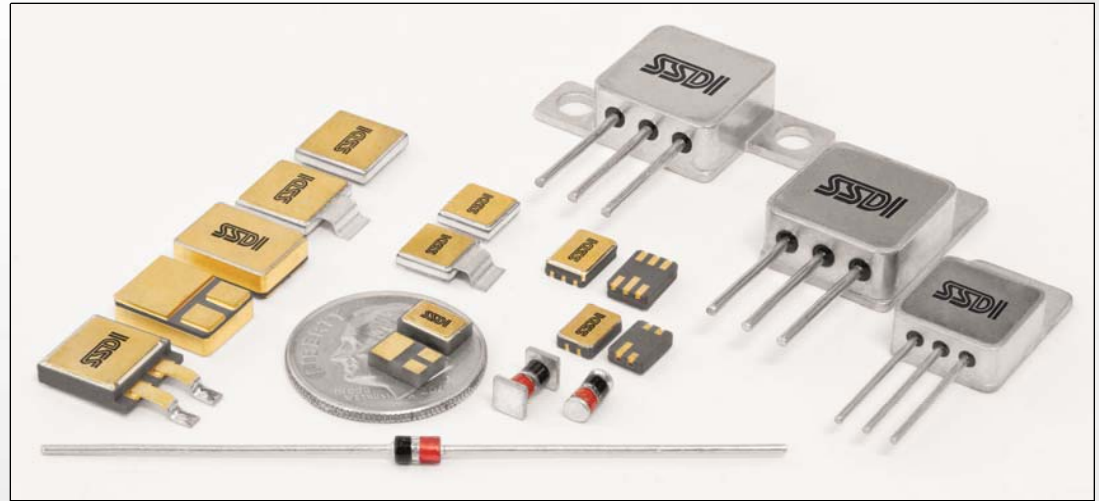
Technical Solutions for Your Total Program Needs

**SPACE PARTS
WORKING GROUP 2013**

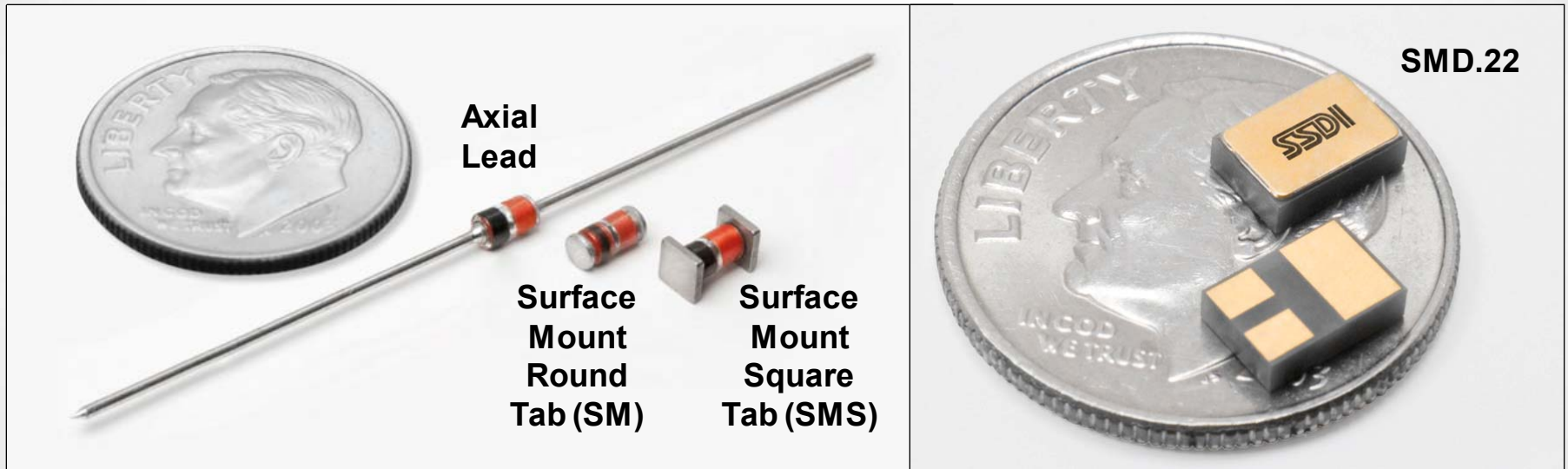
200 Volt Hermetic Silicon Schottky Family

