

STANDARD RECOVERY DIODES

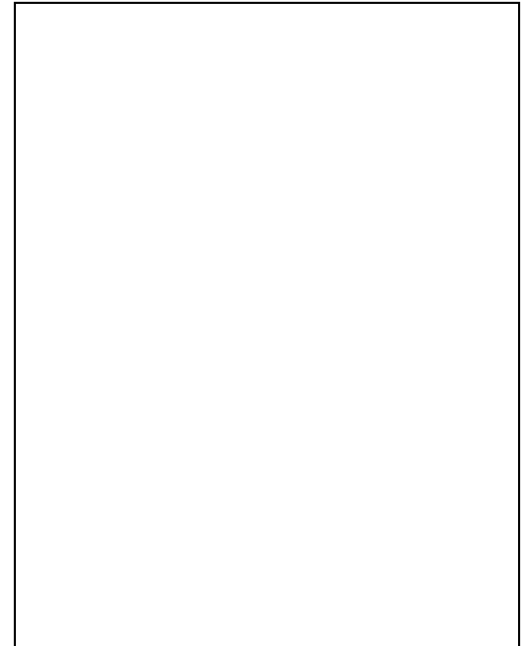
Stud Version

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		INRA40(R)..	Units
$I_{F(AV)}$		40	A
	@ T_c	110	°C
$I_{F(RSM)}$		62	A
I_{FSM}	@ 50Hz	560	A
	@ 60Hz	590	A
$I^2 t$	@ 50Hz	1600	A ² s
	@ 60Hz	1450	A ² s
V_{RRM}	range	400 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
INRA40(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	INRA40(R)..	Units	Conditions		
I _{F(AV)} Max. average forward current @ Case temperature	40	A	180° conduction, half sine wave		
	110	°C			
I _{F(RMS)} Max. RMS forward current	62	A			
I _{FSM} , Maximum peak, one-cycle forward, non-repetitive surge current	560	A	t = 10ms	No voltage reappplied	Sinusoidal half wave, Initial T _J = T _J max.
	590		t = 8.3ms		
	480		t = 10ms	100% V _{RRM} reappplied	
	500		t = 8.3ms		
I ² t Maximum I ² t for fusing	1600	A ² s	t = 10ms	No voltage reappplied	
	1450		t = 8.3ms		
	1150		t = 10ms	100% V _{RRM} reappplied	
	1050		t = 8.3ms		
I ² √t Maximum I ² √t for fusing	16000	A ² √s	t = 0.1 to 10ms, no voltage reappplied		
V _{F(TO)1} Low level value of threshold voltage	0.65	V	T _J = T _J max.		
V _{F(TO)2} High level value of threshold voltage	0.76		T _J = T _J max.		
r _{f1} Low level value of forward slope resistance	4.29	m	T _J = T _J max.		
r _{f2} High level value of forward slope resistance	3.8		T _J = T _J max.		
V _{FM} Maximum on-state or forward	1.30	V	I _{pk} = 125A, T _J = 25°C, t _p = 400μs rectangular wave		

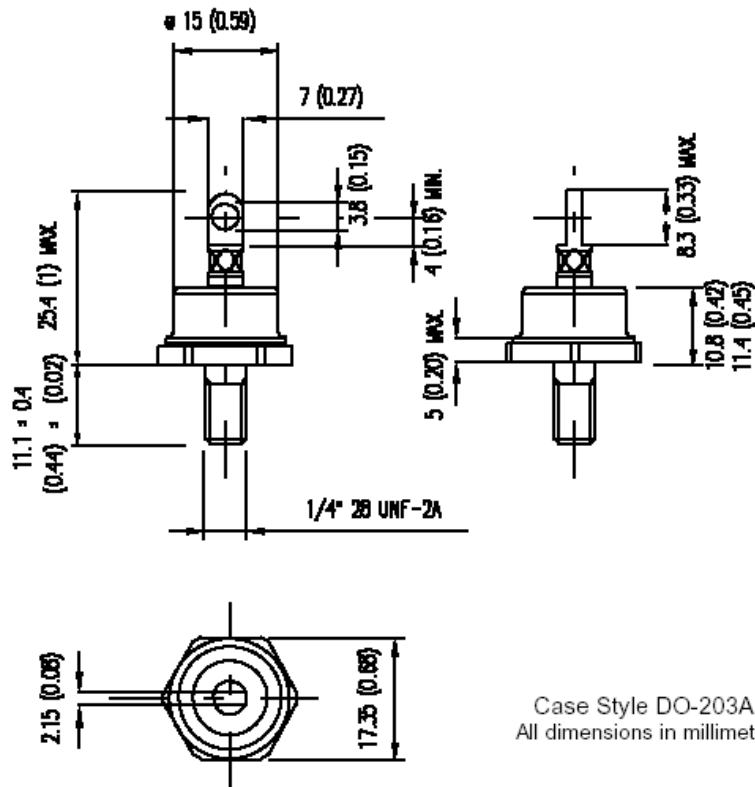
Thermal and Mechanical Specifications

Parameter	INRA40(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	1.00	K/W	DC operation
R thSC Max. thermal resistance, case to heatsink	0.30		Mounting surface, smooth, flat and greased
T Max. allowed mounting torque +0 -20%	3.4 +0-10%	Nm	Not lubricated threads
	30	lbf.in	
	2.3 +0-10%	Nm	Lubricated threads
	20	lbf.in	
wt Approximate weight	17 (0.6)	g (oz)	
Case style	DO-5		See Outline Table

Ordering Information Table

Device Code						
1	INR	A	40	R	140	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-203AB (DO-5) 1/4" 28UNF-2A					
	M = Stud base DO-203AB (DO-5) M6X1					

Outline



Case Style DO-203AB (DO-5)
All dimensions in millimeters (inches)