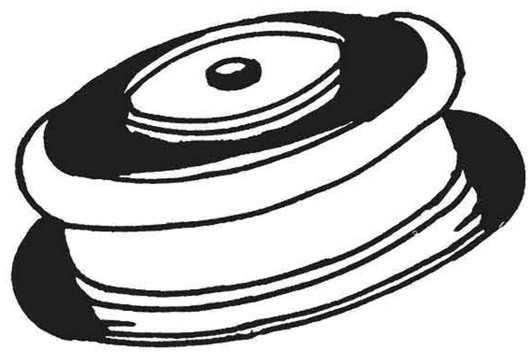
Ruttonsha International Rectifier Ltd.

STANDARD RECOVERY DIODES

High Power Diode
Hockey Puk Version
R1600 B...C Series

Type:- R1600B...20C to R1600B...30C

R1600B (B - PUK)



FEATURES

- *Wide current range*
- *High voltage ratings up to 3000 V*
- *High surge current capabilities*
- *Case style DO- 200AB (B-PUK)*

TYPICAL APPLICATIONS

- *Converters*
- *High power drives*
- *Power supplies*
- *Traction Application*

MAJOR RATINGS & CHARACTERISTICS

Parameters		R1600 B	Units
$I_{F(AV)}$		1600	A
	@ T_{hs}	55	℃
$I_{F(RMS)}$		3010	A
	@ T_{hs}	25	℃
I_{FSM}	@ 50 Hz	16600	A
I^2t	@ 50 Hz	1386	KA^2s
V_{RRM} range		2000 to 3000	V
T_J		-40 to 180	℃

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R1600B...C

ELECTRICAL SPECIFICATION

VOLTAGE RATINGS

Type Number	Voltage Code	V_{RRM} , max. repetitive peak reverse voltage V	V_{RRM} , max. non- repetitive peak reverse voltage V	I_{DRM} max. @ $T_J = T_J$ max. mA
R1600 B	20	2000	2100	50
	22	2200	2300	
	26	2600	2700	
	28	2800	2900	
	30	3000	3100	

FORWARD CONDUCTION

	Parameter	R1600 B	Units	Conditions	
$I_{F(AV)}$	Max. average Forward current	1600(820)	A	180^0 conduction, half sine wave	
	@ heat sink temperature	55(85)	^0C	double side (single side) cooled	
$I_{F(RMS)}$	Max. RMS Forward current	3010	A	@25^{0}C heat sink temperature (double side cooled)	
I_{FSM}	Max. peak one cycle Forward non-repetitive surge current	16600		t = 10ms	Sinusodial half wave, Initial $T_J = T_J$ max.
		14000			
I^2t	Maximum I^2t for fusing	1386	kA^2s	t = 10ms	
		980			
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	13860	$kA^2\sqrt{s}$	t = 0.1 to 10ms. No voltage reapplied.	
$V_{F(TO)}$	Threshold voltage	0.83	V	$T_J = T_J$ max.	
r_f	Forward slope resistance	0.27	mΩ	$T_J = T_J$ max.	
V_{FM}	Max. Forward voltage drop	1.64	V	I_{pk} = 2500A, $T_J = T_J$ max., t_p = 10ms sine pulse	

THERMAL AND MECHANICAL SPECIFICATION

	Parameter	R1600 B	Units	Conditions
T_J	Max. operating temperature range	-40 to 180	^0C	
T_{stg}	Max. storage temperature range	-55 to 200		
R_{thJ-hs}	Max. thermal resistance, junction to heat sink	0.073	K/W	DC operation single side cooled
		0.031		DC operation double side cooled
F	Mounting force, ±10%	14700 (1500)	N (kg)	
w t	Approximate weight	255	g	
	Case style	DO-200AB(B-PUK)		See outline

