RUTTONSHA

Ruttonsha International Rectifier Ltd.

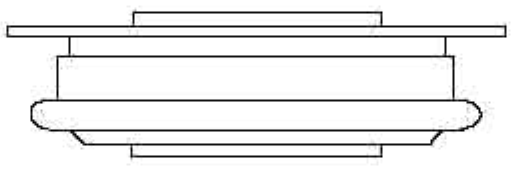
SILICON RECTIFIERS

TYPE: R600E...F SERIES

FAST RECOVERY DIODES

Hockey Puk Version4

600A



case style B-43

Features

- High power FAST recovery diode series
- High voltage ratings up to 2200V
- 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 B-43
- Maximum junction temperature 125°C

Typical Applications

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

Major Ratings and Characteristics

Parameters		R600E...F	Units
$I_{F(AV)}$		600	A
	@ T_{hs}	55	°C
$I_{F(RMS)}$		942	A
	@ T_{hs}	55	°C
I_{FSM}	@ 50Hz	8320	A
I^2t	@ 50Hz	346	KA^2s
V_{RRM} range		400 to 2200	V
t_{rr} range		3.2	µs
	@ T_J	25	°C
T_J		- 40 to 125	°C

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ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM} max. repetitive peak and off-state voltage V	V_{RSM} , maximum non-repetitive peak voltage V	I_{RRM} max. T_J = 125°C mA
R600E...10CF	04	400	500	45
	08	800	900	
	10	1000	1100	
R600E...16CF	12	1200	1300	
	14	1400	1500	
	16	1600	1700	
R600E...22CF	20	2000	2100	
	22	2200	2300	

Forward Conduction

Parameter		R600E...F	Units	Conditions	
$I_{F(AV)}$	Max. average forward current	600	A	180° conduction, half sine wave.	
	@ Heatsink temperature	55	°C	Double side cooled	
$I_{F(RMS)}$	Max. RMS current	942	A	@55°C heatsink temperature double side cooled	
I_{FSM}	Max. peak, one-cycle non-repetitive forward current	8320	A	t = 10ms	Sinusoidal half wave, Initial T_J = T_J max.
I^2t	Maximum I^2t for fusing	346	KA^2s	t = 10ms	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	3460	$KA^2\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied	
$V_{F(TO)}$	Threshold voltage	1.36	V	T_J = T_J max.	
r_{f1}	Forward slope resistance	0.70	mΩ	T_J = T_J max.	
V_{FM}	Max. forward voltage	2.97	V	I_{pk}=1885 A, T_J = 25°C, t_p = 10ms sinusoidal wave	
trr	Reverse Recovery Time	3.2	us	IFM=1000 A, di/dt=25A/us	

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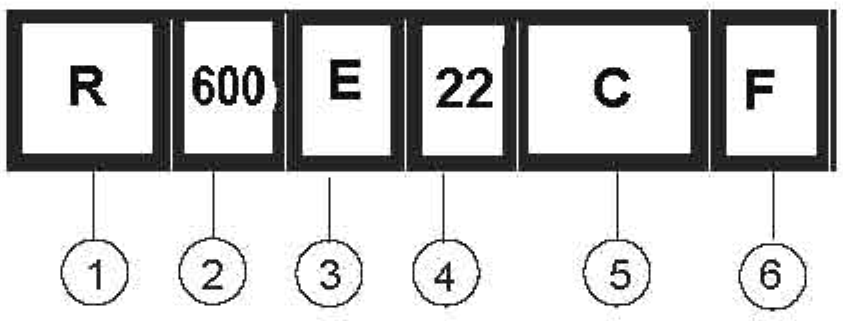
Thermal and Mechanical Specifications

	Parameter	R600E...F	Units	Conditions
T_J	Max. operating temperature range	-40 to 125	°C	
T_{stg}	Max. storage temperature range	-40 to 150		
R_{thJ-hs}	Max. thermal resistance, junction to heatsink	0.050	K/W	DC operation double side cooled
F	Mounting force, ± 10%	9800 (1000)	N (Kg)	
wt	Approximate weight	83	g	
	Case style	B-43		See Outline Table

