



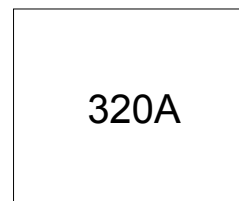
240U(R).. SERIES

STANDARD RECOVERY DIODES

Stud Version

Features

- Diffused diode
- Wide current range
- High voltage ratings up to 1200V
- High surge current capabilities
- Stud cathode and stud anode version
- Hermetic metal case

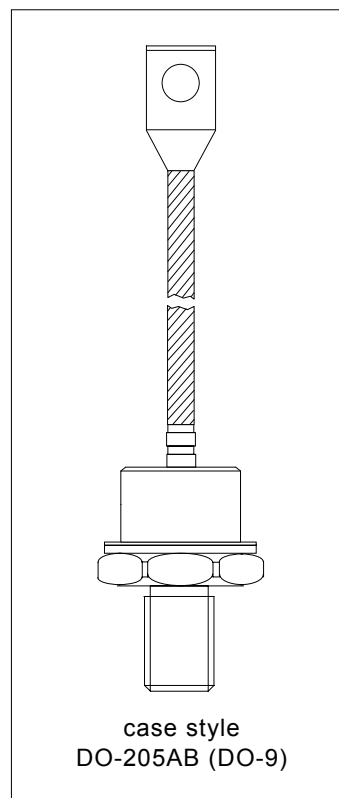


Typical Applications

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

Major Ratings and Characteristics

Parameters	240U(R)..	Units
$I_{F(AV)}$	320	A
@ T_C	100	°C
$I_{F(RMS)}$	500	A
I_{FSM} @ 50Hz	4500	A
@ 60Hz	4700	A
I^2t @ 50Hz	101	KA ² s
@ 60Hz	92	KA ² s
V_{RRM} range	600 to 1200	V
T_J	- 40 to 180	°C



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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
240U(R)..	60	600	700	15
	80	800	900	
	100	1000	1100	
	120	1200	1300	

Forward Conduction

Parameter	240U(R)..	Units	Conditions
I _{F(AV)} Max. average forward current @ Case temperature	320	A	180° conduction, half sine wave
	100	°C	
I _{F(RMS)} Max. RMS forward current	500	A	DC @ 80°C case temperature
I _{FSM} Max. peak, one-cycle forward, non-repetitive surge current	4500	A	t = 10ms No voltage
	4700		t = 8.3ms reappplied
	3800		t = 10ms 100% V _{RRM}
	4000		t = 8.3ms reappplied
I ² t Maximum I ² t for fusing	101	KA ² s	t = 10ms No voltage
	92		t = 8.3ms reappplied
	72		t = 10ms 100% V _{RRM}
	66		t = 8.3ms reappplied
I ² √t Maximum I ² √t for fusing	1010	KA ² √s	t = 0.1 to 10ms, no voltage reappplied
r _f Slope resistance	0.6	mΩ	@ T _J = T _J max.
V _{F(T0)} Threshold voltage	0.83	V	
V _{FM} Max. forward voltage drop	1.33	V	I _{pk} = 750A, T _J = 25°C, t _p = 10ms sinusoidal wave

Thermal and Mechanical Specifications

Parameter	240U(R)..	Units	Conditions
T _J Max. junction operating temperature range	-40 to 180	°C	
T _{stg} Max. storage temperature range	-40 to 180		
R _{thJC} Max. thermal resistance, junction to case	0.18	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 +0 -20%	37 (330)	Nm (lb.in)	Not lubricated threads
	28 (250)		Lubricated threads
wt Approximate weight	250	g	
Case style	DO-205AB (DO-9)		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)