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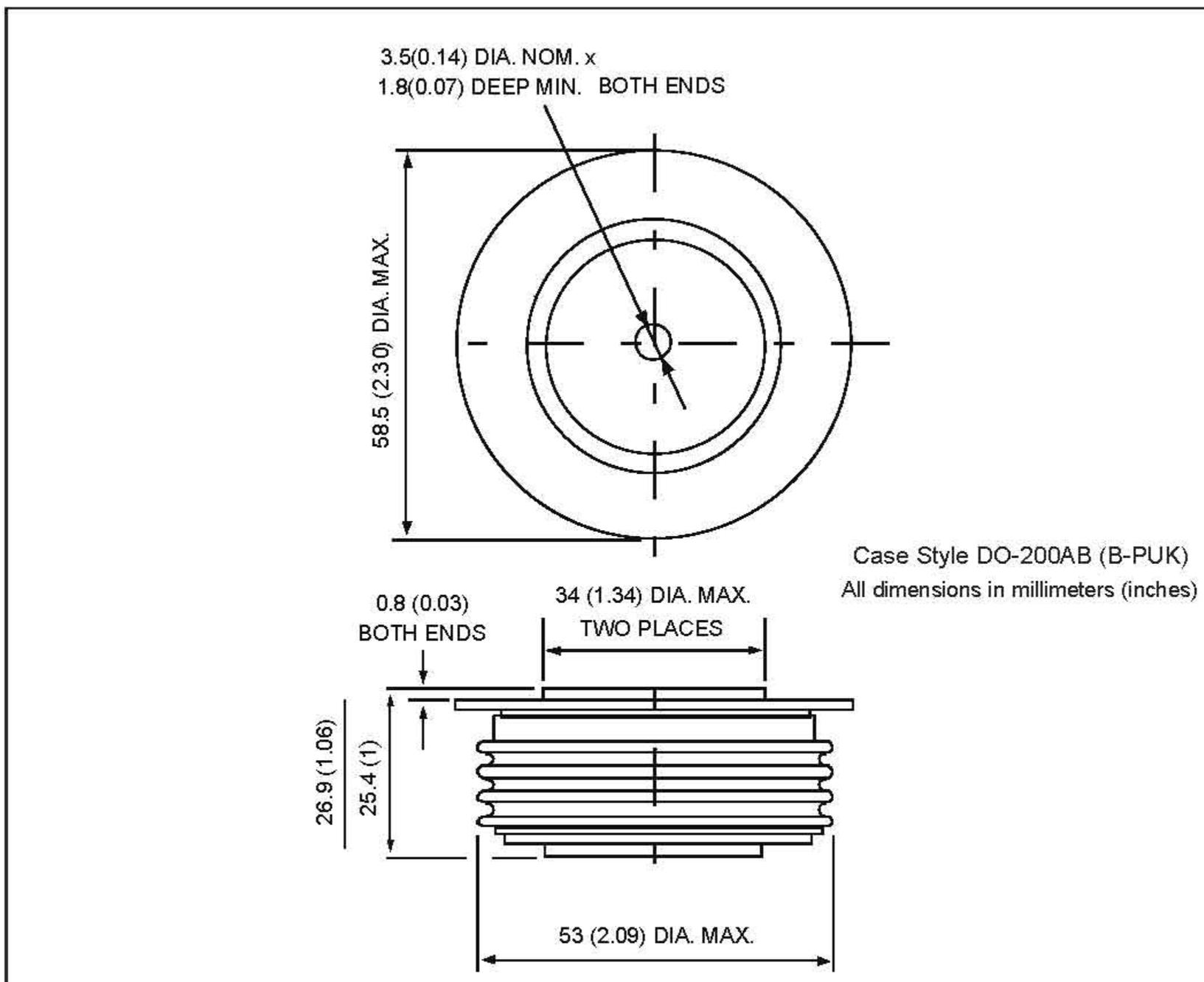
R1600B...C

Outline Table



Case Style DO-200AB (B-PUK)
All dimensions in millimeters (inches)

