



Ruttonsha International Rectifier Ltd.

STANDARD RECOVERY DIODES

High Power Diode Hockey Puk Version R1100 E & R1400 E...C Series

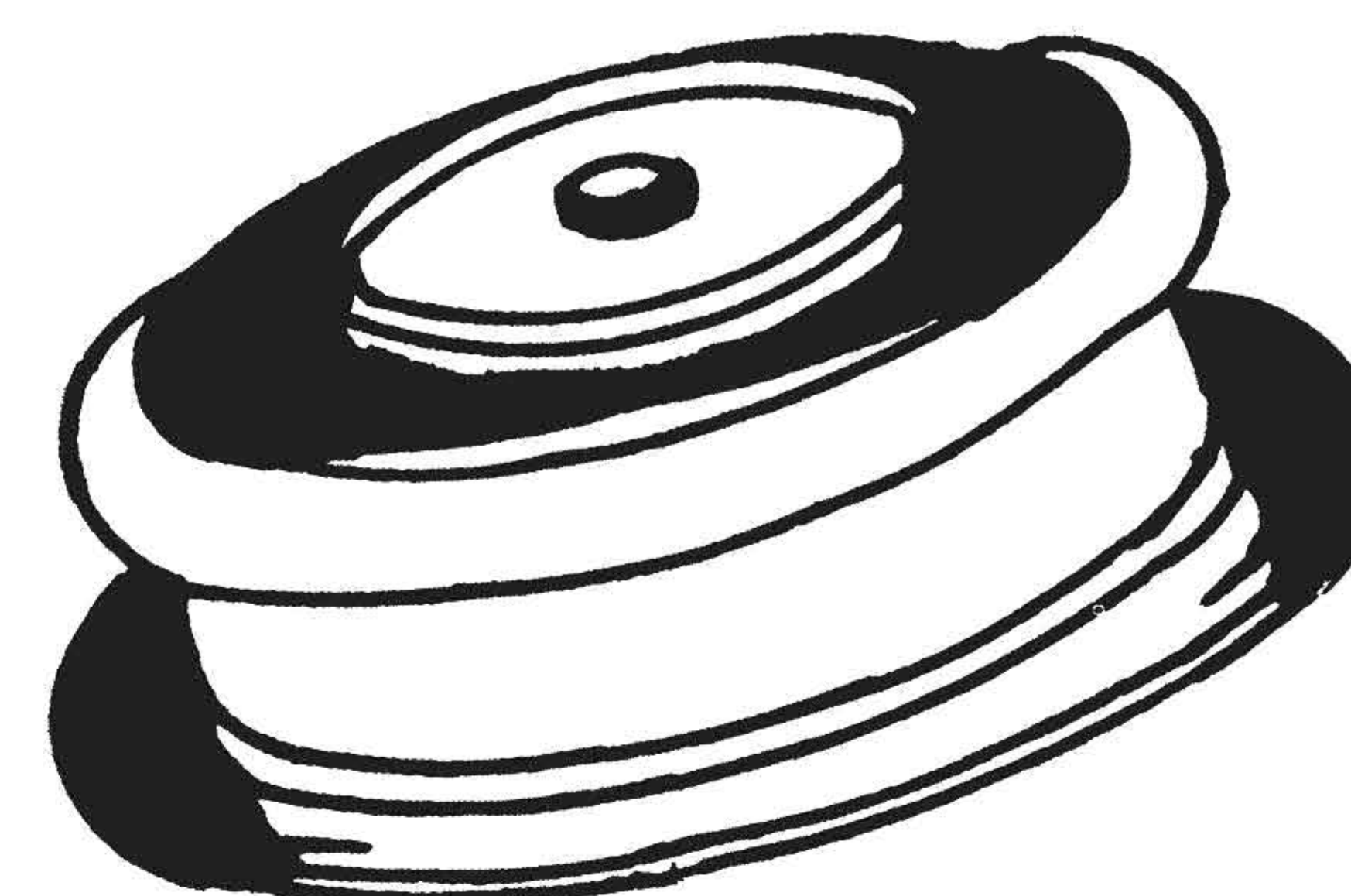
FEATURES

- ❖ *Wide current range*
- ❖ *High voltage ratings up to 1400 V*
- ❖ *High surge current capabilities*
- ❖ *Case style B-43 (E-PUK)*

TYPICAL APPLICATIONS

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

R1100 E & R1400 E (E - PUK)