Features

- Highest voltage ratings available for hermetic silicon-based Schottkys: up to 200 volts
- Output current range: 2 – 80 amps
- Low forward voltage drop
- Low reverse leakage current
- Hermetically sealed packages, including surface mount options
- Single device as well as centertap configurations available
- Multi-chip configurations available
- TX, TXV, and S level screening available



2 Amps, 150 – 200 Volts



Maximum Ratings & Electrical Characteristics

Series	I_o (A)	I_{FSM} (A)	V_F (V)	I_R (μ A)
SPD1502 – SPD2002	2	55	0.95 (@ 2 A)	100
SSR04200CTS.22*	2	20	1.00 (@ 2 A)	1

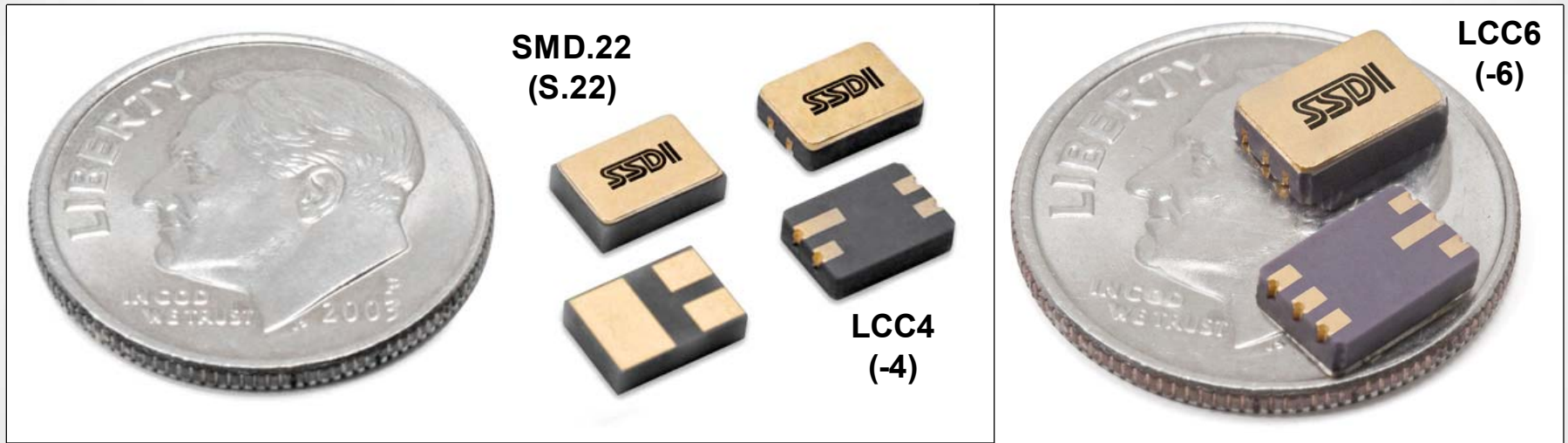
*Ratings / Electrical Characteristics per leg

Replacement for 1N6761-1

Maximum Ratings & Electrical Characteristics

		1N6761-1	SPD1502 – SPD2002 Series		SSR04200CTS.22 Series (Per Leg)
I_o (A)		1	2		2
V_R (V)		100	150 - 200		150 - 200
I_{FSM} (A)		25	55		20
V_F (V) @ 1A		0.69	0.85		0.87 (0.825 typ)
I_R (μ A) @ 25°C		100	100		1
I_R (mA) @ 100°C		12	2		2
C_J (pF) @ 5 V		70	40 @ 10 V		40
Package		DO-213AB	SM	SMS	SMD.22
DIM	L	0.205"	0.210"	0.235"	0.227"
	W	0.105"	0.105"	0.135"	0.157"
	H	0.105"	0.105"	0.135"	0.075"

4 – 8 Amps, 150 – 200 Volts



Maximum Ratings & Electrical Characteristics

Series	I_O (A)	I_{FSM} (A)	V_F (V)	I_R (μ A)
SSR04200S.22/-4	4	50	1.00 (@ 4 A)	2
SSR08200CT-6*	4	50	1.00 (@ 4 A)	2
SSR08200S.22	8	80	0.95 (@ 8 A)	5
SSR08200CTS.22*	4	40	0.95 (@ 4 A)	2