Ordering Information Table

Device Code

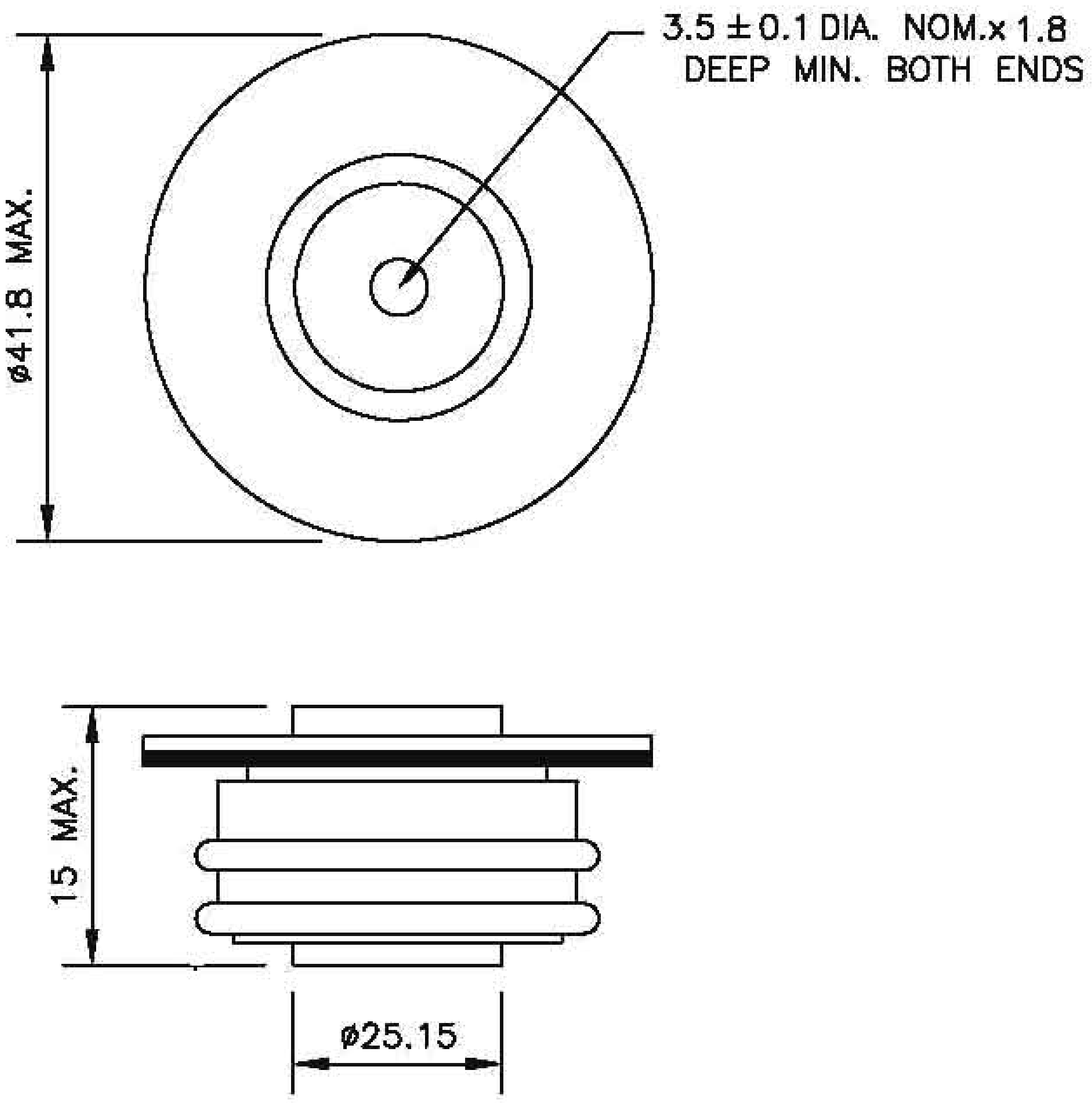


1 - R = Diode
2 - Essential part number
3 - E = Puk Case B-43
4 - Voltage code: Code x 100 = V_{RRM} (see Voltage Ratings table)
5 - C = Ceramic Puk
6 - F = Fast recovery

SILICON RECTIFIERS

R600E...F SERIES

Outline Table



Case Style B-43

All dimensions in millimeters