MAJOR RATINGS & CHARACTERISTICS

Parameters	R1100 E	R1400 E	Units
$I_{F(AV)}$	1100	1400	A
@ T_{hs}	55	55	°C
$I_{F(RMS)}$	1727	2200	A
@ T_{hs}	55	55	°C
I_{FSM} @ 50 Hz	10500	13000	A
I^2t @ 50 Hz	551	846	KA ² s
V_{RRM} range	200 to 1600	200 to 1600	V
T_J	-40 to 160	-40 to 160	°C

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R1100 E & R1400 E

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
R1100 E R1400 E	02	200	300	50
	04	400	500	
	06	600	700	
	08	800	900	
	10	1000	1100	
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	

FORWARD CONDUCTION

	Para	R1100 E	R1400 E	Units	Conditions
$I_{F(AV)}$	Max. average Forward current @ heat sink temperature	1100	1400	A	180° conduction, half sine wave double side cooled
		55	55	°C	
$I_{F(RMS)}$	Max. RMS Forward current	1727	2200	A	@55°C heat sink temperature (double side cooled)
I_{FSM}	Max. peak one cycle Forward non-repetitive surge current	10500	13000	A	t = 10ms Sinusoidal half wave, Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	551	846	kA ² s	t = 10ms
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	5510	8460	kA ² √s	t = 0.1 to 10ms. No voltage reapplied.
$V_{F(TO)}$	Threshold voltage	0.84	0.78	V	$T_J = T_J$ max.
r_f	Forward slope resistance	0.40	0.35	mΩ	$T_J = T_J$ max.
V_{FM}	Max. Forward voltage drop	1.44	1.31	V	$I_{pk} = 1500A$, $T_J = T_J$ max., $t_p = 10ms$ sine pulse

