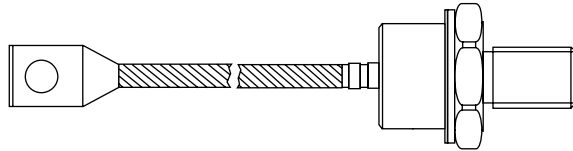


## Standard Recovery Diodes (Stud Version), 150 A



DO-205AA (DO-8)

### FEATURES

- Diffused diode
- High voltage ratings up to 1200 V
- High surge current capabilities
- Stud cathode and stud anode version
- Hermetic metal case
- RoHS compliant
- Designed and qualified for industrial level


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

- Welders
- Power supplies
- Machine tool controls
- High power drives
- Medium traction applications
- Battery charges
- Freewheeling diodes

### PRODUCT SUMMARY

$I_{F(AV)}$	150 A
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### MAJOR RATINGS AND CHARACTERISTICS

PARAMETER	TEST CONDITIONS	VALUES	UNITS
$I_{F(AV)}$		150	A
	$T_C$	125	°C
$I_{F(RMS)}$		235	A
$I_{FSM}$	50 Hz	3000	
	60 Hz	3140	
$I^2t$	50 Hz	45	kA <sup>2</sup> s
	60 Hz	41	
$V_{RRM}$	Range	600 to 1200	V
$T_J$		- 40 to 180	°C

### ELECTRICAL SPECIFICATIONS

#### VOLTAGE RATINGS

TYPE NUMBER	VOLTAGE CODE	$V_{RRM}$ , MAXIMUM REPETITIVE PEAK REVERSE VOLTAGE V	$V_{RSM}$ , MAXIMUM NON-REPETITIVE PEAK REVERSE VOLTAGE V	$I_{RRM}$ MAXIMUM AT $T_J = T_J$ MAXIMUM mA
150U(R)..	60	600	700	15
	80	800	900	
	100	1000	1100	
	120	1200	1300	

FORWARD CONDUCTION						
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS	
Maximum average forward current at case temperature	$I_{F(AV)}$	180° conduction, half sine wave		150	A	
				125	°C	
Maximum RMS forward current	$I_{F(RMS)}$	DC at 110 °C		235	A	
Maximum peak, one cycle forward, non-repetitive surge current	$I_{FSM}$	t = 10 ms	No voltage reapplied	Sinusoidal half wave, initial $T_J = T_J$ maximum		3000
		t = 8.3 ms				3140
Maximum $I^2t$ for fusing	$I^2t$	t = 10 ms				45
		t = 8.3 ms			41	
Slope resistance	$r_f$	$T_J = T_J$ maximum		0.97	mΩ	
Threshold voltage	$V_{F(T0)}$			0.80	V	
Maximum forward voltage drop	$V_{FM}$	$I_{pk} = 600$ A, $T_J = 25$ °C, $t_p = 10$ ms sinusoidal wave		1.47		

THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction operating and storage temperature range	$T_J, T_{Stg}$			- 40 to 180	°C
Maximum thermal resistance, junction to case	$R_{thJC}$	DC operation		0.3	K/W
Maximum thermal resistance, case to heatsink	$R_{thCS}$	Mounting surface, smooth, flat and greased		0.1	
Maximum allowed mounting torque + 0 - 20 %	minimum	Not lubricated threads		17	N · m
	maximum	Lubricated threads		14.5	
Approximate weight				130	g
Case style		See dimensions - link at the end of datasheet		DO-205AA (DO-8)	

$\Delta R_{thJC}$ CONDUCTION				
CONDUCTION ANGLE	SINUSOIDAL CONDUCTION	RECTANGULAR CONDUCTION	TEST CONDITIONS	UNITS
180°	0.031	0.023	$T_J = T_J$ maximum	K/W
120°	0.038	0.040		
90°	0.048	0.053		
60°	0.071	0.075		
30°	0.120	0.121		

**Note**

- The table above shows the increment of thermal resistance  $R_{thJC}$  when devices operate at different conduction angles than DC