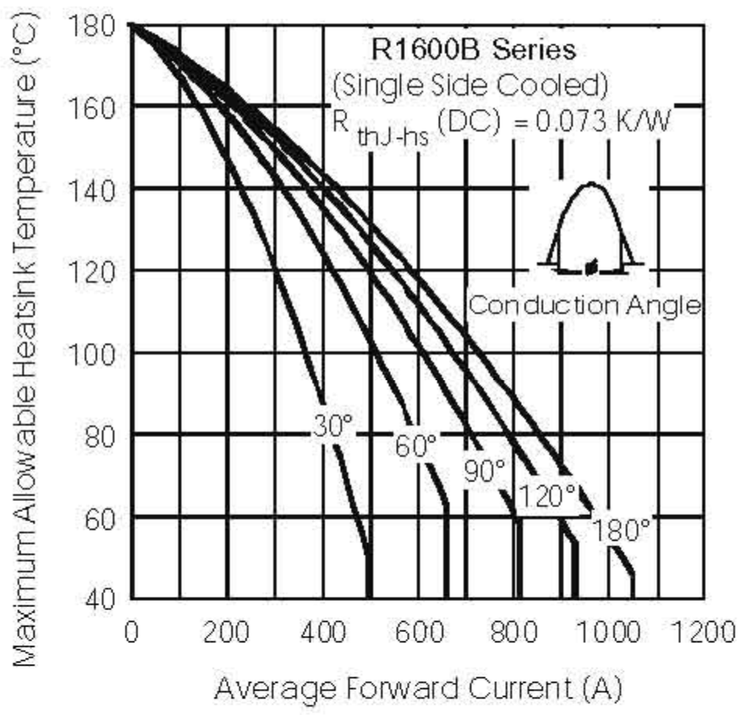


Fig. 1 - Current Ratings Characteristics

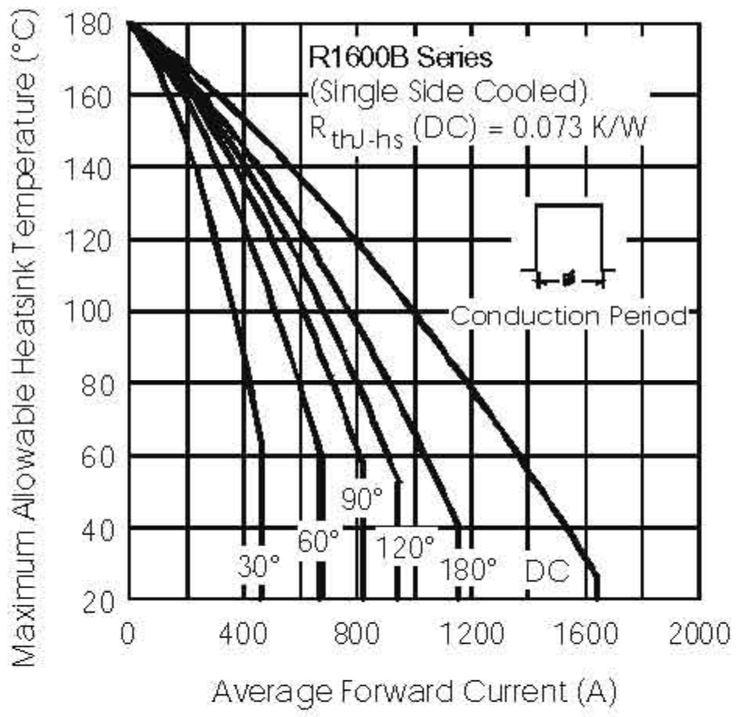


Fig. 2 - Current Ratings Characteristics

R1600B...C

