

STANDARD RECOVERY DIODES

Hockey Puk Version

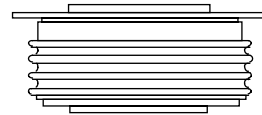
Features

- Wide current range
- High voltage ratings up to 4500V
- High surge current capabilities
- Diffused junction
- Hockey Puk version
- Case style DO-200AB (B-PUK)

Typical Applications

- Converters
- Power supplies
- Machine tool controls
- High power drives
- Medium traction applications

1200A



case style DO-200AB (B-PUK)

Major Ratings and Characteristics

Parameters	SD800C..L		Units	
	24 to 36	40 to 45		
$I_{F(AV)}$	1180	1065	A	
@ T_{hs}	55	55	°C	
$I_{F(RMS)}$	2280	2040	A	
@ T_{hs}	25	25	°C	
I_{FSM}	@ 50Hz	13600	12200	A
	@ 60Hz	14240	12800	A
I^2t	@ 50Hz	925	745	KA ² s
	@ 60Hz	845	680	KA ² s
V_{RRM} range	2400 to 3600	4000 to 4500	V	
T_J	- 40 to 150	- 40 to 150	°C	

SD800C..L Series

Bulletin I2085 rev. B 04/00

International
IOR Rectifier

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
SD800C..L	24	2400	2500	50
	30	3000	3100	
	36	3600	3700	
	40	4000	4100	
	45	4500	4600	

Forward Conduction

Parameter	SD800C..L		Units	Conditions
	24 to 36	40 to 45		
$I_{F(AV)}$ Max. average forward current @ Heatsink temperature	1180(550) 55(85)	1065(490) 55(85)	A °C	180° conduction, half sine wave Double side (single side) cooled
$I_{F(RMS)}$ Max. RMS forward current	2280	2040	A	@ 25°C heatsink temperature double side cooled
I_{FSM} Max. peak, one-cycle forward, non-repetitive surge current	13600	12200	A	t = 10ms No voltage
	14240	12800		t = 8.3ms reapplied
	11440	10250		t = 10ms 50% V_{RRM}
	11980	10750		t = 8.3ms reapplied
I^2t Maximum I^2t for fusing	925	745	KA ² s	t = 10ms No voltage
	845	680		t = 8.3ms reapplied
	654	526		t = 10ms 50% V_{RRM}
	597	480		t = 8.3ms reapplied
I^2/t Maximum I^2/t for fusing	9250	7450	KA ² /s	t = 0.1 to 10ms, no voltage reapplied
$V_{F(TO)1}$ Low level value of threshold voltage	0.90	1.06	V	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ max.
$V_{F(TO)2}$ High level value of threshold voltage	1.10	1.18		$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ max.
r_{f1} Low level value of forward slope resistance	0.38	0.44	mΩ	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$, $T_J = T_J$ max.
r_{f2} High level value of forward slope resistance	0.34	0.41		$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ max.
V_{FM} Max. forward voltage drop	1.66	1.95	V	$I_{pk} = 2000A$, $T_J = T_J$ max, $t_p = 10ms$ sinusoidal wave

Thermal and Mechanical Specifications

Parameter	SD800C..L		Units	Conditions
	24 to 36	40 to 45		
T _J Max. junction operating temperature range	-40 to 150	-40 to 150	°C	
T _{stg} Max. storage temperature range	-55 to 200	-55 to 200		
R _{thJ-hs} Max. thermal resistance, junction to heatsink	0.073		K/W	DC operation single side cooled DC operation double side cooled
	0.031			
F Mounting force, ± 10%	14700 (1500)		N (Kg)	
wt Approximate weight	255		g	
Case style	DO-200AB (B-PUK)			See Outline Table

ΔR_{thJ-hs} Conduction

(The following table shows the increment of thermal resistance R_{thJ-hs} when devices operate at different conduction angles than DC)