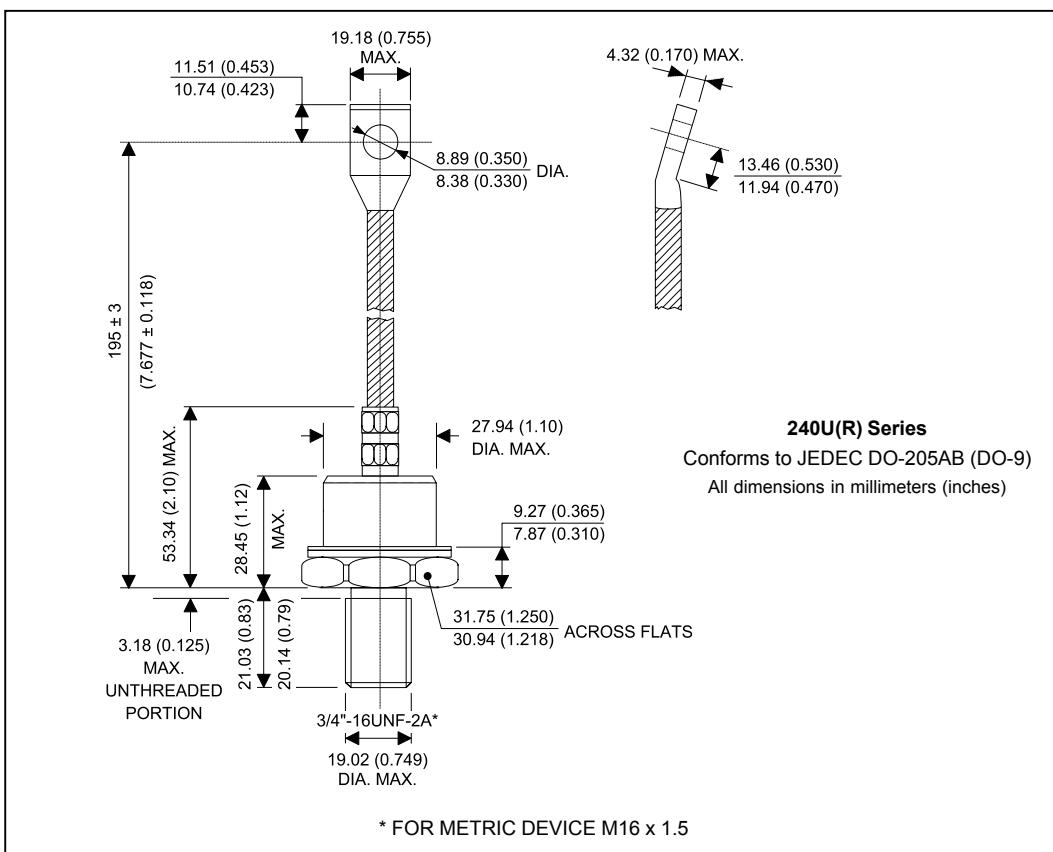
Conduction angle	Sinusoidal conduction	Rectangular conduction	Units	Conditions
180°	0.019	0.015	K/W	T _J = T _J max.
120°	0.023	0.025		
90°	0.030	0.034		
60°	0.045	0.047		
30°	0.076	0.076		

Ordering Information Table

Device Code					
240	U	R	120	D	M
1	2	3	4	5	6

1	-	240	= Standard xx0U device
2	-	U	= Essential Part Number
3	-	R	= Stud Reverse Polarity (Anode to Stud)
	-	None	= Stud Normal Polarity (Cathode to Stud)
4	-	Voltage code: Code x 10 = V_{RRM} (See Voltage Ratings table)	
5	-	D	= Diffused diode
6	-	M	= Metric base M16 x 1.5
	-	None	= Stud base 3/4" - 16UNF-2A threads