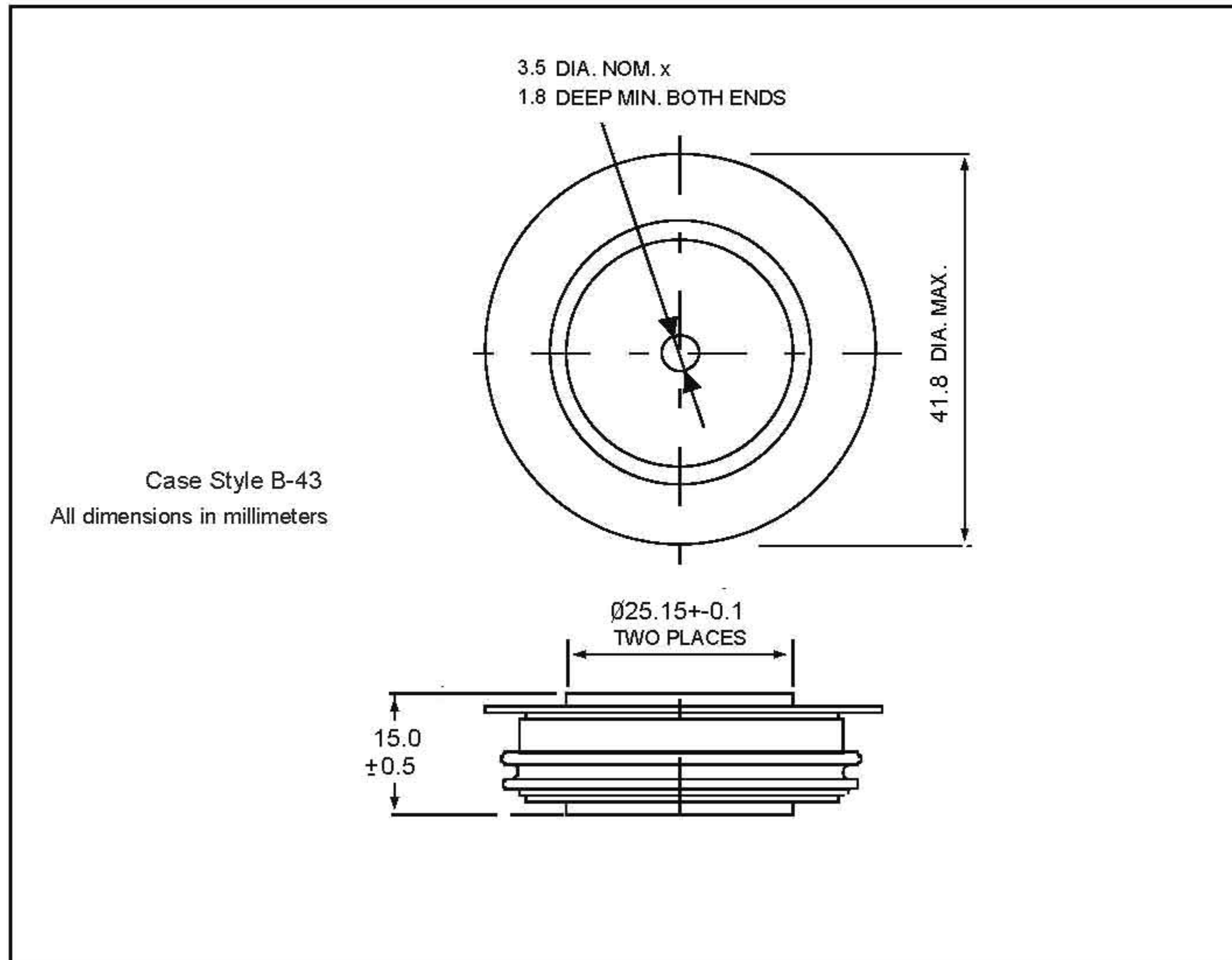
THERMAL AND MECHANICAL SPECIFICATION

	Parameter	R1100 E	R1400 E	Units	Conditions
T_J	Max. operating temperature range	-40 to 160	-40 to 160	°C	
T_{stg}	Max. storage temperature range	-55 to 200			
R_{thJ-hs}	Max. thermal resistance, junction to heat sink	0.05	0.038	K/W	DC operation double side cooled
F	Mounting force, ±10%	9800 (1000)		N (kg)	
w t	Approximate weight	83		g	
	Case style	E-PUK			See outline

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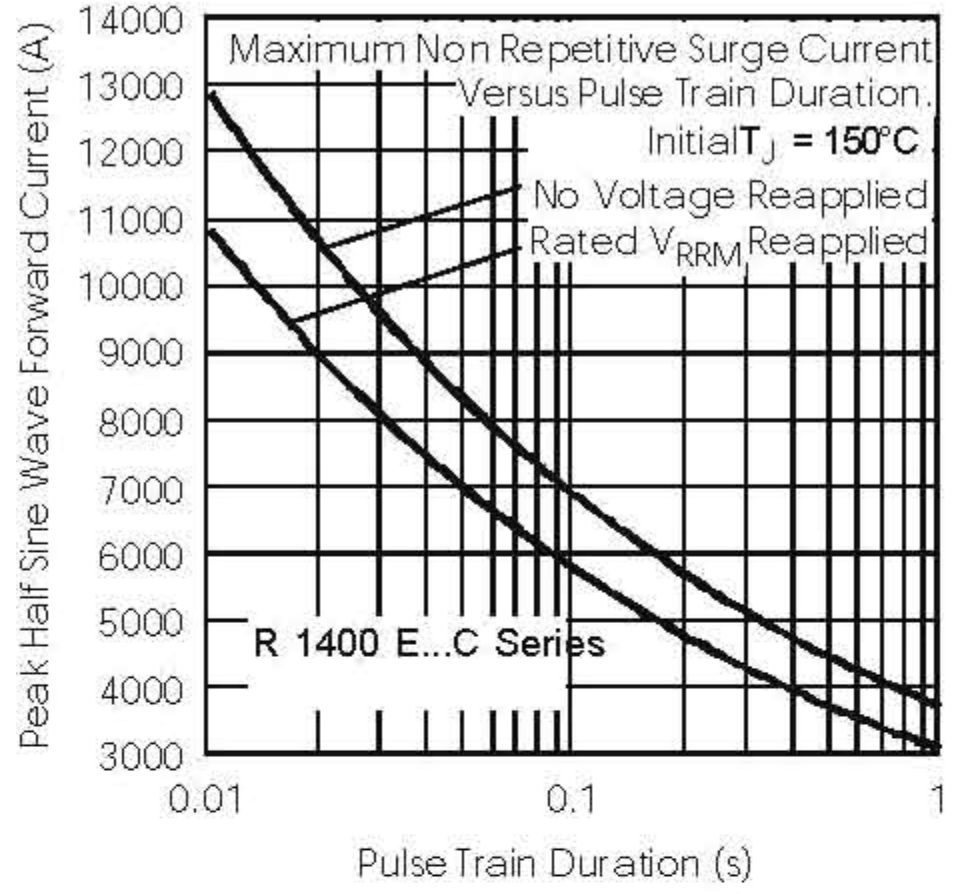
R1100E & R1400E...C Series