Conduction angle	Sinusoidal conduction		Rectangular conduction		Units	Conditions
	Single Side	Double Side	Single Side	Double Side		
180°	0.009	0.009	0.006	0.006	K/W	T _J = T _J max.
120°	0.011	0.011	0.011	0.011		
90°	0.014	0.014	0.015	0.015		
60°	0.020	0.020	0.021	0.021		
30°	0.036	0.036	0.036	0.036		

Ordering Information Table

Device Code		<table border="1" style="margin: auto;"> <tr> <td style="padding: 5px;">SD</td> <td style="padding: 5px;">80</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">C</td> <td style="padding: 5px;">45</td> <td style="padding: 5px;">L</td> </tr> <tr> <td style="text-align: center;">①</td> <td style="text-align: center;">②</td> <td style="text-align: center;">③</td> <td style="text-align: center;">④</td> <td style="text-align: center;">⑤</td> <td style="text-align: center;">⑥</td> </tr> </table>	SD	80	0	C	45	L	①	②	③	④	⑤	⑥						
SD	80	0	C	45	L															
①	②	③	④	⑤	⑥															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px 5px;">1</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">Diode</td></tr> <tr><td style="padding: 2px 5px;">2</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">Essential part number</td></tr> <tr><td style="padding: 2px 5px;">3</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">0 = Standard recovery</td></tr> <tr><td style="padding: 2px 5px;">4</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">C = Ceramic Puk</td></tr> <tr><td style="padding: 2px 5px;">5</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">Voltage code: Code x 100 = V_{RRM} (See Voltage Ratings table)</td></tr> <tr><td style="padding: 2px 5px;">6</td><td style="padding: 2px 5px;">-</td><td style="padding: 2px 5px;">L = Puk Case DO-200AB (B-PUK)</td></tr> </table>	1	-	Diode	2	-	Essential part number	3	-	0 = Standard recovery	4	-	C = Ceramic Puk	5	-	Voltage code: Code x 100 = V _{RRM} (See Voltage Ratings table)	6	-	L = Puk Case DO-200AB (B-PUK)		
1	-	Diode																		
2	-	Essential part number																		
3	-	0 = Standard recovery																		
4	-	C = Ceramic Puk																		
5	-	Voltage code: Code x 100 = V _{RRM} (See Voltage Ratings table)																		
6	-	L = Puk Case DO-200AB (B-PUK)																		

