

STANDARD RECOVERY DIODES

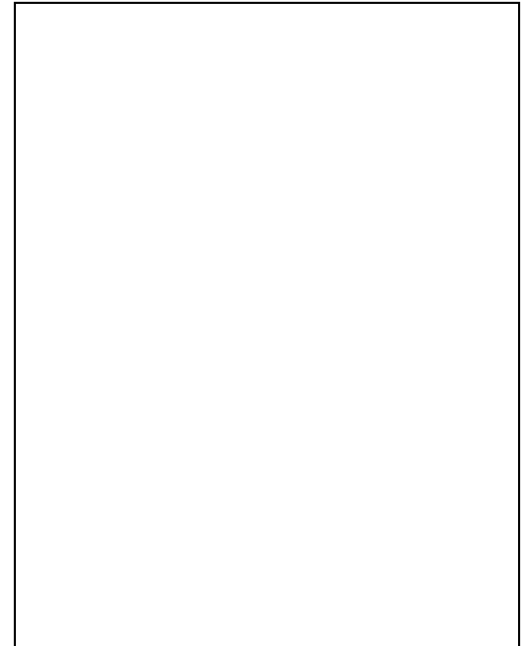
Stud Version

Features

- High surge current capability
- Designed for a wide range of applications
- Stud cathode and stud anode version
- Leaded version available
- Types up to 2000V V_{RRM}

Typical Applications

- Battery charges
- Converters
- Power supplies
- Machine tool controls
- Welding



Major Ratings and Characteristics

Parameters		INRA300(R)..	Units
$I_{F(AV)}$		300	A
	@ T_c	110	°C
$I_{F(RSM)}$		235	A
I_{FSM}	@ 50Hz	6550	A
	@ 60Hz	6850	A
$I^2 t$	@ 50Hz	214	KA ² s
	@ 60Hz	195	KA ² s
V_{RRM}	range	100 to 2000	V
T_J	range	- 40 to 150	°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} max. @ $T_J = T_J$ max. mA
INRA300(R)..	04	400	500	5.00
	08	800	900	
	12	1200	1300	
	14	1400	1500	
	16	1600	1700	
	18	1800	1900	
	20	2000	2100	

Forward Conduction

Parameter	INRA300(R)..	Units	Conditions		
$I_{F(AV)}$ Max. average forward current @ Case temperature	300	A	180° conduction, half sine wave		
	100	°C			
$I_{F(RMS)}$ Max. RMS forward current	470	A			
I_{FSM} , Maximum peak, one-cycle forward, non-repetitive surge current	6550	A	t = 10ms	No voltage reappplied	Sinusoidal half wave, Initial $T_J = T_J$ max.
	6850		t = 8.3ms		
	5500		t = 10ms	100% V_{RRM} reappplied	
	5750		t = 8.3ms		
$I^2 t$ Maximum $I^2 t$ for fusing	214	KA ² s	t = 10ms	No voltage reappplied	
	195		t = 8.3ms		
	151		t = 10ms	100% V_{RRM} reappplied	
	138		t = 8.3ms		
$I^2 \sqrt{t}$ Maximum $I^2 \sqrt{t}$ for fusing	2140	KA ² √s	t = 0.1 to 10ms, no voltage reappplied		
$V_{F(TO)1}$ Low level value of threshold voltage	0.61	V	$T_J = T_J$ max.		
$V_{F(TO)2}$ High level value of threshold voltage	0.75		$T_J = T_J$ max.		
r_{f1} Low level value of forward slope resistance	0.75	m	$T_J = T_J$ max.		
r_{f2} High level value of forward slope resistance	0.62		$T_J = T_J$ max.		
V_{FM} Maximum on-state or forward	1.30	V	I _{pk} = 1000A, $T_J = 25^\circ\text{C}$, $t_p = 10\text{ms}$ sinusoidal wave		

