RUTTONSHA

Ruttonsha International Rectifier Ltd.

SILICON RECTIFIERS

TYPE:R1000B...F SERIES

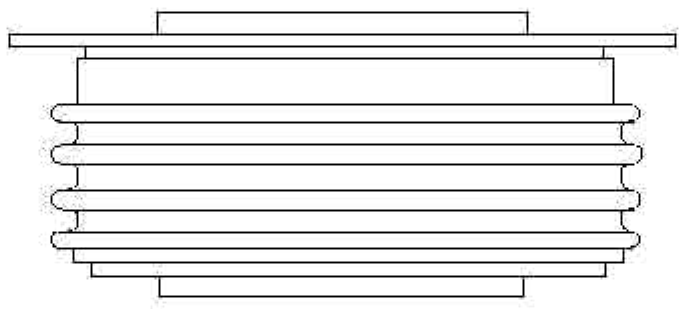
FAST RECOVERY DIODES

Hockey Puk Version

1000A

Features

- High power FAST recovery diode series
- High voltage ratings up to 3000V
- High current capability
- Optimized turn on and turn off characteristics
- Low forward recovery
- Fast and soft reverse recovery
- Press-puk encapsulation
- Case style conform to JEDEC DO-200AB (B-PUK)
- Maximum junction temperature 150°C
- RoHS Compliant



case style DO-200AB (B-PUK)

Typical Applications

- Snubber diode for GTO
- High voltage free-wheeling diode
- Fast recovery rectifier applications

Major Ratings and Characteristics

Parameters	R1000...F	Units
$I_{F(AV)}$	1000	A
@ T_{hs}	55	°C
$I_{F(RMS)}$	1570	A
I_{FSM} @ 50Hz	14000	A
V_{RRM} range	1800 to 3000	V
t_{rr}	4.5	µs
@ T_J	25	°C
T_J	-40 to 150	°C

Type: R1000B...F Series

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non-repetitive peak rev. voltage V	I_{RRM} max. @ $T_J = T_J$ max. mA
R1000B...F	18	1800	1900	100
	22	2200	2300	
	25	2500	2600	
	28	2800	2900	
	30	3000	3100	

Forward Conduction

	Parameter	R1000B...F	Units	Conditions	
$I_{F(AV)}$	Max. average forward current	1000	A	180° conduction, half sine wave	
	@ heatsink temperature	55	°C	Double side cooled	
$I_{F(RMS)}$	Max. RMS forward current	1570	A	@ 55°C heatsink temperature double side cooled	
I_{FSM}	Max. peak, one-cycle forward, non-repetitive surge current	14000	A	t = 10ms	Sinusoidal half wave, Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	980	KA^2s	t = 10ms	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	9800	$KA^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied	
$V_{F(TO)}$	Threshold voltage	1.51	V	$T_J = T_J$ max.	
r_f	Forward slope resistance	0.45	mΩ	$(I > \pi \times I_{F(AV)}), T_J = T_J$ max.	
V_{FM}	Max. forward voltage drop	1.9	V	I_{pk}= 1000A, T_J = 25°C, t_p = 10ms sinusoidal wave	
trr	Reverse Recovery Time	4.5	us	IFM= 1000A di/dt= 100A/us	

Thermal and Mechanical Specifications

	Parameter	R1000B...F	Units	Conditions
T_J	Max. junction operating temperature	-40 to 150	°C	
T_{stg}	Max. storage temperature range	-40 to 150		
R_{thJ-hs}	Max. thermal resistance, case junction to heat sink	0.037	°C/W	DCoperation double side cooled
F	Mounting force, ± 10%	14700 (1500)	N (Kg)	
wt	Approximate weight	255	g	
	Case style	DO-200AB(B-PUK)		See Outline Table

