Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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1N5807 – 1N5811
Series

Qualified Levels: JANS, JANTXV, JANTX, JAN
i.a.w MIL-PRF-19500/477

6 AMP
HYPERFAST RECOVERY RECTIFIER
50 – 150 Volts, 30 nsec max

Designer's Data Sheet

Part Number / Ordering Information [1/]

JANS | **Reliability Level** | JANS, JANTXV, JANTX, JAN; Blank = non-QPL

1N5811 | **Base Part Number** | (See Maximum Rating Table)

__ | **Package** | __ = Axial Leaded; US = Surface Mount Square Tab; SMS = Surface Mount Square Tab (Non-QPL); FL = Flat Leads (Non-QPL)

__ | **Screening** [2/] | __ = None; TX = TX Level; TXV = TXV Level; S = S Level

FEATURES:
- Hyperfast Recovery: 30 nsec Maximum
- Hermetically Sealed Axial Leaded and Surface Mount Packages
- Solid Silver Leads (Axial Leaded / Flat Leads) Provide Stress Relief and Facilitate Welding
- Void-Free Ceramic Frit Glass Construction
- High Temperature Category I Eutectic Metallurgical Bond
- Excellent Thermal Shock Performance
- 175°C Maximum Operating Temperature
- Non-QPL TX, TXV, and Space Level Screening Available [2/]
- For Copper Leads Versions, See SPD5807 – SPD5811 Series

MAXIMUM RATINGS [3/]

Part Number	V_{RWM}	I_{FSM}	I_O		t_{RR}	$R_{\theta JL}$	$R_{\theta JEC}$	$R_{\theta JX}$
Conditions		t_p = 8.3 ms	T_L = +75°C [4/ 5/]	T_A = +55°C [6/ 7/]	25°C	[4/]	[4/ 8/]	[6/]
Units	V_{DC}	A (pk)	A_{DC}	A_{DC}	ns	°C/W	°C/W	°C/W
1N5807	50	125	6.0	3.0	30	22	6.5	52
1N5809	100	125	6.0	3.0	30	22	6.5	52
1N5811	150	125	6.0	3.0	30	22	6.5	52

MAXIMUM RATINGS [3/]	Symbol	Value	Unit
Storage Temperature / Operating Temperature	T_{STG}, T_J	-65 to +175	°C

Notes:
1/ For ordering information, price, and availability – Contact factory.
2/ Non-QPL TX, TXV, and S level screening based on MIL-PRF-19500; Screening flows available on request.
3/ Unless otherwise specified, T_A = 25°C.
4/ T_L at L = .375 in., $T_{EC} = T_L$ at L = 0 or $T_{end\ tab}$ for US, SMS suffix devices.
5/ Derate at 60 mA/°C for T_L above +75°C for 6.0 amp ratings.
6/ For the 3 amp ratings at 55°C, these I_O ratings are for a thermally (PC boards or other) mounting methods where the lead or end-cap temperatures cannot be maintained as shown in IO columns above and where the thermal resistance from mounting point to ambient is still sufficiently controlled where $T_{J(max)}$ above is not exceeded. This equates to $R_{\theta JX} \leq 52$°C/W.
7/ Derate at 25 mA/°C for T_A above +55°C for 3.0 amp ratings.
8/ Surface mount square tab (US) devices only.

Axial Leaded (__) | **Surface Mount Square Tab (US / SMS)** | **Flat Leads (FL)**

**Dime used for size reference*

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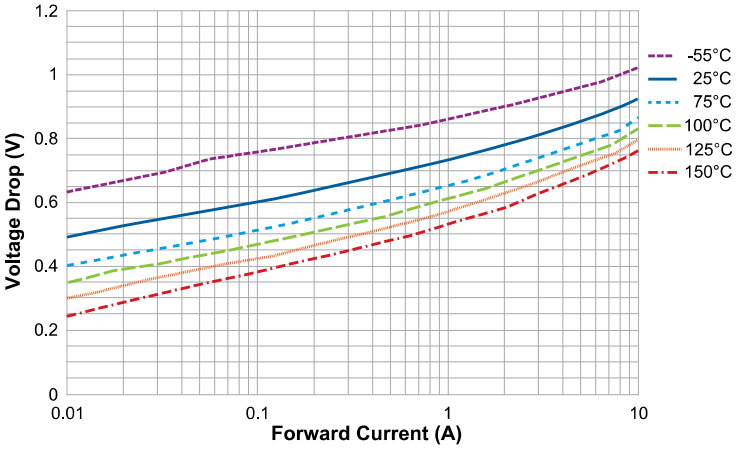
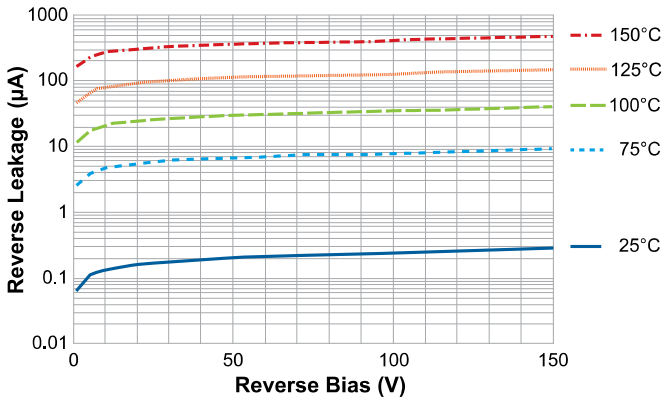
ELECTRICAL CHARACTERISTICS

