

P O S I T I O N I N G P S T A 6 4 3 - S t a n d a r d R e c t i f i e r

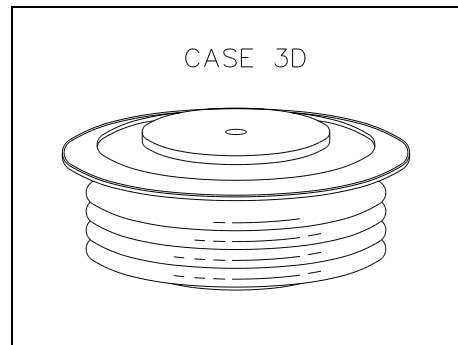
3500 - 4500

V_{RRM} ; 1000 A avg

GENERAL PURPOSE HIGH POWER STANDARD RECTIFIER

Features:

- . All Diffused Structure
- . High Surge rating
- . Blocking capability up to 4500 volts
- . Soft Reverse Recovery
- . Rugged Ceramic Hermetic Package
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Reverse Blocking

Device Type	V_{RRM} (1)	V_{RSM} (1)
PSTA643CE	3500	3600
PSTA643CM	3600	3700
PSTA643CN	3800	3900
PSTA643DP	4000	4100
PSTA643DB	4200	4300
PSTA643DD	4400	4500
PSTA643DE	4500	4600

V_{RRM} = Repetitive peak reverse voltage

V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage	I_{RRM}	10 mA 50 mA (3)
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Notes:

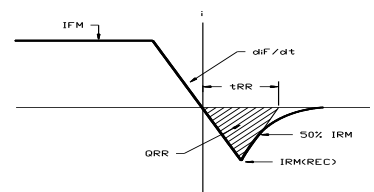
All ratings are specified for $T_j=25^\circ\text{C}$ unless otherwise stated.

(1) All voltage ratings are specified for an applied 50Hz/60Hz sinusoidal waveform over the temperature range -40 to $+170^\circ\text{C}$.

(2) 10 msec. max. pulse width

(3) Maximum value for $T_j = 170^\circ\text{C}$.

(4) See parameter definition below :



REVERSE RECOVERY CHARACTERISTIC

Conducting - on state

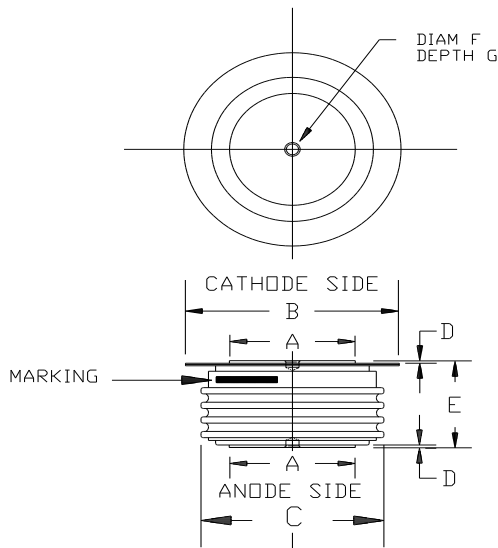
Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	$I_{F(AV)}$		1000		A	Sinewave, 180° conduction, $T_c = 85^\circ\text{C}$
RMS value of on-state current	I_{FRMS}		1600		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{FSM}		11000		A	8.3 msec (60Hz), sinusoidal wave-shape, 180° conduction, $T_j = 170^\circ\text{C}$
			10000		A	10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 170^\circ\text{C}$
I square t	I^2t		500,000		A^2s	8.3 msec and 10.0 msec
Peak on-state voltage	V_{FM}		1.40		V	$I_{FM} = 1000 \text{ A}$; 160°C
Reverse Recovery Current (4)	$I_{RM(REC)}$		*	195	A	$I_{FM} = 1000 \text{ A}$; $dI_F/dt=10 \text{ A}/\mu\text{s}$; 160°C
Reverse Recovery Charge (4)	Q_{rr}		*		μC	
Reverse Recovery Time (4)	t_{RR}		*		μs	

THERMAL AND MECHANICAL CHARACTERISTICS **PSTA643 - Standard Rectifier**

Parameter	Symb ol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T _j	-40	+170		°C	
Storage temperature	T _{stg}	-40	+170		°C	
Thermal resistance - junction to case	R _{θ(j-c)}		0.040 0.080		°C/W	Double sided cooled Single sided cooled
Thermal resistance - case to sink	R _{θ(c-s)}		.015 .030		°C/W	Double sided cooled * Single sided cooled *
Mounting force	P	3500 15.5	4500 19.9		lb. kN	
Weight	W			9 225	oz. g	

* Mounting surfaces smooth, flat and greased

CASE OUTLINE AND DIMENSIONS.



DIMENSIONS	Min. mm	Max. mm	Min. In.	Max. In.
DIAM A	33.02	34.29	1.30	1.35
DIAM B	55.88	63.50	2.20	2.50
DIAM C	--	54.61	--	2.15
D	0.76	--	0.03	--
E	25.40	27.18	1.00	1.07
F	3.30	3.81	0.13	0.15
G	1.78	2.03	0.07	0.08

STRIKE DISTANCE = .73 INCH / 18.5 MM MIN.
CREEPAGE DISTANCE = 1.17 INCH / 29.7 MM MIN.