

SPA648-01 thru SPA648-03 Series

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPA648- **HF**

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

Reverse Recovery
 HF = Hyperfast Recovery

Voltage
01 = 100 Volts
02 = 150 Volts
03 = 200 Volts

30 AMP
HYPERFAST CENTERTAP /
DOUBLER RECTIFIER BRIDGE
100 — 200 VOLTS
30 nsec

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	SPA648-01	V_{RRM}	100	Volts
	SPA648-02	V_{RWM}	150	
	SPA648-03	V_R	200	
Average Rectified Forward Current Resistive load, 60Hz, Sine wave, $T_C = 100^\circ\text{C}$	Per bridge	I_O	30	Amps
	Per leg		15	
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	$^\circ\text{C}$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	1.9	$^\circ\text{C/W}$

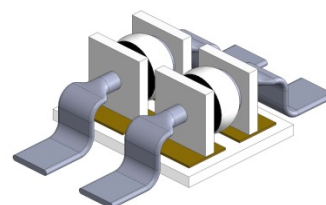
NOTES:

^{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 .

SPA648



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

DATA SHEET #: PM0034A

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ELECTRICAL CHARACTERISTICS (per leg)^{3/}

CHARACTERISTICS		SYMBOL	TYP	LIMIT	UNIT
Instantaneous Forward Voltage Drop 300 μ s pulse	$I_F = 15 \text{ A dc}$	V_{F1}	0.90	0.95	Vdc
	$I_F = 20 \text{ A dc}$	V_{F2}	--	1.00	
	$I_F = 15 \text{ A dc}, T_A = +150^\circ\text{C}$	V_{F3}	0.70	0.86	
	$I_F = 15 \text{ A dc}, T_A = +175^\circ\text{C}$	V_{F4}	0.67	--	
Reverse Leakage Current At rated V_R	$T_A = +25^\circ\text{C}$	I_{R1}	0.1	2	μA
	$T_A = +150^\circ\text{C}$	I_{R2}	50	500	
	$T_A = +175^\circ\text{C}$	I_{R3}	300	--	
Breakdown Voltage $I_R = 100 \mu\text{A}$	SPA648-01	BV_R	--	110	V
	SPA648-02		--	160	
	SPA648-03		--	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	μA
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:

<div><p style="text-align: center;">SPA648</p><p>Top view dimensions: A (total width), B (pin pitch), C (pin width), D (total length), E (pin length, 4x), F (lead length), G (lead width).</p><p>Side view dimensions: T1 (package height), T2 (lead height).</p></div>	DIM	MIN	MAX	Pin Assignment
	A	.380	.420	
	B	.230	.270	
	C	.170	.210	
	D	.460	.580	
	E	.060	.100	Examples:
	F	.090	.130	Common Cathode (CT): connect pins 1 and 4
	G	0.025 REF		Common Anode (CA): connect pins 2 and 3
	T1	--	.250	Doubler (D): connect pins 1 and 3
	T2	.020	.028	For other configurations or assistance, contact factory

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