Ruttonsha International Rectifier Ltd.

SILICON CONTROLLED RECTIFIERS

High Power Thyristor
Hockey Puk Version
B-PUK Series 760PB

Types : 760PB 80-760PB 160

760PB...

FEATURES

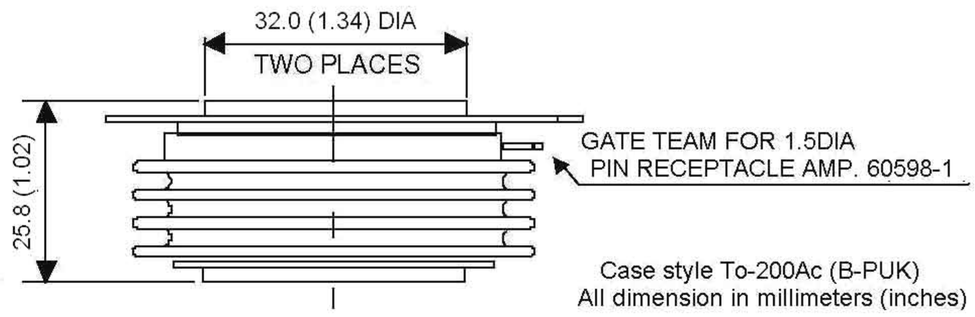
- *Center amplifying gate.*
- *International standard case TO-200AC.*

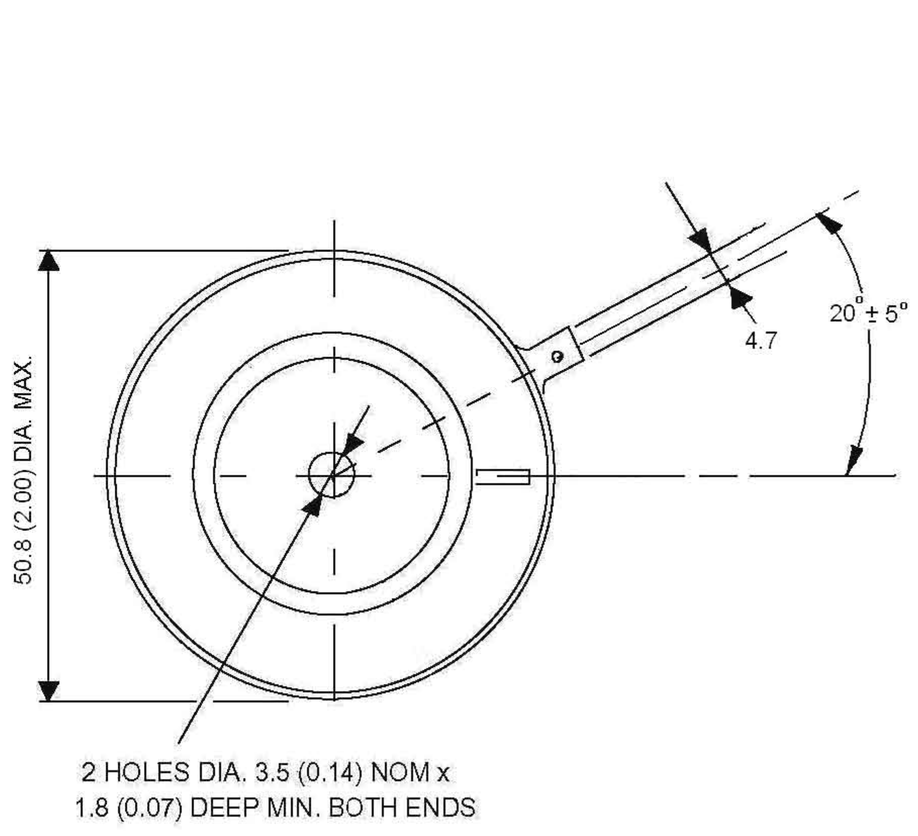
TYPICAL APPLICATIONS

- *Power supply.*
- *Controlled rectifiers (e.g. for battery charging, UPS).*
- *Electroplating equipement..*