Ordering Information Table

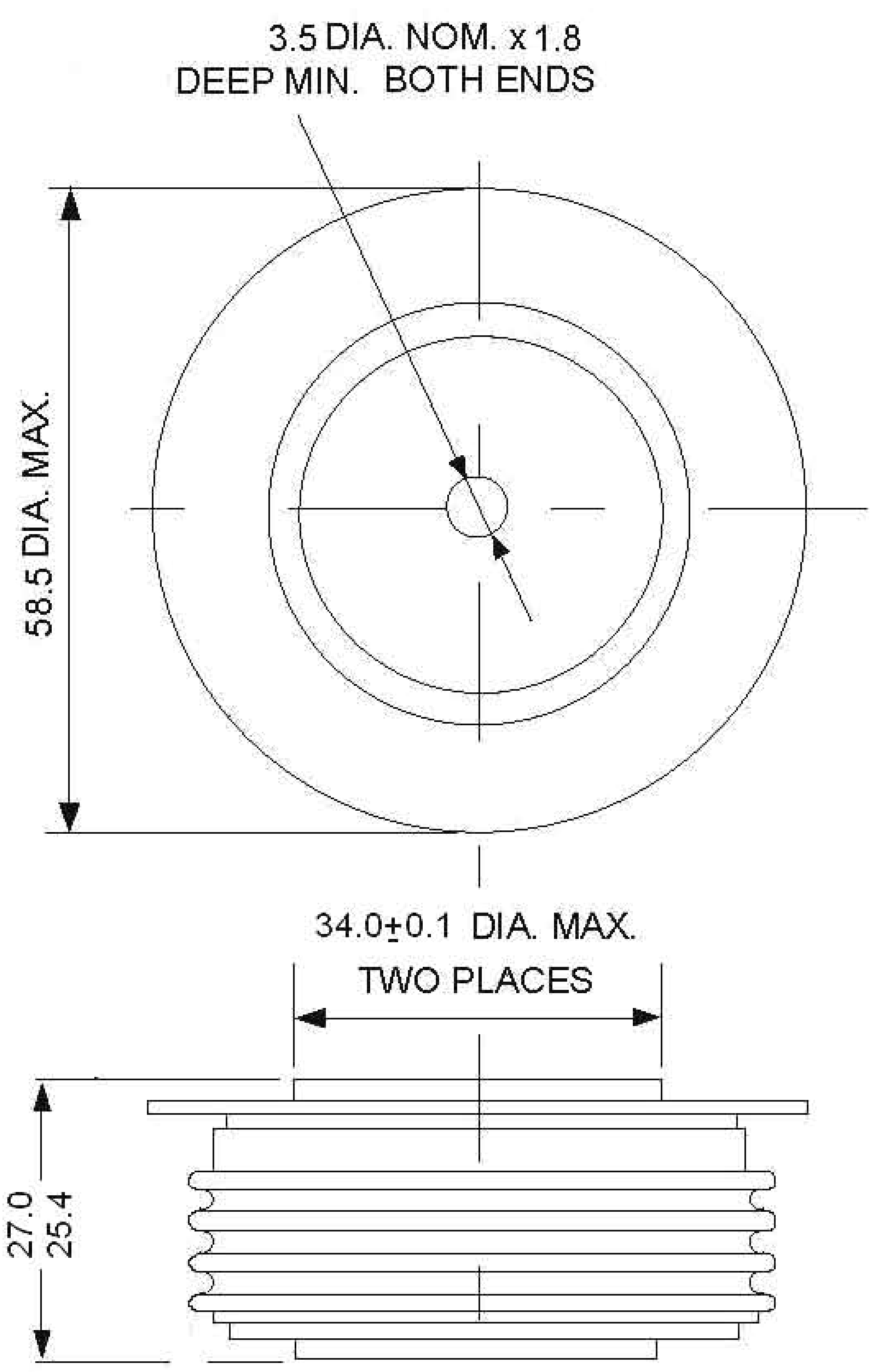
Device Code

R	1000	B	30	C	F
①	②	③	④	⑤	⑥

1 - R = Diode
2 - Essential part number
3 - B= Puk Case: Do-200AB
4 - Voltage code: Code x 100 = V_{RRM} (See Voltage Ratings table)
5 - C = Ceramic Puk
6 - F = Fast recovery

OUTLINE TABLE

R1000B...F Series



CASE STYLE : DO-200AB (B-PUK)
ALL DIMENSION IN MM.