SD800C..L Series

Bulletin I2085 rev. B 04/00

International
IRF Rectifier

Outline Table

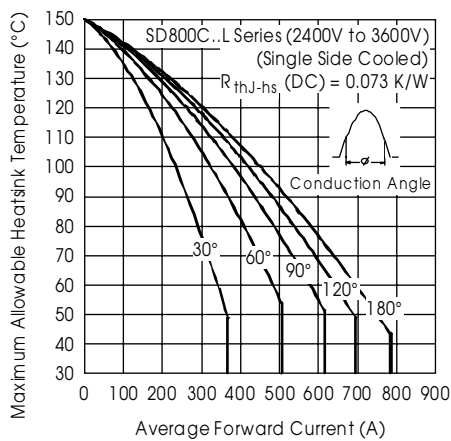
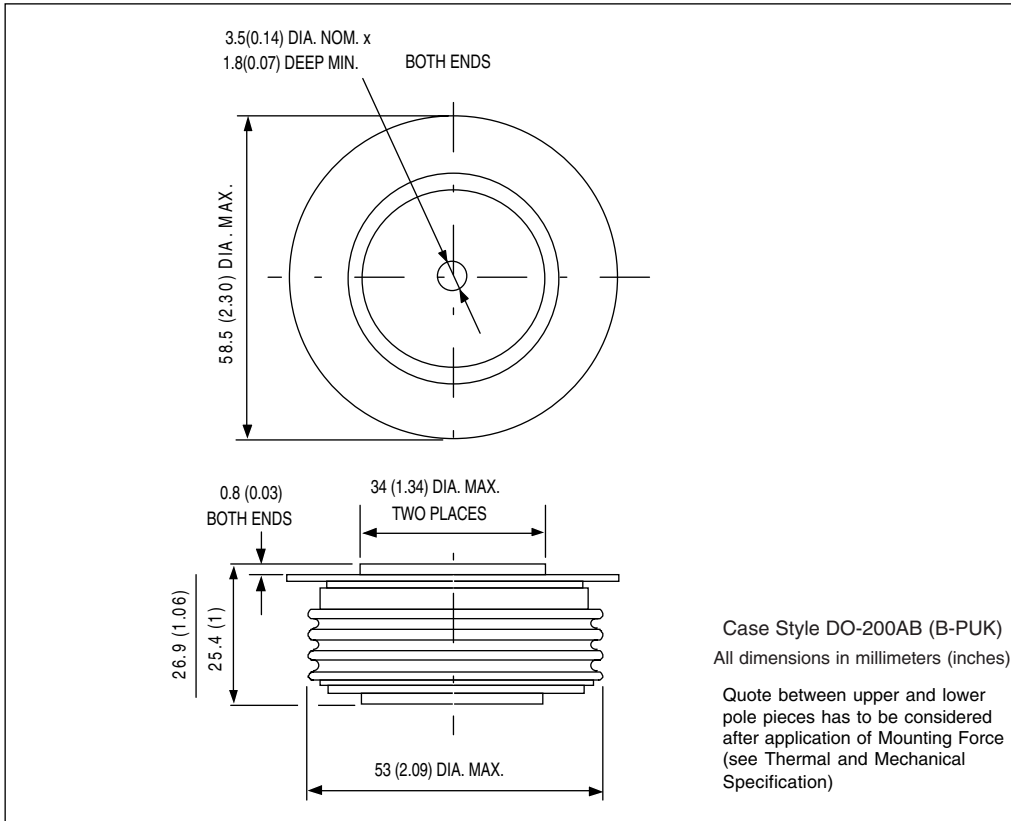