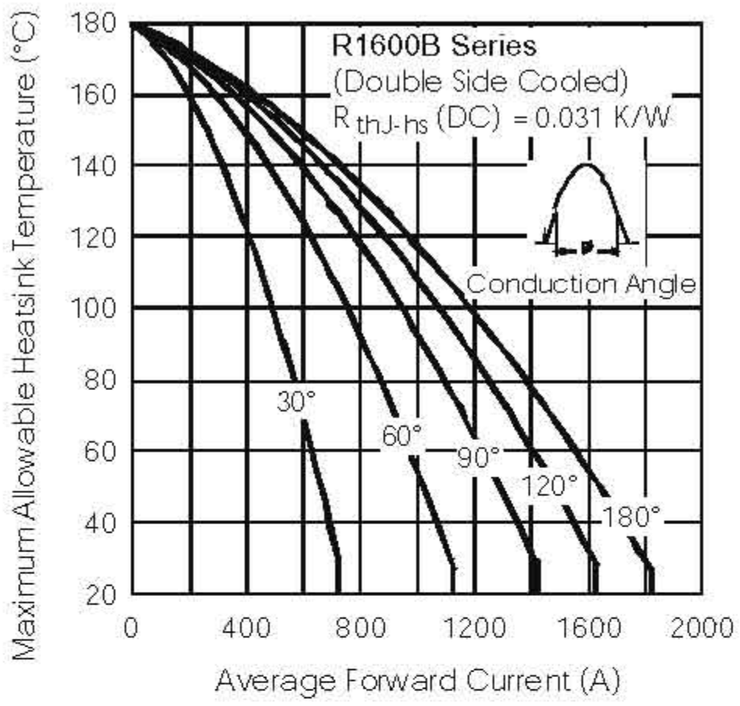


Fig. 3 - Current Ratings Characteristics

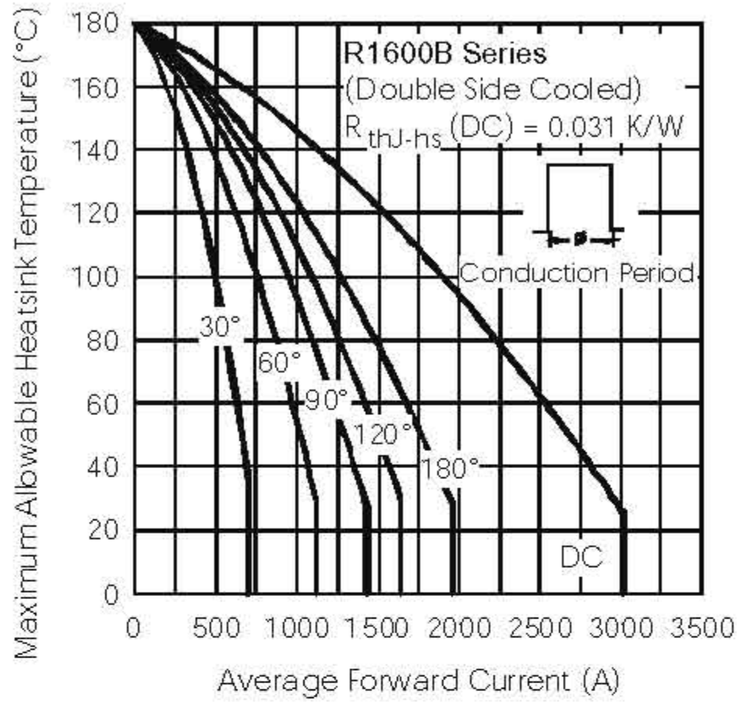


Fig. 4 - Current Ratings Characteristics

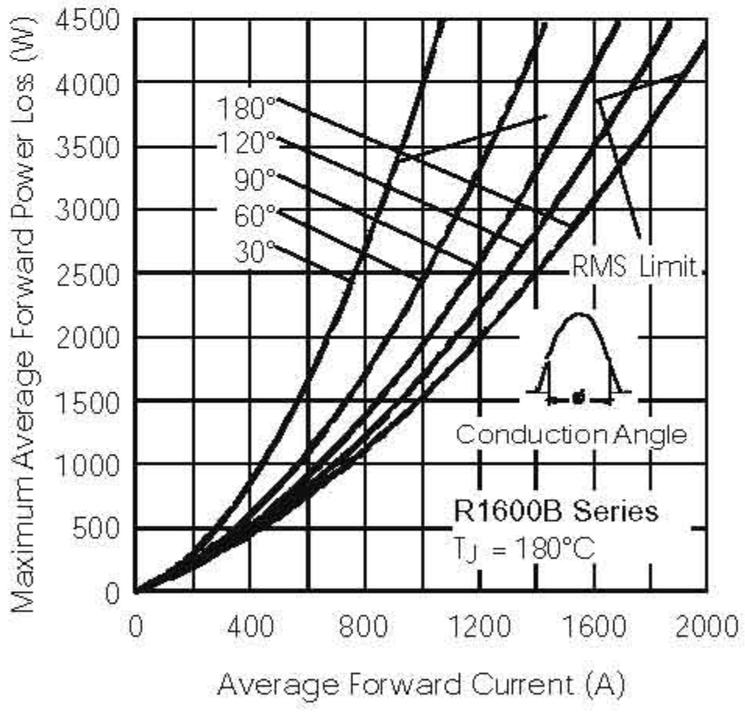