Part Number	V_{BR}	I_{R1}	I_{R2}	V_{F1}	V_{F2}	V_{F3}
Conditions	@ 100 µA pulse ≤ 20 ms	$V_R = V_{RWM}$ T_A = +25°C pulsed V_R ≤ 20 ms	$V_R = V_{RWM}$ T_A = +125°C pulsed V_R ≤ 20 ms	I_{FM} = 3.0 A Duty cycle ≤ 2% pulsed, t_p = 8.3 ms max	I_{FM} = 4.0 A Duty cycle ≤ 2% pulsed, t_p = 8.3 ms max	I_{FM} = 6.0 A Duty cycle ≤ 2% pulsed, t_p = 8.3 ms max
Units	V	µA	µA	V	V	V
1N5807	**60**	**5.0**	**525**	**0.865**	**0.875**	**0.925**
1N5809	**110**	**5.0**	**525**	**0.865**	**0.875**	**0.925**
1N5811	**160**	**5.0**	**525**	**0.865**	**0.875**	**0.925**

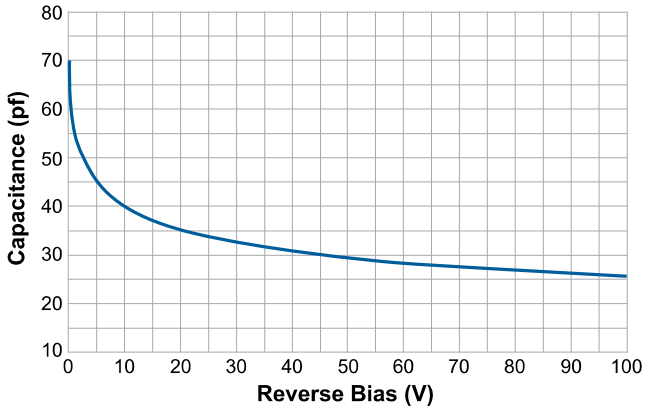
SSDI 1N5811
Typical V_F vs Temperature



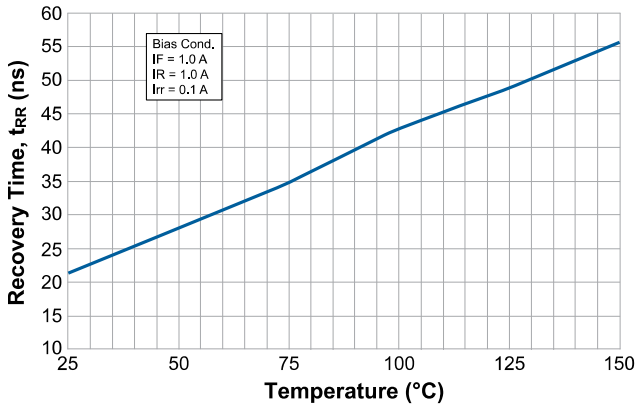
SSDI 1N5811
Typical I_R vs Temperature



SSDI 1N5811
Typical Capacitance vs Voltage



SSDI 1N5811
Typical Recovery Time vs Temperature



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: RC0213A**	**DOC**

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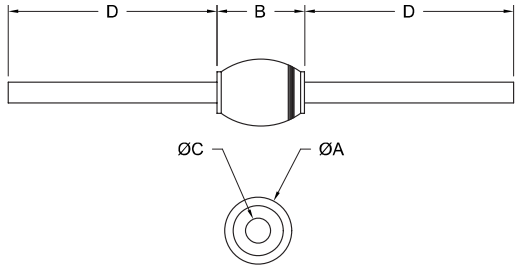
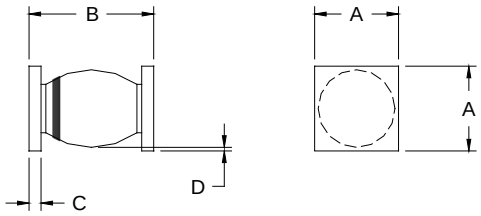
PACKAGE OUTLINE: Axial Leaded (__)



DIMENSIONS							
A		**B***		**C**		**D**	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
.115	.142	.130 (.140 typ)	.300 (.166 typ)	.036	.042	.900	1.300

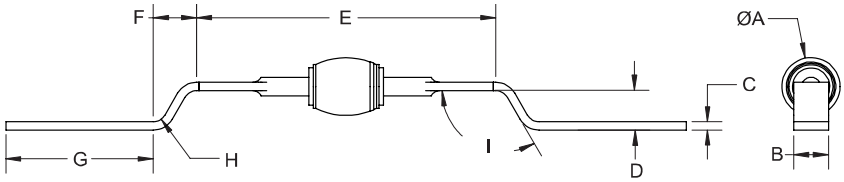
PACKAGE OUTLINE:
Surface Mount Square Tab (US / SMS)



DIMENSIONS							
A		**B**		**C**		**D**	
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
.137	.148	.200	.225	.019	.028	.003	--

PACKAGE OUTLINE:
Flat Leads (FL) *Non-QPL registered

- Solid silver leads
- Provide stress relief (customizable to customer specifications)
- Ideal for welding to BUS bar
- Typical application: solar array bypass / blocking diodes for photovoltaic (PV) panels



DIMENSIONS														
A		**B**		**C**		**D**		**E**		**F**	**G**		**H**	**I**
MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	REF	MIN	MAX	REF	REF
.115	.142	.065	.085	.015	.021	.084	.104	.620	.660	.090	.295	.335	R.03	120°