Fig. 1 - Current Ratings Characteristics

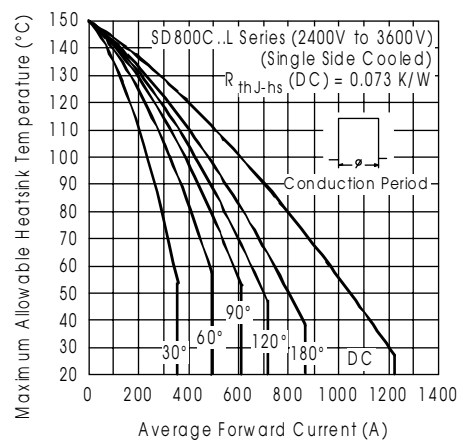


Fig. 2 - Current Ratings Characteristics

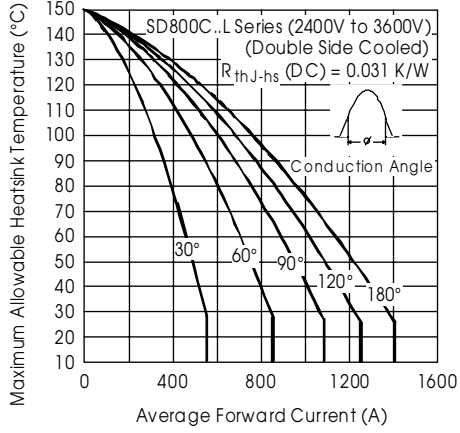


Fig. 3 - Current Ratings Characteristics

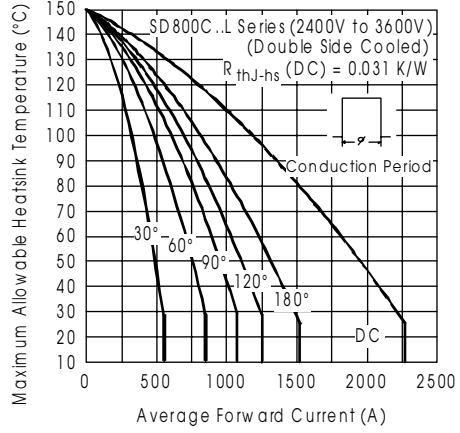


Fig. 4 - Current Ratings Characteristics

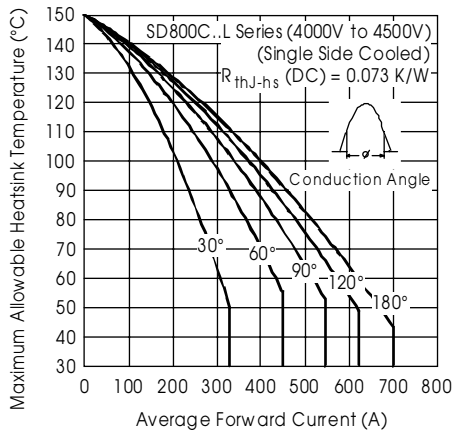


Fig. 5 - Current Ratings Characteristics

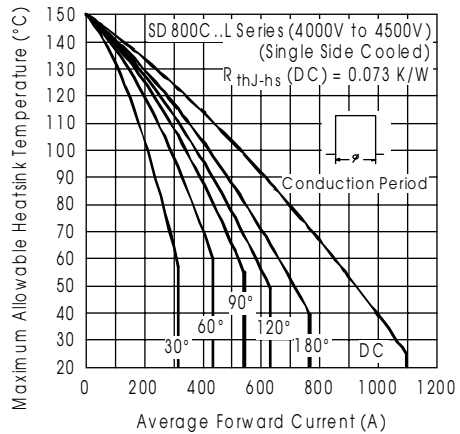


Fig. 6 - Current Ratings Characteristics

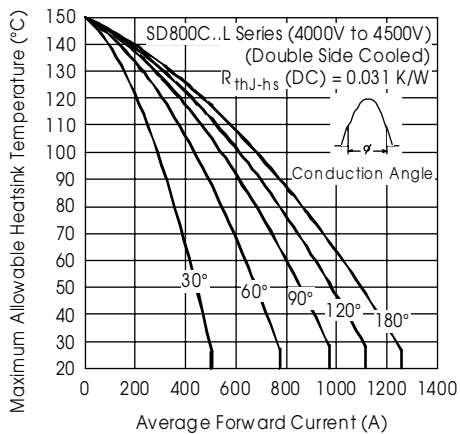


Fig. 7 - Current Ratings Characteristics

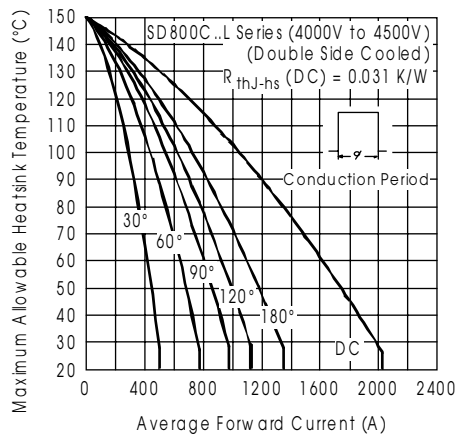