Outline Table

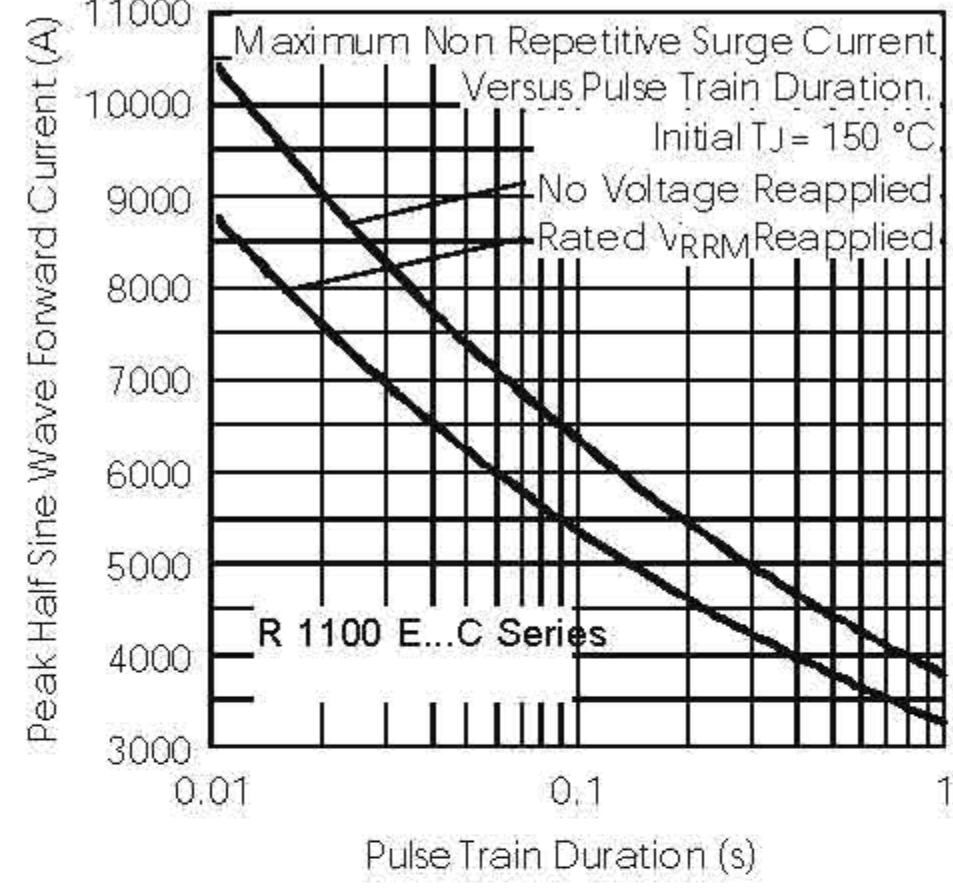


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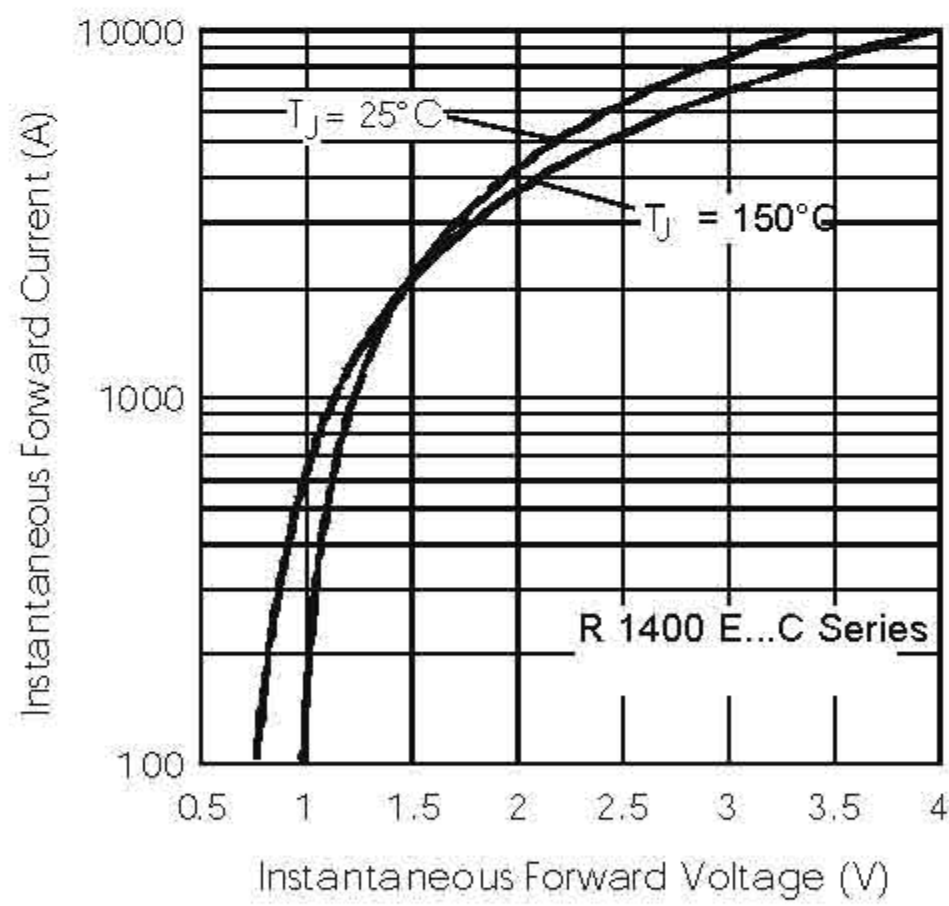
