

International
IR Rectifier

SD150N/R SERIES

STANDARD RECOVERY DIODES

Stud Version

Features

- Wide current range
- High voltage ratings up to 2500V
- High surge current capabilities
- Stud cathode and stud anode version
- Standard JEDEC types

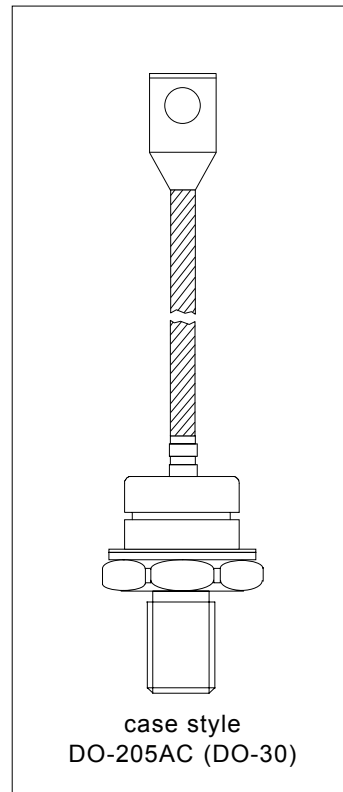
150A

Typical Applications

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

Major Ratings and Characteristics

Parameters	SD150N/R		Units	
	400 to 2000	2500		
$I_{F(AV)}$	150	200	A	
@ T_C	125	110	°C	
$I_{F(RMS)}$	235	314	A	
I_{FSM}	@ 50Hz	3600	4700	A
	@ 60Hz	3770	4920	A
i^2t	@ 50Hz	65	110	KA ² s
	@ 60Hz	59	101	KA ² s
V_{RRM} range	400 to 2000	2500	V	
T_J	- 40 to 180	150	°C	



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
SD150N/R	04	400	500	15
	08	800	900	
	12	1200	1300	
	16	1600	1700	
	20	2000	2100	
	25	2500	2600	

Forward Conduction

Parameter	SD150N/R	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ Case temperature	150	A	180° conduction, half sine wave
	125	°C	
$I_{F(AV)}$ Max. average forward current @ Case temperature	200	A	180° conduction, half sine wave
	110	°C	
$I_{F(RMS)}$ Max. RMS forward current	235	A	DC @ 113°C case temperature
I_{FSM} Max. peak, one-cycle forward, non-repetitive surge current	3600	A	t = 10ms No voltage reappplied
	3770		t = 8.3ms reappplied
	3000		t = 10ms 100% V_{RRM} reappplied
	3170		t = 8.3ms reappplied
I^2t Maximum I^2t for fusing	65	KA ² s	t = 10ms No voltage reappplied
	59		t = 8.3ms reappplied
	46		t = 10ms 100% V_{RRM} reappplied
	42		t = 8.3ms reappplied
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing	650	KA ² √s	t = 0.1 to 10ms, no voltage reappplied
$V_{F(TO)1}$ Low level value of threshold voltage	0.93	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	1.06	V	$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ max.
r_{f1} Low level value of forward slope resistance	1.27	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	1.04		$(I > \pi \times I_{F(AV)})$, $T_J = T_J$ max.
V_{FM} Max. forward voltage drop	1.5	V	$I_{pk} = 470A$, $T_J = T_J$ max, $t_p = 10ms$ sinusoidal wave

Thermal and Mechanical Specifications

Parameter	SD150N/R		Units	Conditions
	400to2000	2500		
T _J Max. junction operating temperature range	-40 to 180	150	°C	
T _{stg} Max. storage temperature range	-55 to 200			
R _{thJC} Max. thermal resistance, junction to case	0.23		K/W	DC operation
R _{thCS} Max. thermal resistance, case to heatsink	0.08			Mounting surface, smooth, flat and greased
T Max. allowed mounting torque ±10%	14		Nm	Not lubricated threads
wt Approximate weight	120		g	
Case style	DO-205AC(DO-30)		See Outline Table	

ΔR_{thJC} Conduction

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

Conduction angle	Sinusoidal conduction	Rectangular conduction	Units	Conditions
180°	0.041	0.030	K/W	T _J = T _J max.
120°	0.049	0.051		
90°	0.063	0.068		
60°	0.093	0.096		
30°	0.156	0.157		