Fig. 8 - Current Ratings Characteristics

SD800C..L Series

Bulletin I2085 rev. B 04/00

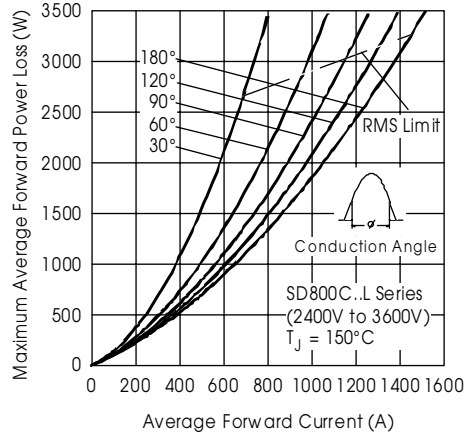


Fig. 9 - Forward Power Loss Characteristics

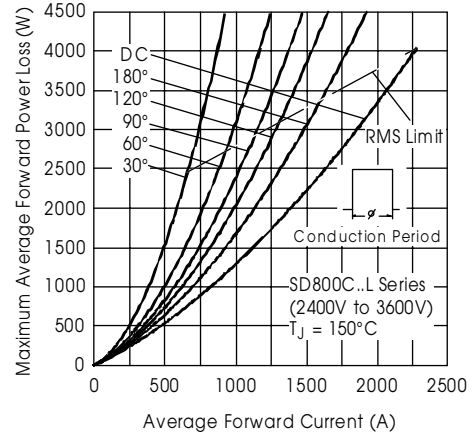


Fig. 10 - Forward Power Loss Characteristics

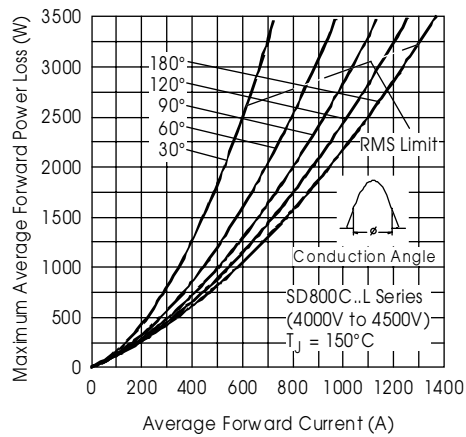


Fig. 11 - Forward Power Loss Characteristics

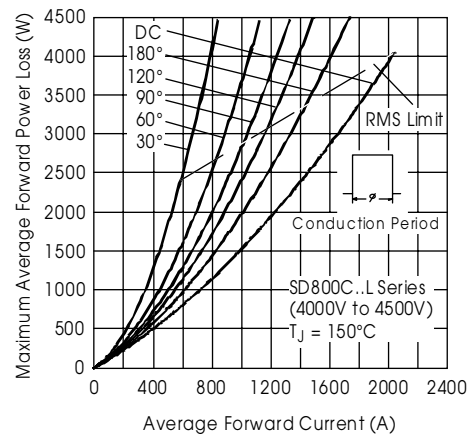


Fig. 12 - Forward Power Loss Characteristics

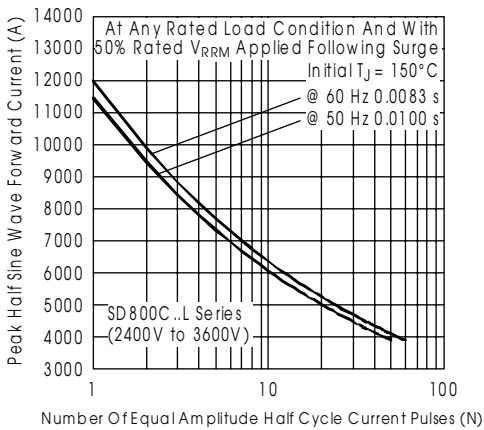


Fig. 13 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

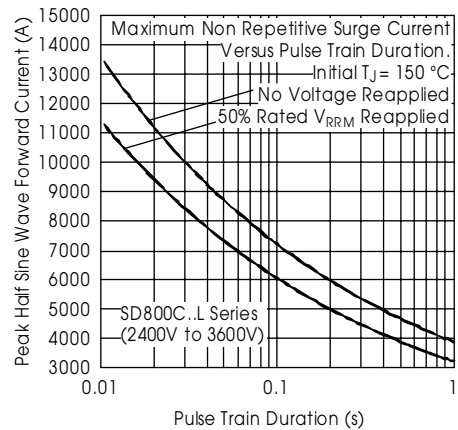