Fig. 5 - Forward Power Loss Characteristics

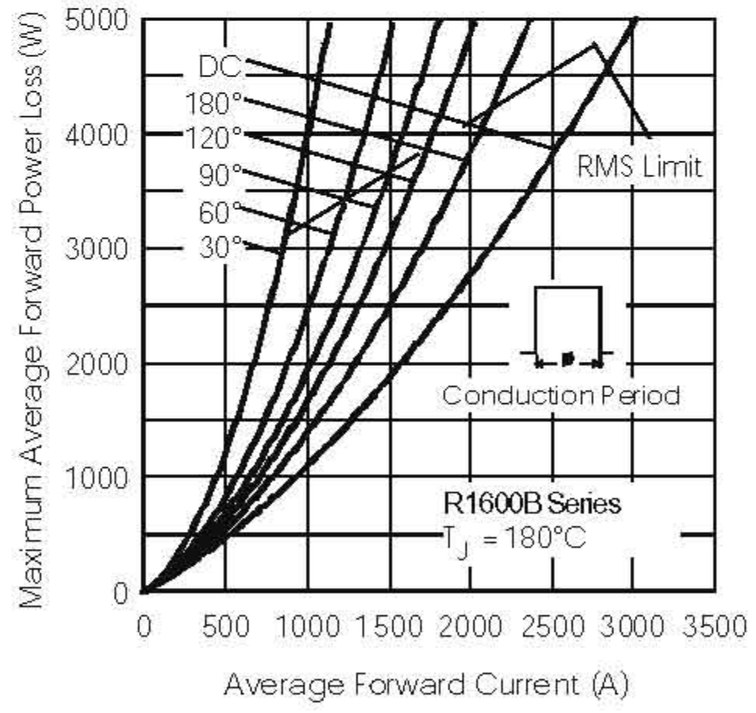


Fig. 6 - Forward Power Loss Characteristics

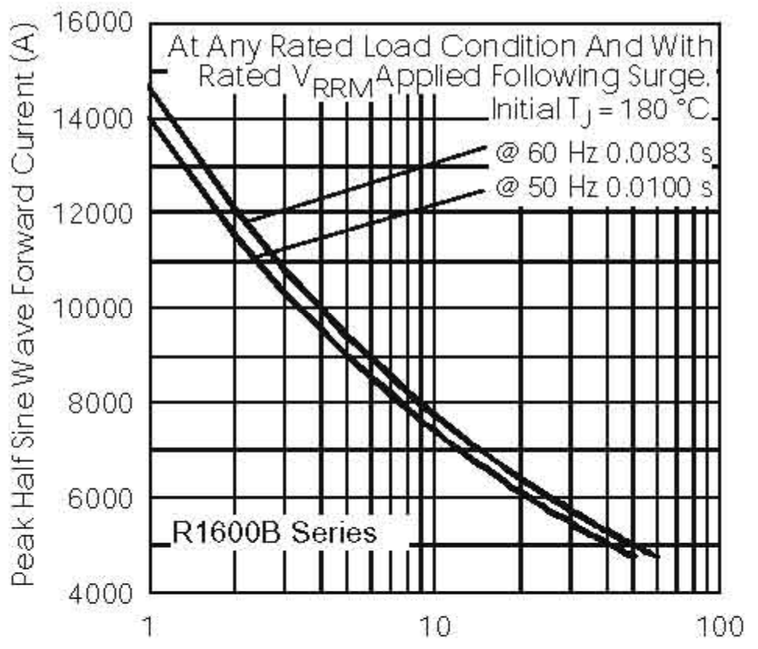