Ordering Information Table

Di e Code

SD	15	0	N	25	P	B	C
①	②	③	④	⑤	⑥	⑦	⑧

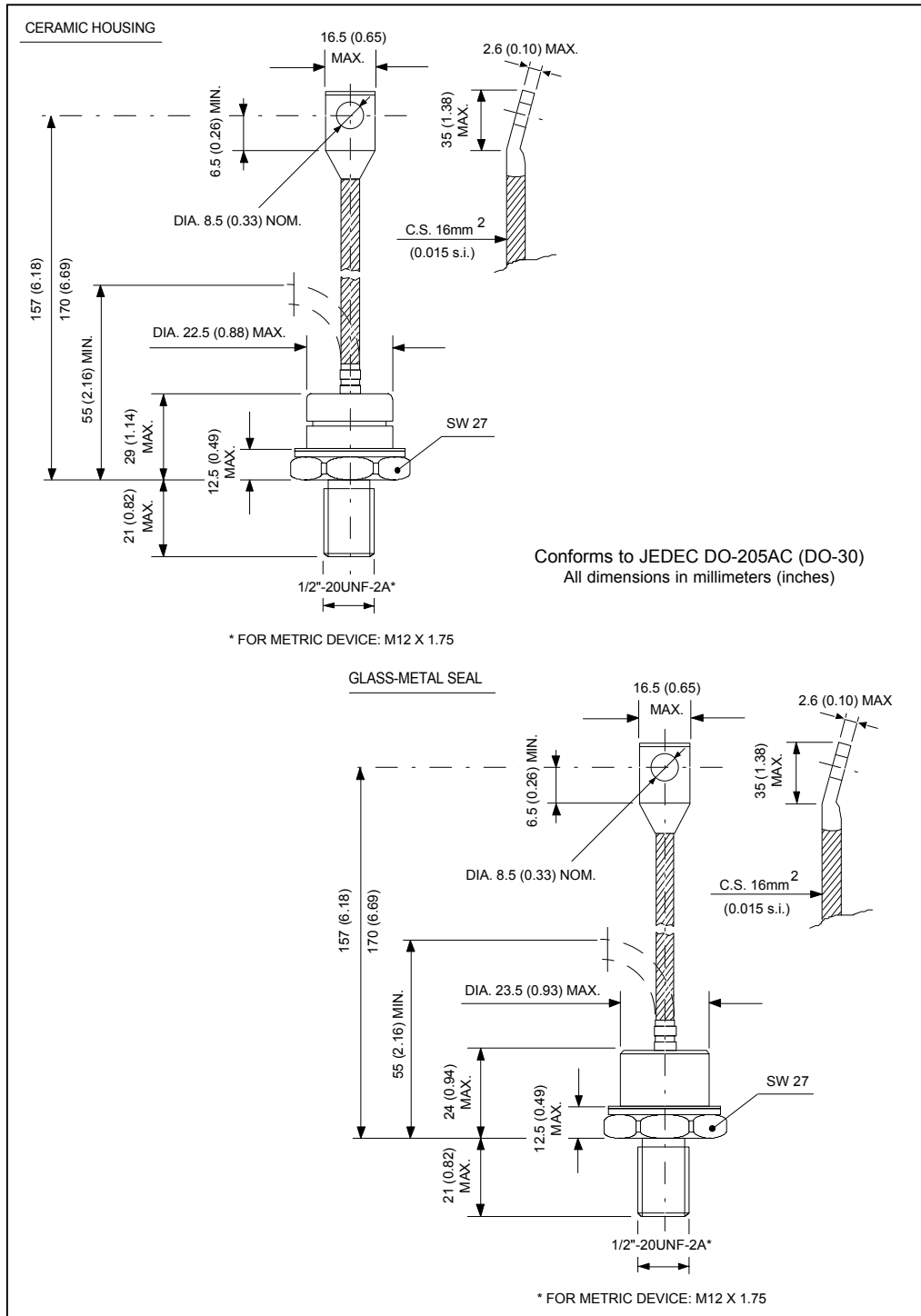
- 1** - Diode
- 2** - Essential part number
- 3** - 0 = Standard recovery
- 4** - N = Stud Normal Polarity (Cathode to Stud)
R = Stud Reverse Polarity (Anode to Stud)
- 5** - Voltage code: Code x 100 = V_{RRM} (See Voltage Ratings table)
- 6** - P = Stud base DO-205AC (DO-30) 1/2" 20UNF-2A
M = Stud base DO-205AC (DO-30) M12 X 1.75
- 7** - B = Flag top terminal (for Cathode/ Anode Leads)
S = Isolated lead with silicone sleeve
(Red = Reverse Polarity; Blue = Normal Polarity)
None = Non isolated lead
- 8** - C = Ceramic Housing (over 1600V)
V = Glass-metal seal (only up to 1600V)

