Ruttonsha International Rectifier Ltd.

SILICON CONTROLLED RECTIFIER

High Power Phase Control Thyristor
Hockey Puk Version
S-Puk Series 2930PS

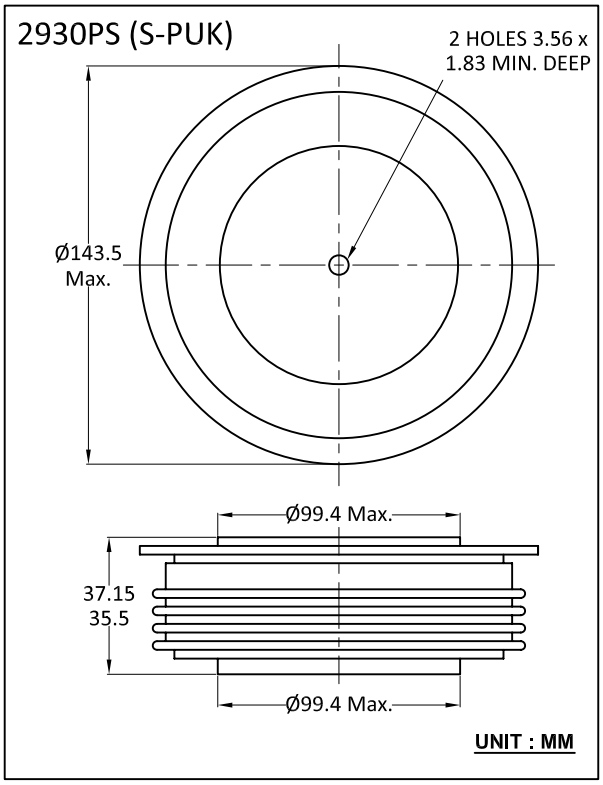
Type:- 2930PS 800

Features

* *Center Distributed gate*
* *Metal case with ceramic insulator*
* *High Profile hokey-puk*

Typical Applications

* *DC Motor Control (e.g. for machine tools.)*
* *Controlled rectifiers (e.g. for battery Charging, Uninterrupted Power Supply).*
* *Induction Furnace*



MAJOR RATING & CHARACTERISTICS

Parameters		2930PS	Units
$I_{F(AV)}$		2930	A
	@ Ths	55	°C
$I_{T(RMS)}$		3300	A
	@ Ths	85	°C
I_{TSM}		67	KA
I^2t		22400	KA^2s
I_{DRM}/V_{RRM}		7000 to 8000	V
t_J		-40 to 125	°C

SILICON CONTROLLED RECTIFIER

Type : 2930PS SERIES

ELECTRICAL SPECIFICATION

VOLTAGE RATINGS

Type Number	Voltage Code	V_{RMM} max. repetitive peak reverse voltage V	V_{RMM} max.Non-repetitive peak reverse voltage	I_{DRM} max. @ $T_J = T_J$ Max. mA
2930PS	700	7000	7100	600
	750	7500	7600	
	800	8000	8100	

ON-STATE CONDUCTION

Parameter		2930PS	Unit	Conditions	
$I_{T(AV)}$	Max, average on-state current	2930	A	180° conduction, half sine wave Double side cooled	
	@ Heat sink temperature	55	°C		
$I_{T(RMS)}$	Max, average on-state current	3300	A	@ 85°C heat sink temperature double side cooled	
I_{TSM}	Max, peak, one-cycle non-repetitive surge current	67	KA	t - 10ms	Sinusoidal half wave, Initial Tj = Tj max,
I^2t	Max, I^2t for fusing	21400	KA^2s	t - 10ms	
V_{TO}	Threshold Voltage	1.24	V	Tj = Tj max,	
r_t	On-state slope resistance	0.44	mΩ	Tj = Tj max,	
V_{TM}	Max, on state voltage	3.0	V	Ipk=4000A, Tj= j max, tp = 10ms sine pulse	
I_H	Max, holding current (Typ.)	500	mA	Tj = 25°C anode supply 12V resistive load	
I_L	Typical latching current (Max.)	2000	mA	Tj = 25°C anode supply 12V resistive load	

SWITCHING

Parameter		2930PS	Unit	Conditions
di/dt	Max, critical repetitive rate of rise of on-state current	300	A/µs	Gate drive 20V, 20Ω, tr ≤ 1µs, Tj=Tj max, anode voltage ≤ 60% V_{DRM}
t_q	Typical turn-off time (Max.)	550	µs	I_{TM}=2000A. Tj=Tj max. di/dt= 10A/µs, V_R=100V, dv/dt= 20V/µs, 0.5V_{DRM} repplied, tp=500µs

BLOCKING

Parameter		2930PS	Unit	Conditions
dv/dt	Max, critical rate of rise of off-state voltage (Repetitive)	2000	V/µs	Tj=Tj max, linear to 67% rated V_{DRM}
I_{RRM} I_{DRM}	Max, peak reverse and off-state leakage current	600	mA	Tj=Tj max. rated V_{DRM}/V_{RRM} applied

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TRIGGERING

Parameter		2930PS	Unit	Conditions
P_{GM}	Max, peak gate power	50	W	Tj = Tj max. $t_p \leq$ 5ms.
$P_{G(AV)}$	Max, average gate power	4	W	Tj = Tj max. f=50Hz, d% =50
I_{GM}	Max, Peak positive gate current	20	A	Tj = Tj max. $t_p \leq$ 5ms
$+V_{GM}$	Max, peak positive gate voltage	20	V	Tj = Tj max. $t_p \leq$ 5ms
$-V_{GM}$	Max, peak negative gate voltage	5.0	V	Tj = Tj max. $t_p \leq$ 5ms
I_{GT}	DC gate current required to trigger	300	mA	Tj = 25°C Max. required gate trigger /current /voltage are the lowest value which will trigger all unit 12V anode-to cathode applied
V_{GT}	DC gate Voltage required to trigger	4.0	V	
I_{GD}	DC gate current not to trigger	10	mA	Tj = 25°C Max. gate current /voltage not to trigger is the max. value which will trigger any unit with rated V_{DRM} anode-to cathode applied
V_{GD}	DC gate Voltage not to trigger	0.25	V	

THERMAL AND MECHANICAL SPECIFICATION

Parameter		2930PS	Unit	Conditions
T_J	Max, operating temperature	125	°C	
T_{stg}	Max, storage temperature	150	W°C	
R_{thJ-hs}	Max. thermal resistance, junction to heat sink	0.007	K/W	DC operation double side cooled
F	Mounting fourse ± 10%	80 - 98	KN	
Wt.	Approximate weight	3000	g	
	Case Style	S-PUK		See Outline table