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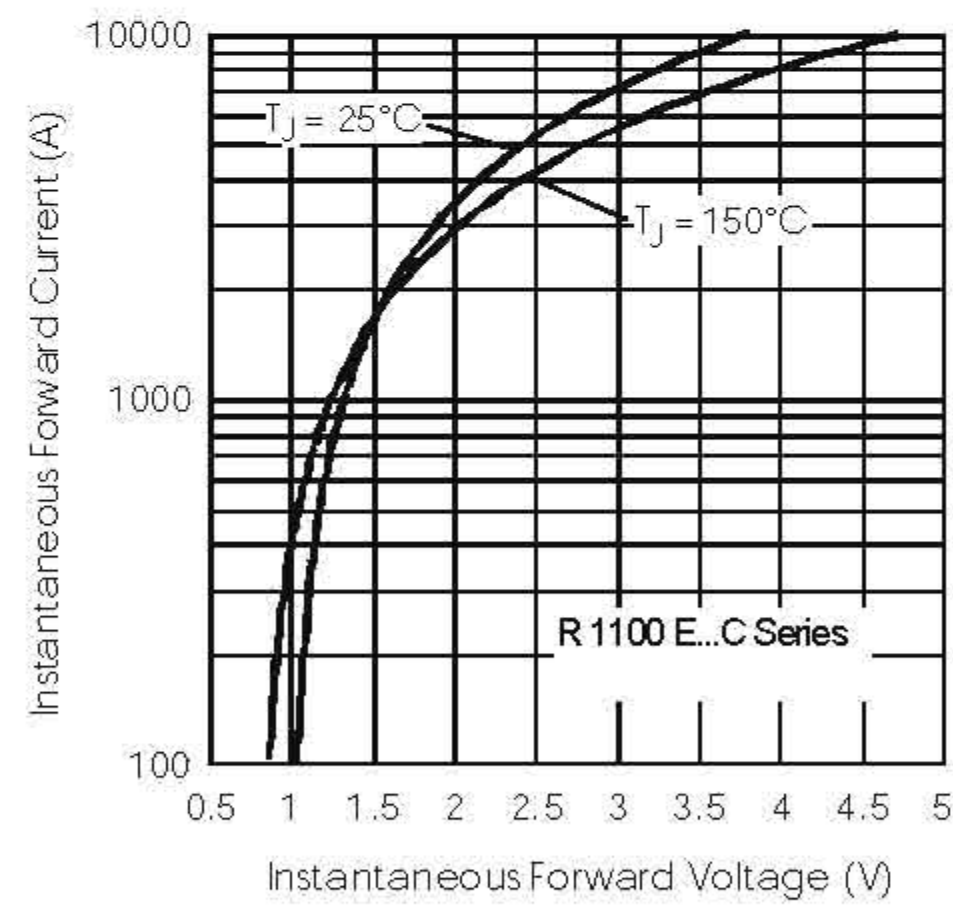
Maximum Non-Repetitive Surge Current Single and Double Side Cooled



