



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
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**SPA649-01 thru
SPA649-03 Series**

**30 AMP
HYPERFAST CENTERTAP
RECTIFIER BRIDGE
100 – 200 VOLTS
30 nsec**

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPA649- **HF**

^{2/} **Screening**
 = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

^{2/} **Lead Bend Options**
 = Straight Leads
 DB = Down Bend
 UB = Up Bend

^{2/} **Reverse Recovery**
 HF = Hyper Fast Recovery

^{2/} **Voltage**
 01 = 100 Volts
 02 = 150 Volts
 03 = 200 Volts

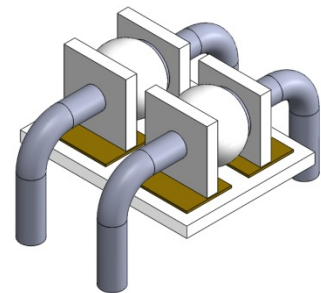
- FEATURES:**
- Hyper fast reverse recovery time: 30 ns max
 - Hermetically sealed
 - Void free construction eliminates die attach, wire bond, hermeticity and PIND issues related to TO-25X and stud mount packages
 - Low reverse leakage current
 - Electrically isolated baseplate
 - Smaller footprint than TO-254 package
 - Easy to configure as center tap, doubler or parallel connection
 - Recommended replacement for 1N6657 – 1N6659
 - TX, TXV, and S-level screening available ^{2/}

MAXIMUM RATINGS ^{3/}		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SPA649-01	V_{RRM}	100	Volts
	SPA649-02	V_{RWM}	150	
	SPA649-03	V_R	200	
Average Rectified Forward Current Resistive load, 60Hz, Sine wave, $T_C = 100^\circ C$	Per bridge Per leg	I_o	30 15	Amps
Peak Surge Current Non-repetitive, $t = 8.3$ ms half sine wave pulse, per leg		I_{FSM}	450	Amps
Operating & Storage Temperature		T_J and T_{STG}	-65 to +175	$^\circ C$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	1.9	$^\circ C/W$

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/} Unless otherwise specified, all electrical characteristics @ 25°C.

SPA649





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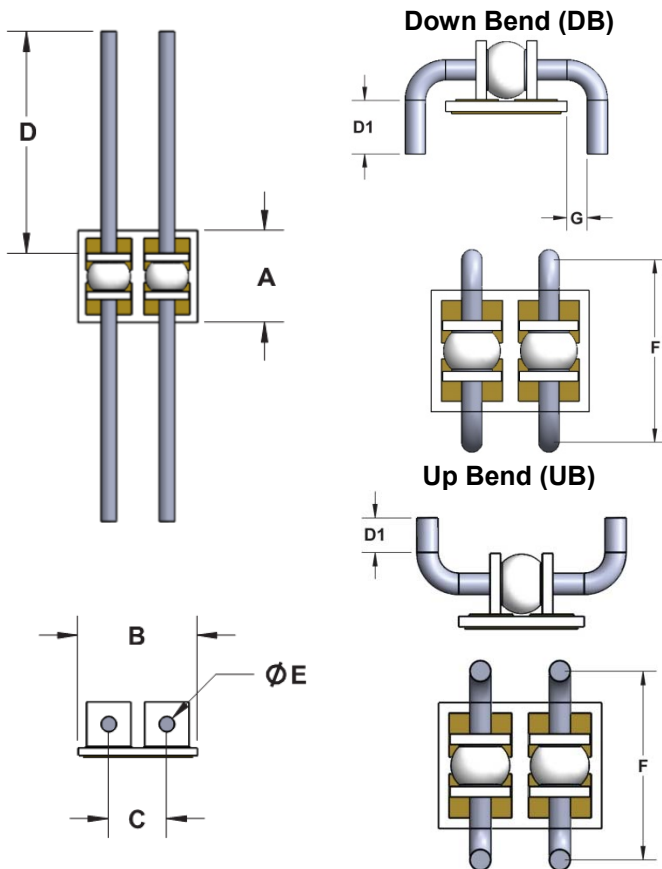
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ELECTRICAL CHARACTERISTICS (per leg) ^{3/}

CHARACTERISTICS	SYMBOL	TYP	LIMIT	UNIT
Instantaneous Forward Voltage Drop 300 μ s pulse	$I_F = 15 \text{ Adc}$ V_{F1}	0.90	0.95	Vdc
	$I_F = 20 \text{ Adc}$ V_{F2}	--	1.00	
	$I_F = 15 \text{ Adc}, T_A = +150^\circ\text{C}$ V_{F3}	0.70	0.86	
	$I_F = 15 \text{ Adc}, T_A = +175^\circ\text{C}$ V_{F4}	0.67	--	
Reverse Leakage Current At rated V_R	$T_A = +25^\circ\text{C}$ I_{R1}	0.1	2	μ A
	$T_A = +150^\circ\text{C}$ I_{R2}	50	500	
	$T_A = +175^\circ\text{C}$ I_{R3}	300	--	
Breakdown Voltage $I_R = 100 \mu\text{A}$	SPA649-01	--	110	V
	SPA649-02	--	160	
	SPA649-03	--	210	
Junction Capacitance $V_R = 10 \text{ Vdc}, f = 1 \text{ MHz}$	C_J	110	150	pF
Isolation Leakage Current All terminals in common to base @ 1500V	R_{iso}	--	1	μ A
Reverse Recovery Time $I_F = 0.5 \text{ A}, I_R = 1 \text{ A}, I_{RR} = 0.25 \text{ A}$	t_{rr}	--	30	ns

Package Outlines: SPA649



DIM	MIN	MAX	Pin Assignment
A	.230	.270	
B	.380	.420	
C	.170	.210	
D	.700	-	
D1	.400	-	Examples: Common Cathode (CT): connect pins 1 and 4
E	.048	.052	Common Anode (CA): connect pins 2 and 3
F	.410	.442	Doubler (D): connect pins 1 and 3
G	.040 REF		For other configurations or assistance, contact factory

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

DATA SHEET #: PM0036A

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