Ruttonsha International Rectifier Ltd.

RUTTONSHA

SILICON RECTIFIERS

TYPE : R3200Q..CF SERIES

FAST RECOVERY DIODES

Hockey Puk Version

3200A

Features

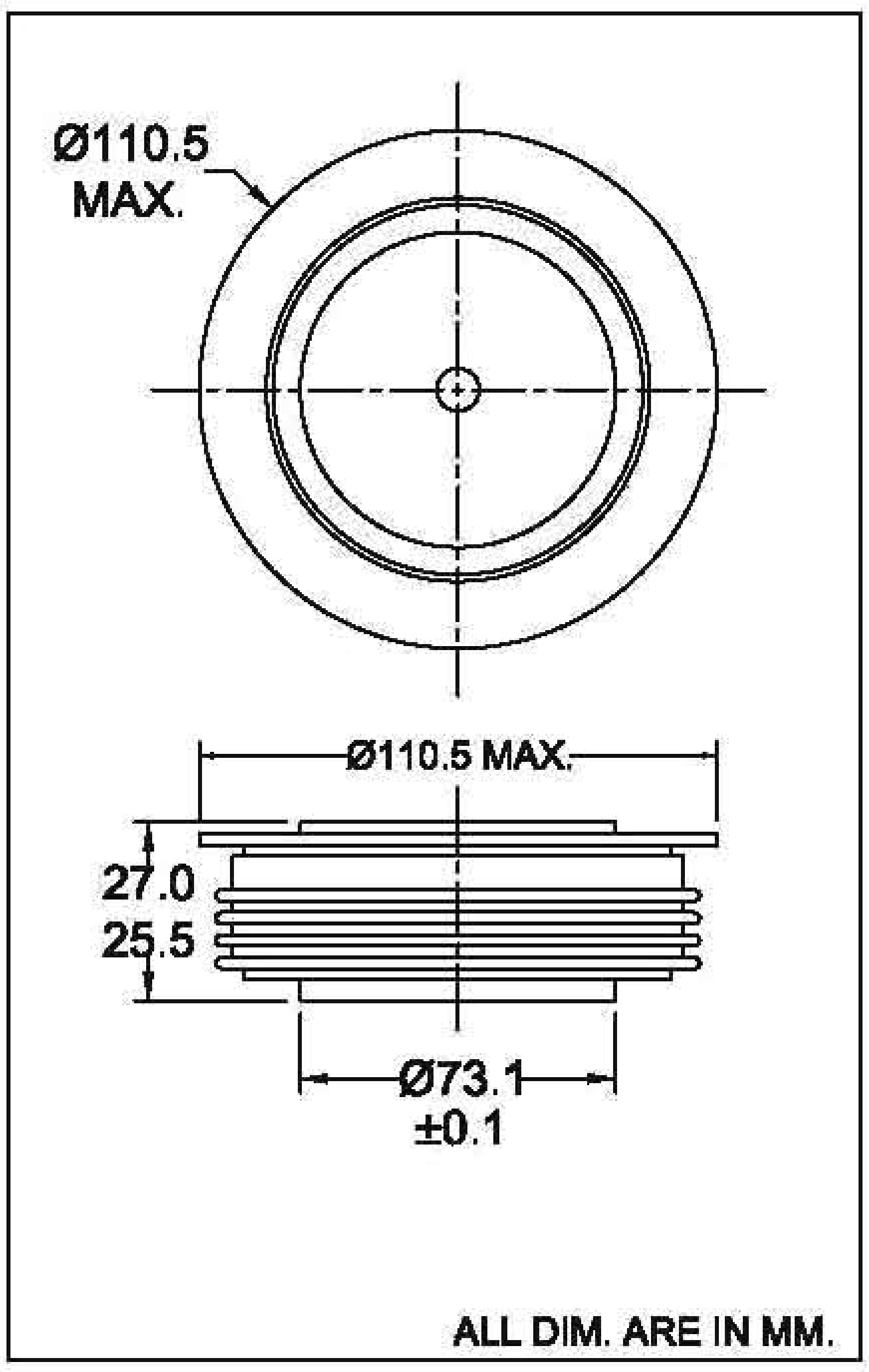
- High power FAST recovery diode series
- 7.0 μs recovery time
- High voltage ratings up to 4500V
- High current capability
- Optimized turn on and turn off characteristics
- Low forward recovery
- Fast and soft reverse recovery
- Press-puk encapsulation
- Maximum junction temperature 150°C

Typical Applications

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

Major Ratings and Characteristics

Parameters		R3200Q	Units
$I_{F(AV)}$		3230	A
	@ T_{hs}	55	°C
$I_{F(RMS)}$		5080	A
I_{FSM}	@ 50Hz	20	KA
V_{RRM} range		3000 to 4500	V
t_{rr}		7.0	μs
	@ T_J	150	°C
T_J		-40 to 150	°C



SILICON RECTIFIERS

R3200Q...CF 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
R3200Q..CF	30	3000	3100	150
	34	3400	3500	
	38	3800	3900	
	42	4200	4300	
	45	4500	4600	

Forward Conduction

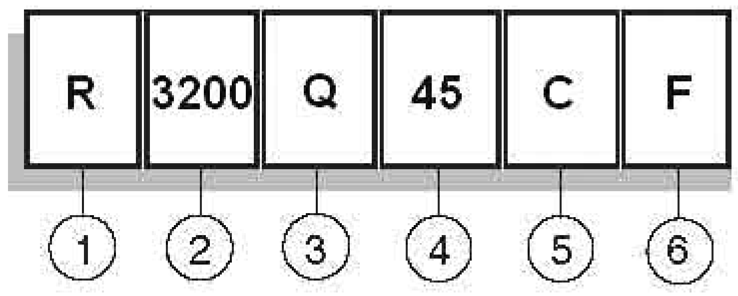
	Parameter	R3200Q..CF	Units	Conditions	
$I_{F(AV)}$	Max. average forward current	3230	A	180° conduction, half sine wave	
	@ heatsink temperature	55	°C	Double side cooled	
$I_{F(RMS)}$	Max. RMS forward current	5080	A	@ 55°C heatsink temperature double side cooled	
I_{FSM}	Max. peak, one-cycle forward, non-repetitive surge current	20	KA	t = 10ms	Sinusoidal half wave, Initial T_J = T_J max.
I^2t	Maximum I^2t for fusing	2000	KA^2s	t = 10ms	
$V_{F(TO)}$	Threshold voltage	1.25	V	T_J = T_J max.	
r_f	Forward slope resistance	0.15	mΩ	T_J = T_J max.	
V_{FM}	Max. forward voltage drop	2.0	V	I_{pk}= 3000A, Tc=25°C, t_p = 10ms sinusoidal wave	
trr	Reverse Recovery Time	7.0	us	IFM=1000A, di/dt=100A/us	

Thermal and Mechanical Specifications

	Parameter	R3200Q..CF	Units	Conditions
T_J	Max. junction operating temperature range	-40 to 150	°C	
T_{stg}	Max. storage temperature range	-40 to 150		
R_{thJ-hs}	Max. thermal resistance, junction to heatsink	0.012	K/W	DC operation double side cooled
F	Mounting force, ± 10%	40	KN (Kg)	
wt	Approximate weight	1050	g	
	Case style	Q - PUK		See Outline Table

Ordering Information Table

Device Code



1 - R = Diode

2 - Essential part number

3 - Q - Puk

4 - Voltage code: Code x 100 = V_{RRM} (See Voltage Ratings table)

5 - C = Ceramic Puk

6 - F = Fast recovery