Fig. 7 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

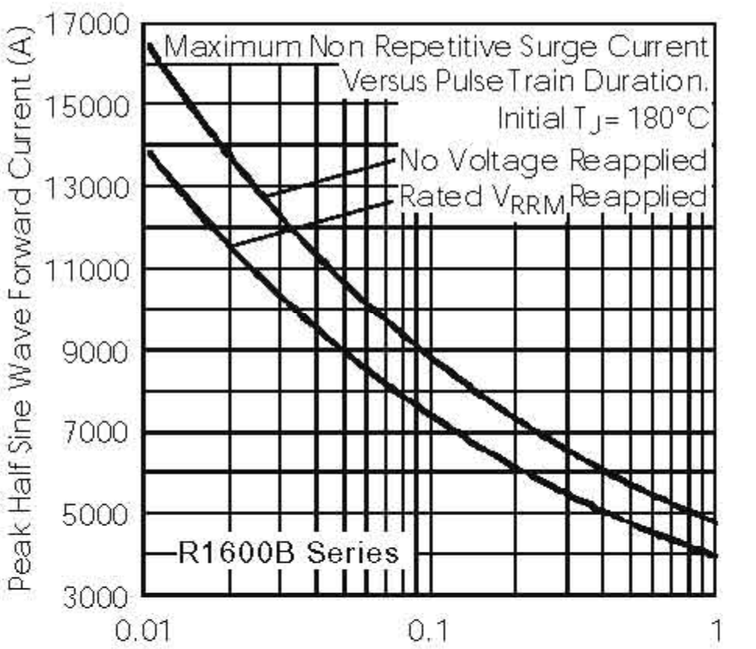


Fig. 8 - Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

R1600B...C