Maximum Non-Repetitive Surge Current Single and Double Side Cooled



Forward Voltage Drop Characteristics



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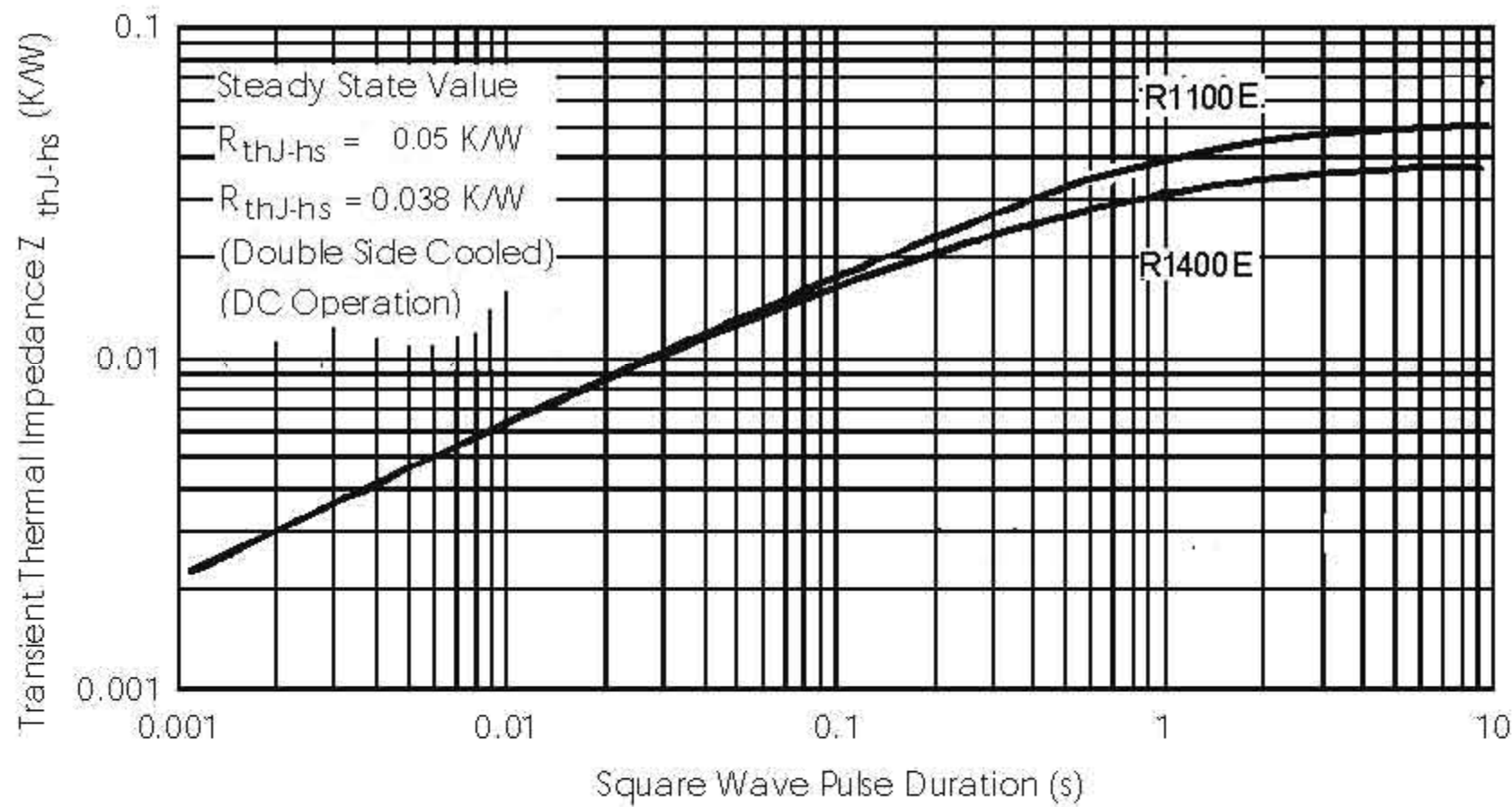


Fig. 19- Thermal Impedance Z_{thJC} Characteristics