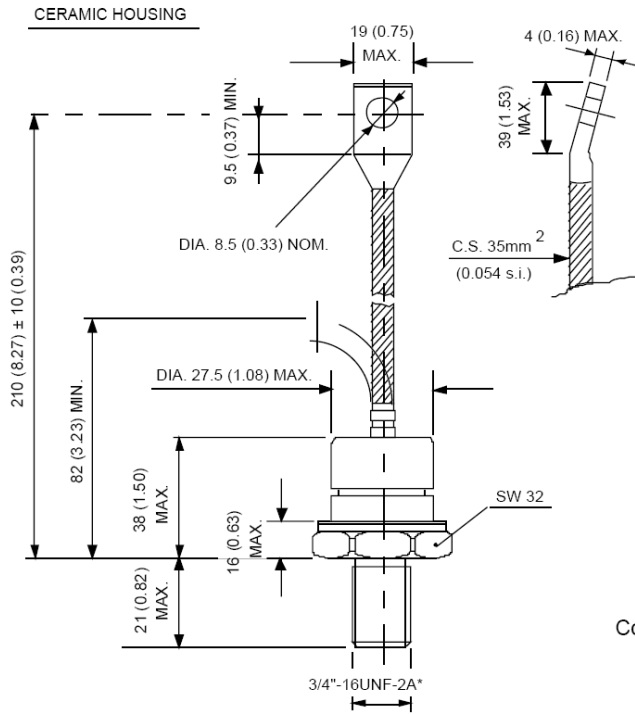
Thermal and Mechanical Specifications

Parameter	INRA300(R)..	Units	Conditions
T _J Max. junction operating temperature range	-40 to 150	°C	Junction to case
T _{stg} Max. storage temperature range	-40 to 170	°C	
R _{thJC} Max. thermal resistance, junction to case	0.19	K/W	DC operation
R _{thSC} Max. thermal resistance, case to heatsink	0.08		Mounting surface, smooth, flat and greased
T Max. allowed mounting torque +0 -20%	28	Nm	Not lubricated threads
	248	lbf.in	
	37	Nm	Lubricated threads
	328	lbf.in	
wt Approximate weight	250(2212)	g (oz)	
Case style	DO-205AB (DO-9)		See Outline Table

Ordering Information Table

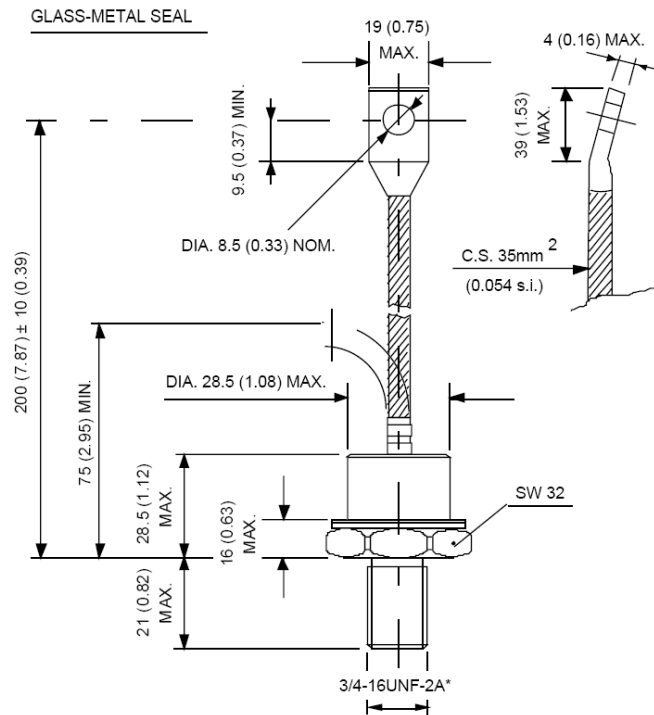
Device Code						
1	INR	A	300	R	120	M
1	2	3	4	5	6	
1	INR = Company					
2	A = Standard device					
3	Current rating: Code = IF(AV)					
4	None = Stud Normal Polarity (Cathode to Stud)					
	R = Stud Reverse Polarity (Anode to Stud)					
5	Voltage code: Code x 10 = VRRM (See Voltage Ratings table)					
6	None = Stud base DO-205AB (DO-9) 3/4-16UNF-2A					
	M = Stud base DO-205AC (DO-30) M16 X 1.5					

Outline



Conform to JEDEC DO-205AB (DO-9)
All dimensions in millimeters (inches)

* FOR METRIC DEVICE: M16 X 1.5



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