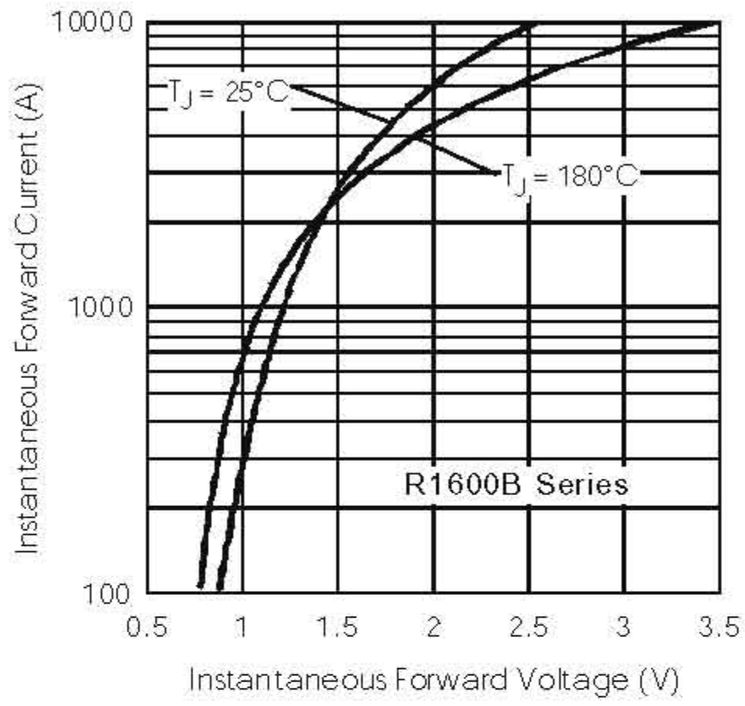


Fig. 9 - Forward Voltage Drop Characteristics

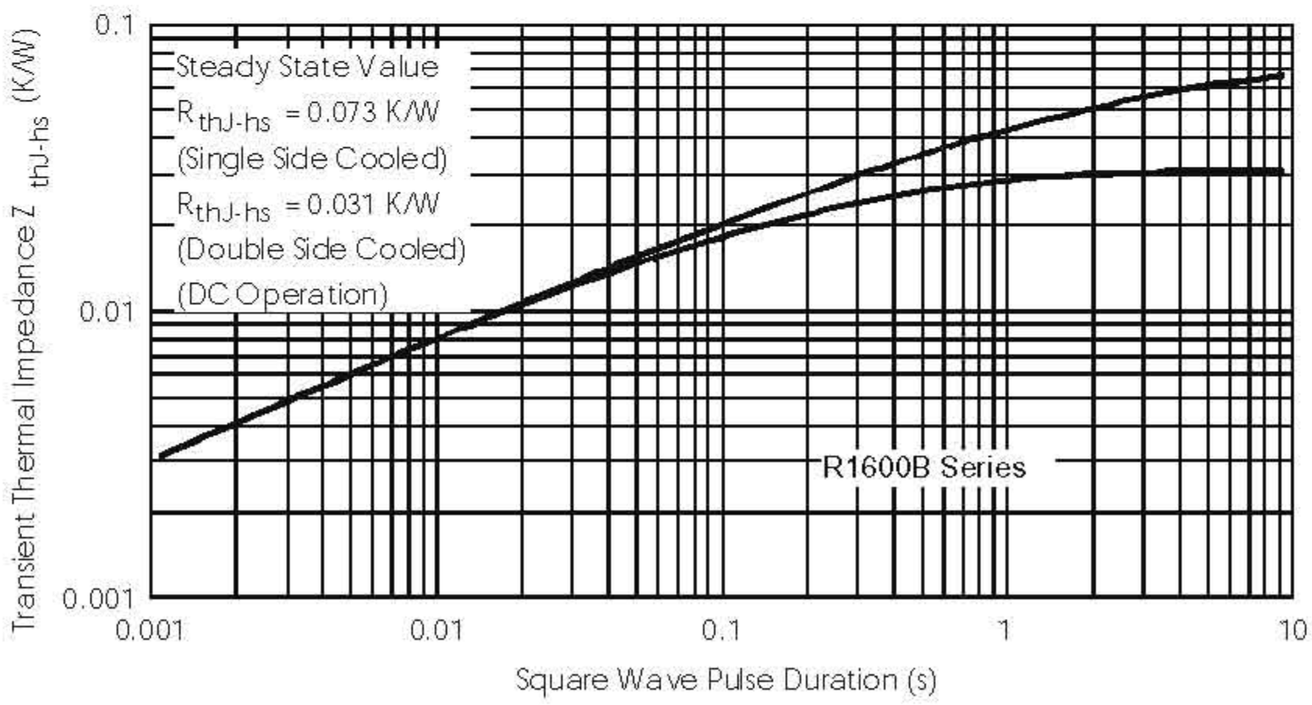


Fig. 10 - Thermal Impedance Z_{thJC} Characteristics