Fig. 14 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

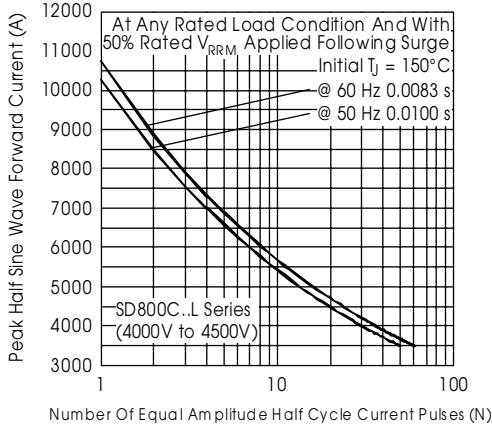


Fig. 15 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

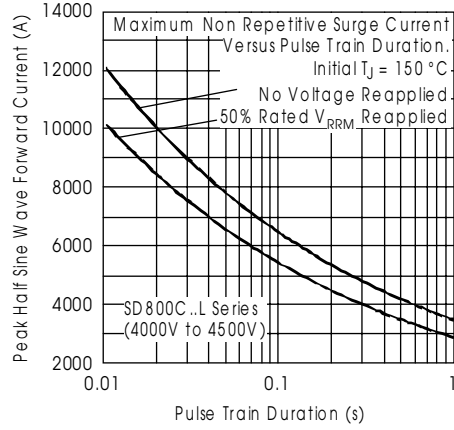


Fig. 16 - Maximum Non-Repetitive Surge Current Single and Double Side Cooled

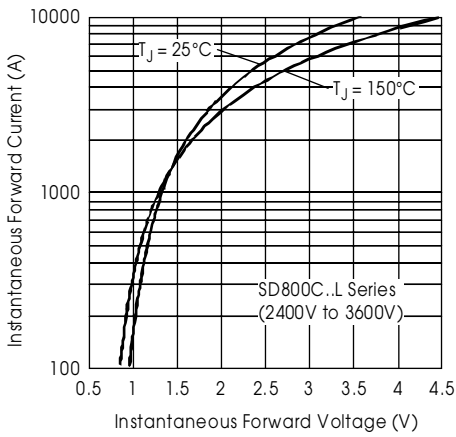


Fig. 17 - Forward Voltage Drop Characteristics

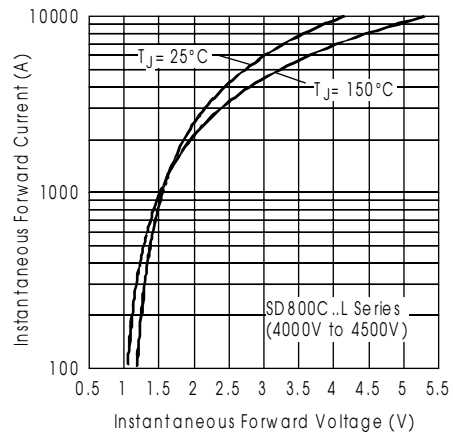


Fig. 18 - Forward Voltage Drop Characteristics

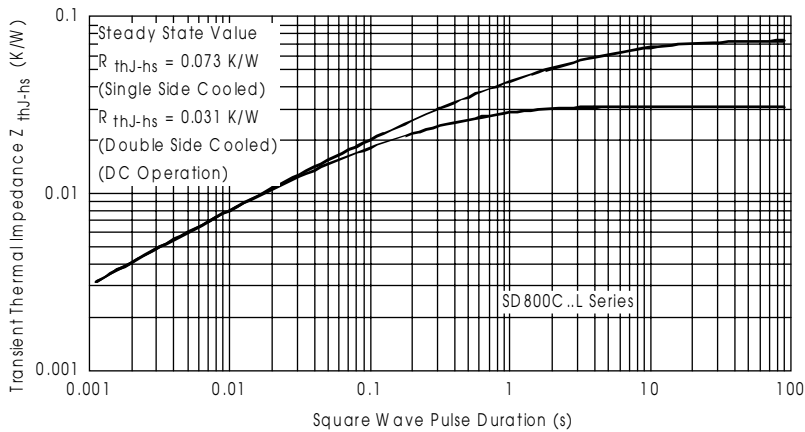


Fig. 19 - Thermal Impedance Z_{thJC} Characteristics