SD150N/R Series

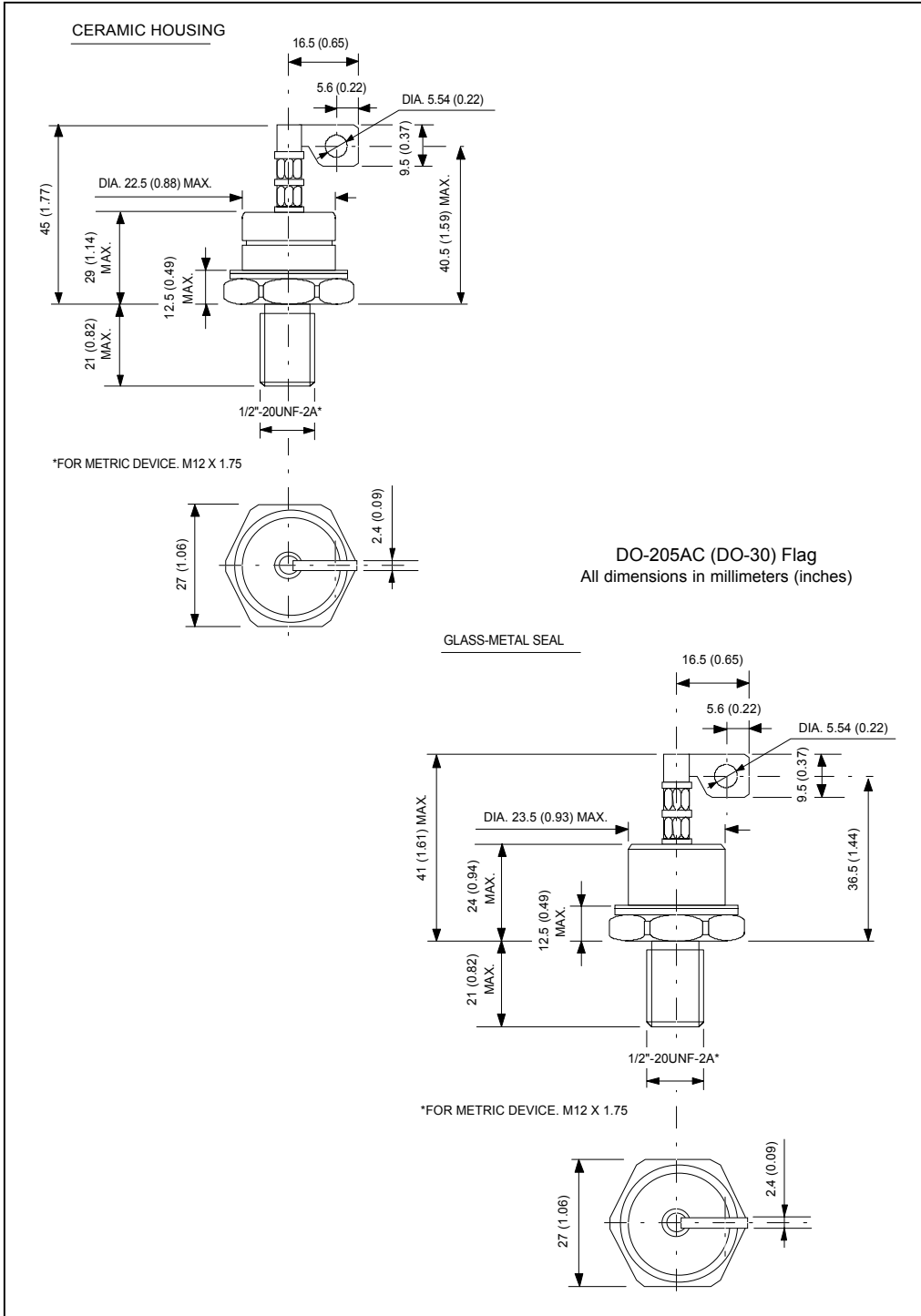
Bulletin I2077 rev. B 11/01



Outline Table



Outline Table



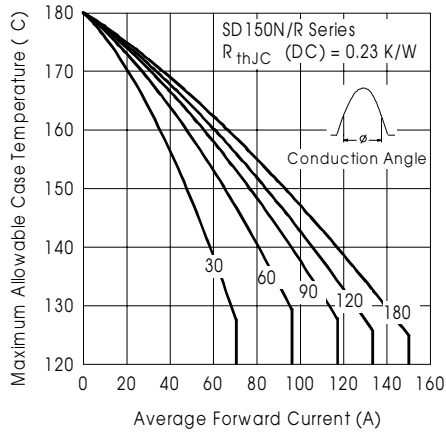


Fig. 1 - Current Ratings Characteristics

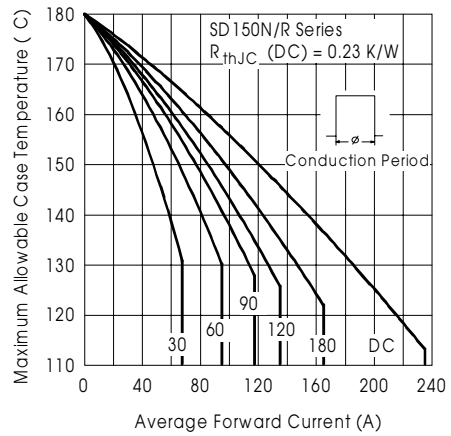


Fig. 2 - Current Ratings Characteristics

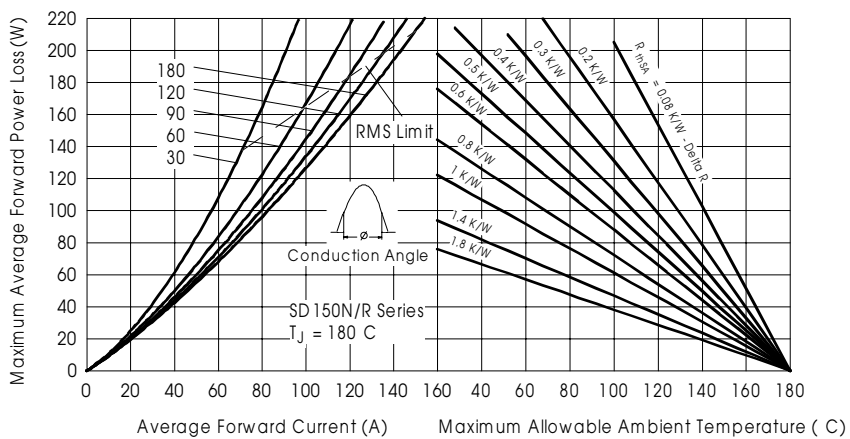


Fig. 3 - Forward Power Loss Characteristics