*Ratings / Electrical Characteristics per leg

Replacement for 1N6831

Maximum Ratings & Electrical Characteristics

		1N6831	SSR04200S.22/-4 Series		SSR08200CT-6 Series (Per Leg)
I_O (A)		3	4		4
V_R (V)		200	150 -200		150 -200
I_{FSM} (A)		60	50		50
V_F (V) @ 1A		0.83	0.85 (0.77 typ)		0.85 (0.77 typ)
I_R (μ A) @ 25°C		3	2		2
I_R (μ A) @ 125°C		200	200 (150 typ)		200 (150 typ)
C_J (pF) @ 5 V		60	40 typ		21 typ
Package		US	SMD.22	LCC-4	LCC-6
DIM	L	0.225"	0.227"	0.225"	0.250"
	W	0.148"	0.157"	0.160"	0.175"
	H	0.148"	0.075"	0.076"	0.077"

10 – 20 Amps, 150 – 200 Volts



Maximum Ratings & Electrical Characteristics

Series	I_o (A)	I_{FSM} (A)	V_F (V)	I_R (μ A)
SED10HB200, SED10HE200, SED10HF200	10	200	0.85 (@ 10 A)	10
SSR20200CTG/S.5*	10	100	1.00 (@ 10 A)	10

*Ratings / Electrical Characteristics per leg

Replacement for 1N6833

Maximum Ratings & Electrical Characteristics

		1N6833 (per leg)		SSR20200CTG / S.5 Series (per leg)	
I_O (A)		15		10	
V_R (V)		200		150 - 200	
I_{FSM} (A)		250		100	
V_F (V) @ 5 A		0.86		0.9 (0.81 typ)	
I_R (μ A) @ 25°C		20		10	
I_R (mA) @ 100°C		1.5		0.5 typ	
C_J (pF) @ 10 V		220		175	
Package		TO-254	SMD.5	Cerpack	SMD.5
DIM	L	1.550"	0.405"	0.580"	0.408"
	W	0.545"	0.301"	0.340"	0.304"
	H	0.260"	0.122"	0.115"	0.135"

40 – 80 Amps, 150 – 200 Volts



Maximum Ratings & Electrical Characteristics

Series	I_o (A)	I_{FSM} (A)	V_F (V)	I_R (mA)
SED40KB200 & SSR40G200	40	500	0.95 (@ 40 A)	0.01
SSR40200J	40	500	1.1 (@ 40 A)	0.01
SSR80200CTM / Z	80	250*	1.05 (@ 40 A)*	0.01*

*Ratings / Electrical Characteristics per leg

1N7066 – 1N7068 Series

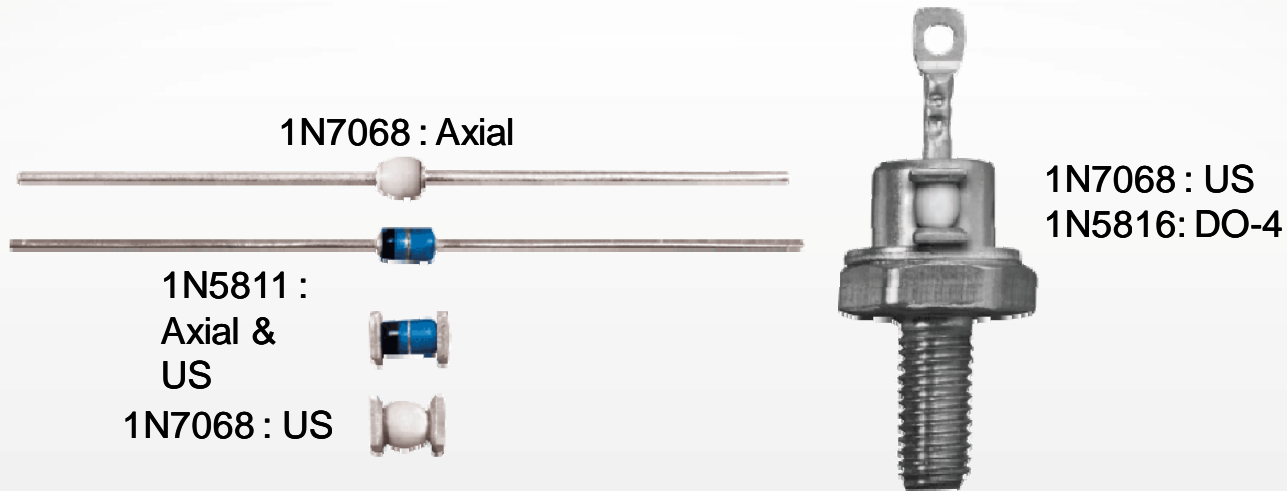
MIL-PRF-19500 / 768

10 A, 30 nS Hyper Fast Rectifiers

- 100 – 200 Volts
- High Surge Current: 300 A maximum
- Hermetically Sealed
- Void Free Ceramic Frit Construction
- High Temperature Category I Eutectic Metallurgical Bond
- Low Forward Voltage Drop: 0.95V @ 10A
- Solid Silver Leads
- Axial Lead Higher Current Replacements for:
1N5807, 1N5809, 1N5811 (similar physical size)
- Possible SMS Replacements for Stud Mount:
1N5812, 1N5814, 1N5816
- TX, TXV, and S Level Screening Available