Outline Table



240U(R).. Series

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International
IR Rectifier

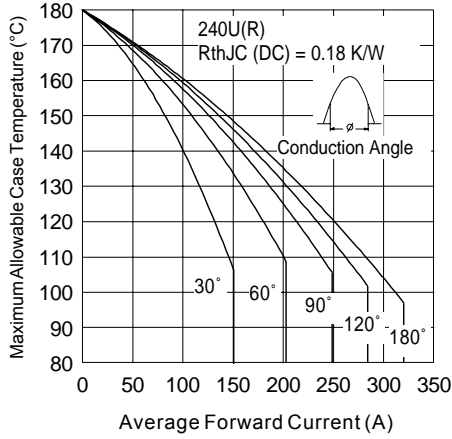


Fig. 1 - Current Ratings Characteristics

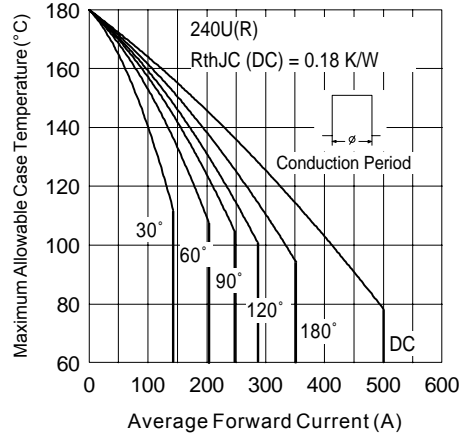


Fig. 2 - Current Ratings Characteristics

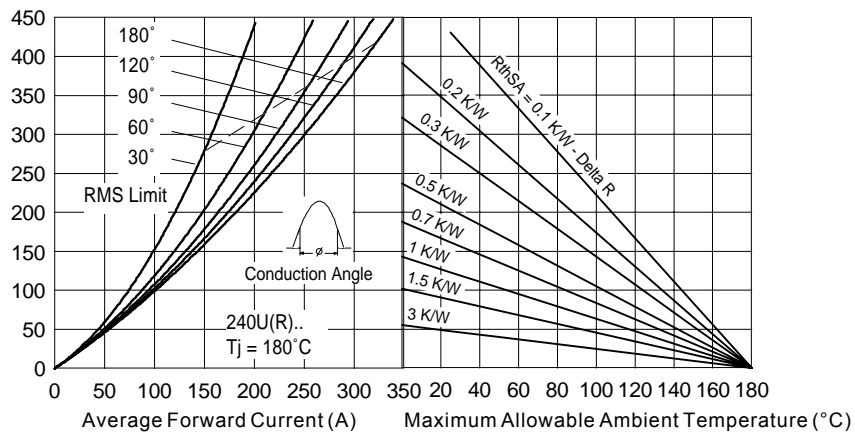


Fig. 3 - Forward Power Loss Characteristics

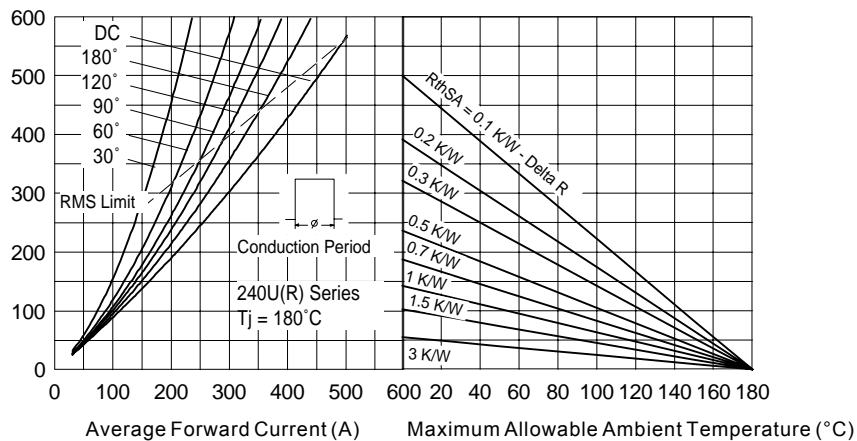


Fig. 4 - Forward Power Loss Characteristics

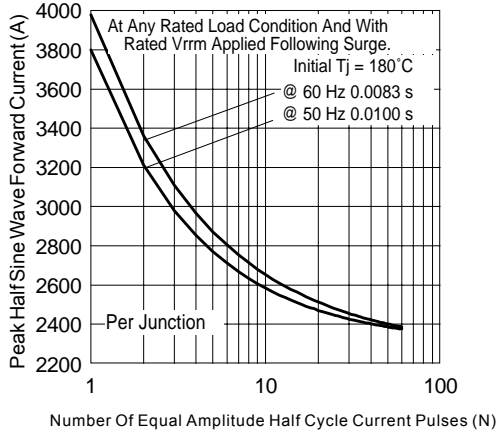


Fig. 5 - Maximum Non-Repetitive Surge Current

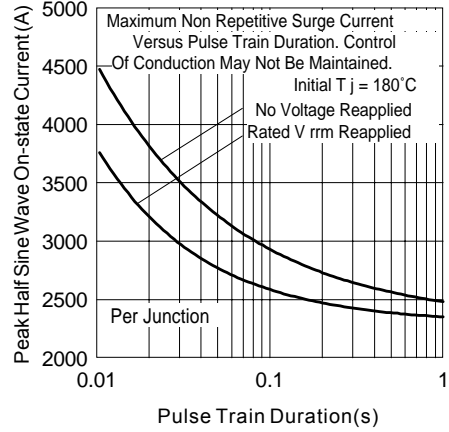


Fig. 6 - Maximum Non-Repetitive Surge Current

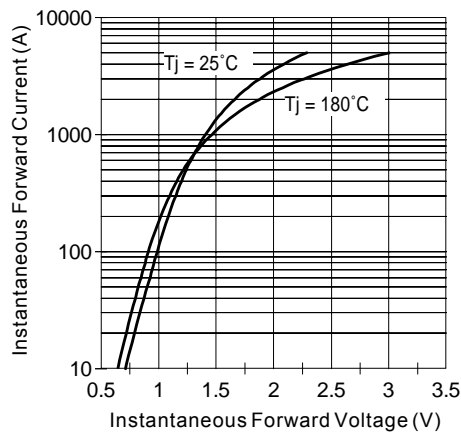


Fig. 7 - Forward Voltage Drop Characteristics

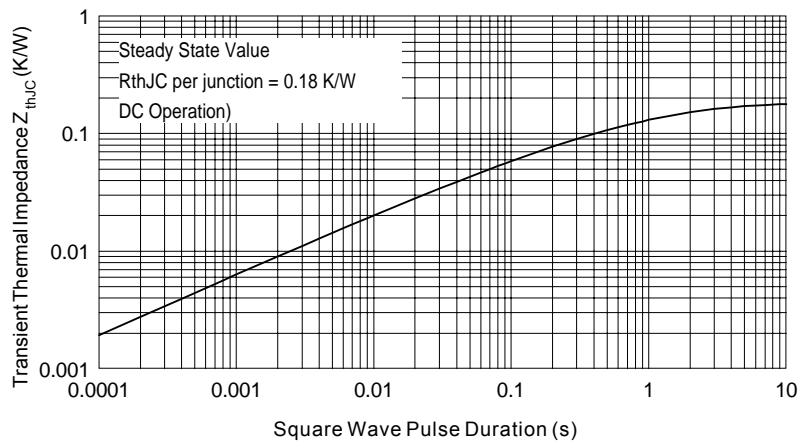


Fig. 8 - Thermal Impedance Z_{thJC} Characteristic

240U(R).. Series

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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

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