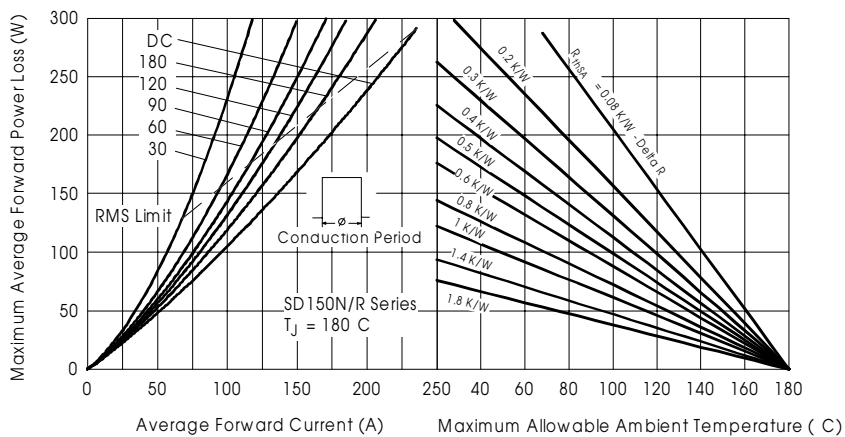


Fig. 4 - Forward Power Loss Characteristics

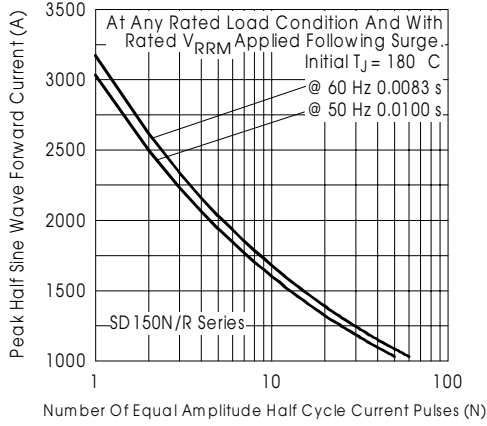


Fig. 5 - Maximum Non-Repetitive Surge Current

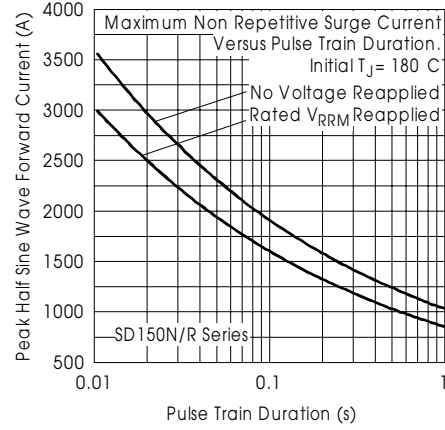


Fig. 6 - Maximum Non-Repetitive Surge Current

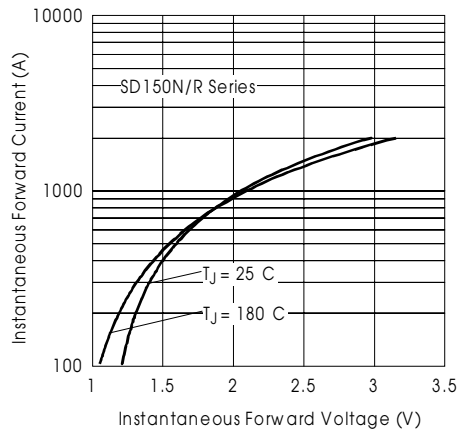


Fig. 7 - Forward Voltage Drop Characteristics

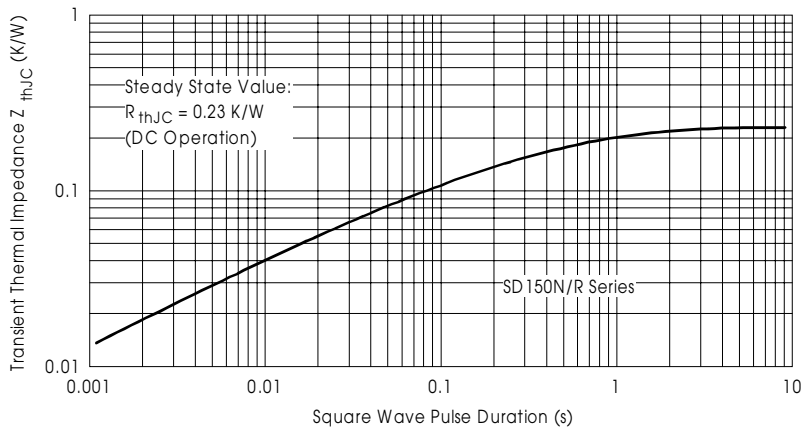


Fig. 8 - Thermal Impedance Z_{thJC} Characteristic

SD150N/R Series

Bulletin I2077 rev. B 11/01

International
IOR Rectifier

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.

International
IOR Rectifier

IR WORLD HEADQUARTERS 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7309
Visit us at www.irf.com for sales contact information. 11/01

单击下面可查看定价，库存，交付和生命周期等信息

[>>Vishay\(威世\)](#)