1N7068 vs. 1N5811 & 1N5816



Electrical Characteristics		1N5811	1N7066 - 68	1N5816
Peak Repetitive Reverse Voltage and DC Blocking Voltage (V_{RRM} , V_{RWM} , V_R)		150 V	1N7066 – 100 V 1N7067 – 150 V 1N7068 – 200 V	150 V
Average Rectified Forward Current (I_O)		6 A	10 A	20 A
Peak Surge Current (I_{FSM})		125 A (@25°C)	300 A (@25°C)	400 A (@100°C)
Instantaneous Forward Voltage Drop (V_F)	@ 6 A	0.925 V	0.850 V (typ) / 0.900 V	-
	@ 10 A	-	0.950 V	-
	@ 20 A	-	1.020 V	0.950 V
Reverse Recovery Time (t_{RR})		30 nS	30 nS	35 nS
Thermal Resistance		$R_{\theta JL}$: 22°C/W ($L=.375''$) $R_{\theta JEC}$: 6.5°C/W	$R_{\theta JL}$: 8°C/W ($L=.125''$) $R_{\theta JEC}$: 4.5°C/W	$R_{\theta JC}$: 1.5°C/W
Package		Axial, US	Axial, US	DO-4



SDR2060UFBT

Maximum Ratings & Electrical Characteristics

Series	Condition	Value
V_R	-	600 V
I_O	@ $T_C \leq 100^\circ\text{C}$	20 A
I_{FSM}	$T_A = 25^\circ\text{C}$	300 A
$T_{OP} \& T_{STG}$	-	-65°C to $+175^\circ\text{C}$
$R_{\theta JC}$	BT = Cathode Button	2.0°C/W
	BTR = Cathode Button	2.2°C/W
V_F	$I_F = 20\text{A}$ pulsed, @ 25°C	1.65 V
I_{R1}	Rated V_R , $T_A = 25^\circ\text{C}$	5 μA
I_{R2}	Rated V_R , $T_A = 125^\circ\text{C}$	500 μA
t_{RR}	$I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{RR} = 0..25\text{A}$, $T_A = 25^\circ\text{C}$	45 nsec max

SDR2060UFBT

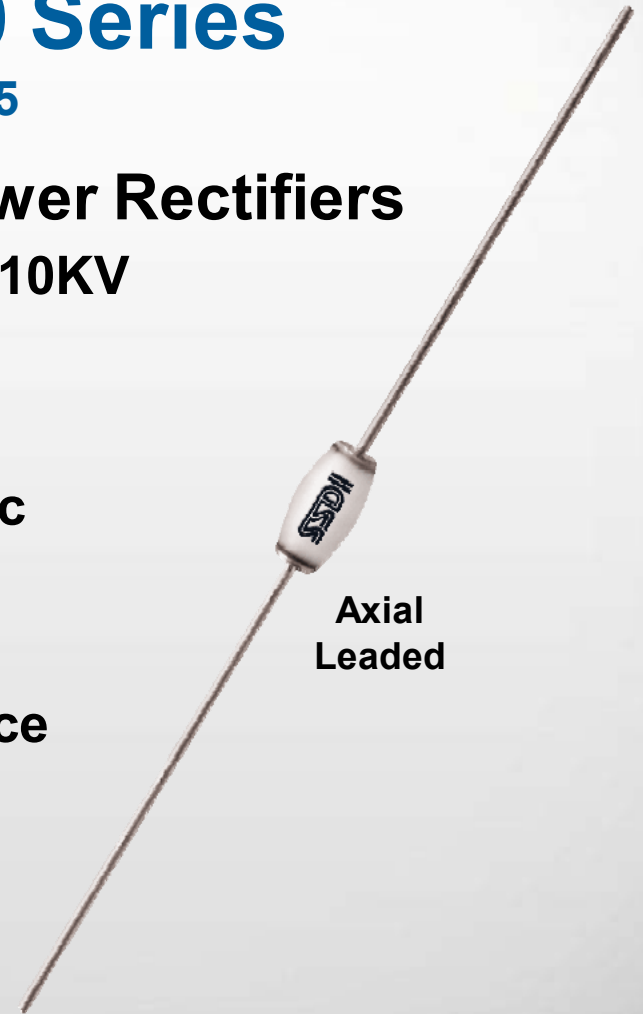
Features	Benefits / Advantages
Hermetically sealed void-free construction	<ul style="list-style-type: none">▪ Excellent cryogenic performance in liquid-to-liquid shock tests▪ PIND testing not required on void-free devices per MIL-PRF-19500
High surge rating	SDR2060UFBT, $I_{FSM} = 300A$, offers improved reliability vs. other manufactures of similar product, $I_{FSM} = 100A$
Replaces stud and thru-hole devices	<ul style="list-style-type: none">▪ 0.280" x 0.165" max body dia▪ 0.6 grams typ
Ultra fast recovery	High switching efficiency; lower switching losses
Low thermal resistance	Lower operating temperature resulting in improved reliability
TX, TXV, and Space level screening available	Screening based on MIL-PRF-19500. Screening flows available on request.