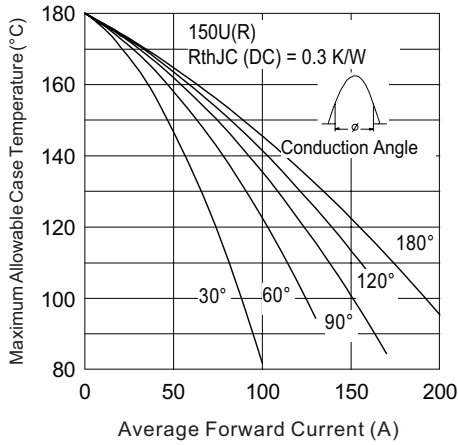


Fig. 1 - Current Ratings Characteristics

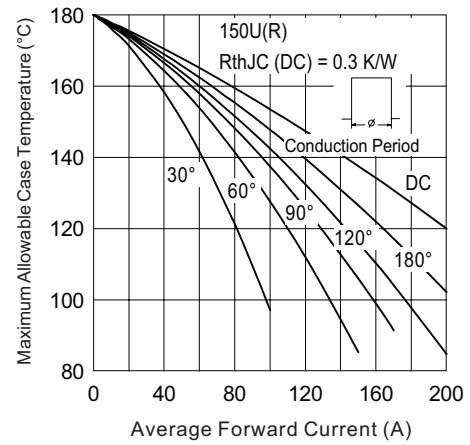


Fig. 2 - Current Ratings Characteristics

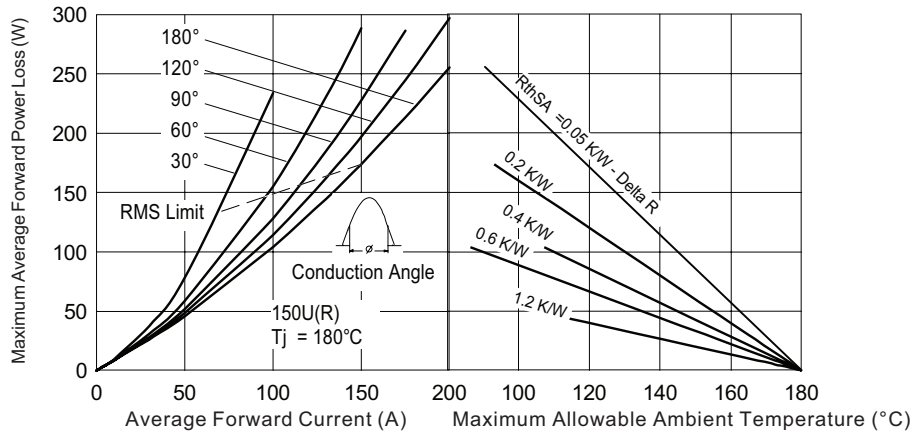


Fig. 3 - Forward Power Loss Characteristics

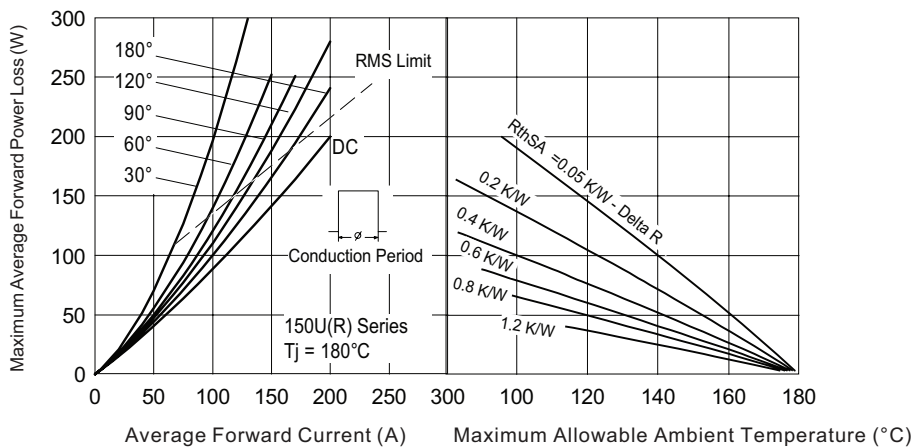


Fig. 4 - Forward Power Loss Characteristics

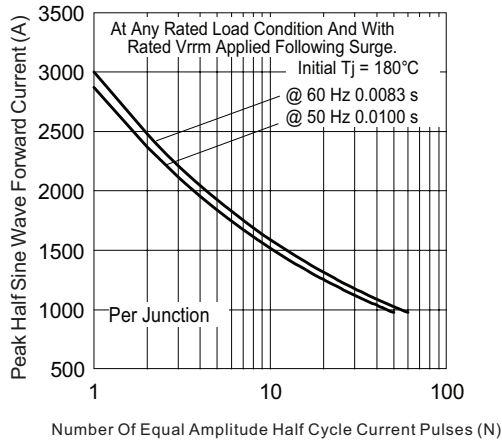


Fig. 5 - Maximum Non-Repetitive Surge Current

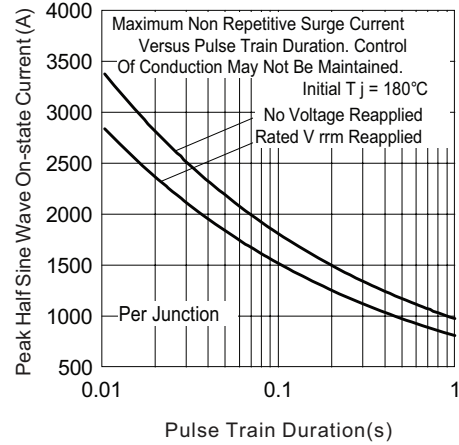


Fig. 6 - Maximum Non-Repetitive Surge Current

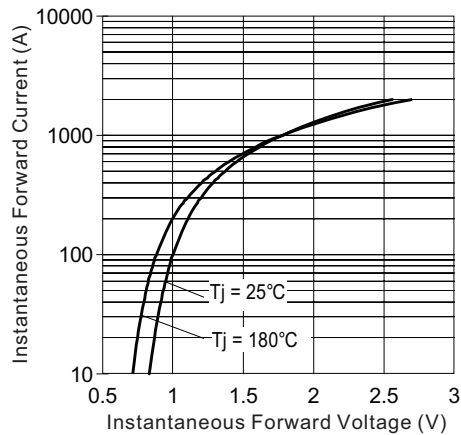


Fig. 7 - Forward Voltage Drop Characteristics

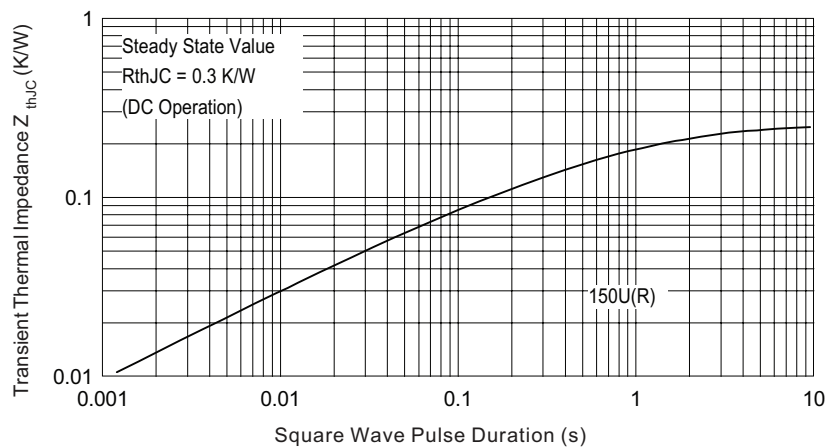
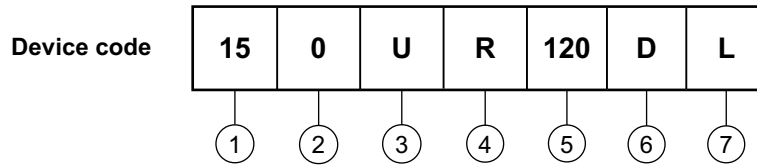


Fig. 8 - Thermal Impedance  $Z_{thJC}$  Characteristic



## ORDERING INFORMATION TABLE



- 1** - 15 = Essential part number
- 2** - 0 = Standard device
- 3** - U = Stud normal polarity (cathode to stud)
- 4** - None = Stud normal polarity (cathode to stud)  
R = Stud reverse polarity (anode to stud)
- 5** - Voltage code x 10 =  $V_{RRM}$  (see Voltage Ratings table)
- 6** - Diffused diode
- 7** - L = Stud base 1/2"-20UNF-2A threads  
None = Stud base 3/8"-24UNF-2A threads

Note: For metric device M12 x 1.75 contact factory

LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95315">http://www.vishay.com/doc?95315</a>



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