MAJOR RATINGS & CHARACTERISTICS

Parameters		760PB	Units
$I_{T(AV)}$		760	A
	@ T_{hs}	83	^0C
$I_{T(RMS)}$		1193	A
	@ T_{hs}	55	^0C
I_{TSM}	@ 50 Hz	13000	A
I^2t	@ 50 Hz	845	KA^2s
V_{DRM} / V_{RRM}		800 - 1600	V
t_q	typical	100 - 200	µs
T_J		-40 to 125	^0C





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760PB

ELECTRICAL SPECIFICATION

VOLTAGE RATINGS

Type Number	Voltage Code	V_{RRM} / V_{DRM}, max. repetitive peak and off-state voltage V	V_{RSM}, max. non-repetitive peak voltage V	I_{DRM} / I_{RRM} max. @ 125°C mA
760PB	80	800	900	80
	100	1000	1100	
	120	1200	1300	
	140	1400	1500	
	160	1600	1700	

ON-STATE CONDUCTION

	Parameter	760PB	Units	Conditions		
$I_{T(AV)}$	Max. average on-state current	760	A	180° conduction, half sine wave		
	@ heat sink temperature	83	°C	double side cooled		
$I_{T(RMS)}$	Max. RMS on-state current	1193	A	@55°C heat sink temperature (double side cooled)		
I_{TSM}	Max. peak one cycle non-repetitive surge current	13000		t = 10ms	T_J = T_J max.	
I^2t	Maximum I^2t for fusing	845	kA^2s	t = 10ms	T_J = T_J max.	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	8450	$kA^2\sqrt{s}$	t = 0.1 to 10ms. No voltage reapplied.		
$V_{T(TO)}$	Threshold voltage	0.92	V	T_J = T_J max.		
r_{t2}	On state slope resistance	0.3	mΩ	T_J = T_J max.		
V_{TM}	Max. on state voltage	1.65	V	I_{pk} = 2400 A, T_J = 25°C. t_p = 10ms sine pulse		
I_H	Maximum holding current typ/max.	150/500	mA	T_J = 25°C, anode supply 12V resistive load		
I_L	Latching current typ/max.	500/2000				

SWITCHING

	Parameter	760PB	Units	Conditions
di/dt	Max. non-repetitive rate of rise of turned-on current	125	A/µs	
t_d	Typical delay time typ.	2.0	µs	Gate current 1A, di_g/dt = 1A/µs V_d = 0.67% V_{DRM}, T_J = 25°C
t_q	Typical turn-off time	100-200		I_{TM} = 750A, T_J = T_J max., di/dt = 40A/µs, V_R = 50V dv/dt = 20V/µs, Gate 0V 100Ω, t_p = 500µs

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BLOCKING

	Parameter	760PB	Units	Conditions
I_{RRM} I_{DRM}	Max. peak reverse and off-state leakage current	80	mA	$T_J = T_J$ max, rated V_{DRM}/V_{RRM} applied

TRIGGERING

	Parameter	760PB	Units	Conditions
I_{GT}	DC gate current required to trigger	200	mA	$T_J = 25^0C$
V_{GT}	DC gate voltage required to trigger	3.0	V	$T_J = 25^0C$
				Max. required gate trigger/current / voltage are the lowest value which will trigger all units 12V anode-to-cathode applied.
I_{GD}	DC gate current not to trigger	10	mA	$T_J = 125^0C$
V_{GD}	DC gate voltage not to trigger	0.25	V	Max. gate current / voltage not to trigger is the max. value which will not trigger any unit with rated V_{DRM} anode-to-cathode applied.

THERMAL AND MECHANICAL SPECIFICATION

	Parameter	760PB	Units	Conditions
T_J	Max. operating temperature range	-40 to 125	^0C	
T_{stg}	Max. storage temperature range	-40 to 130		
R_{thJ-hs}	Max. thermal resistance, junction to heat sink	0.04	K/W	DC operation double side cooled
F	Mounting force, ±10%	14700 (1500)	N (kg)	
wt	Approximate weight	255	g	
	Case style	To - 200AC (B-PUK)		See outline