1N6512 – 1N6519 Series

MIL-PRF-19500/575

High Voltage Stack Junction Power Rectifiers

- High Reverse Voltage Range: 2KV – 10KV
- Fast Recovery: 70 nS
- Void Free Ceramic Frit Construction
- High Temperature Category I Eutectic Metallurgical Bond
- Solid Silver Leads
- Excellent Thermal Shock Performance
- For use in high voltage systems including TWT radar applications



JANS Manufacturer



MIL-PRF-19500
SEMICONDUCTOR DEVICES CERTIFICATION
JANS MANUFACTURER CERTIFICATION

IS HEREBY AWARDED TO

SOLID STATE DEVICES, INC.
14701 Firestone Blvd.
La Mirada, CA 90638

THIS CERTIFICATION IS VALID UNTIL TERMINATED BY WRITTEN NOTIFICATION FROM DLA LAND AND MARITIME. REFERENCE DLA LAND AND MARITIME LETTER VQ(VQE-11-023225) FOR DETAILS PERTAINING TO THIS CERTIFICATION.

A handwritten signature in black ink, appearing to read "Samuel E. Merritt".

SAMUEL E. MERRITT
Director, Operations Support Directorate
DLA Land and Maritime

Products Planned for QPL Certification

Qualifications in process or scheduled for 2013

Slash Sheet	Package	Part Numbers	Characteristics	Product Type
/575	Axial	1N6513 – 1N6519 (in process)	0.5 – 2.0A, 2000 – 10,000V, 70nS	UF Rectifier
/768	Axial, SMS	1N7066 – 1N7068	10A, 50 – 150V, 30nS	HF Rectifier
/769	Axial, SMS	1N8018 – 1N8020	1A, 100 – 200V, 9nS	HF Soft Recovery Rectifier
/770	Axial, SMS	1N8021 – 1N8023	1A, 100 – 200V, 5nS	HF Recovery Rectifier
TBD	Axial, Button	SDR2030UF – SDR2060UF	20A, 300 – 600V, 45nS	UF Rectifier
/626	Axial, Button	1N6686 – 1N6687	20A, 100 – 200V	HF Rectifier
/627	Axial, Button	1N6688 – 1N6689	20A, 300 – 400V	HF Rectifier
/628	Axial, Button	1N6690 – 1N6693	20A, 600 – 1200V	UF Rectifier

Future QPL Candidates

Slash Sheet	Package	Part Numbers	Characteristics	Product Type
/616	TO-254	1N6657 – 1N6659 & R	15A, 100 – 200V	UF Rectifier
/617	TO-254	1N6672 – 1N6674 & R	15A, 300 – 500V	UF Rectifier
/642	TO-254	1N6762 – 1N6765 & R	12A, 50 – 200V	UF Rectifier
/643	TO-254	1N6766 – 1N6767 & R	12A, 400 – 600V	UF Rectifier
/645	TO-257	1N6772 – 1N6773 & R	8A, 400 – 600V	UF Rectifier
/646	TO-257	1N6774 – 1N6777	15A, 50 – 200V	UF Rectifier
/647	TO-257	1N6778 – 1N6779	15A, 400 – 600V	Fast Rectifier
-	Axial, SMS	SPD9441	Radiation Detector	PIN Diodes