

### Features

- Reduced RFI and EMI
- Reduced Snubbing
- Extensive Characterization of Recovery Parameters
- Hermetic
- Electrically Isolated
- Ceramic Eyelets

$$V_R = 600V$$

$$V_F = 1.7V$$

$$Q_{rr} = 375nC$$

### Description

These Ultrafast, soft recovery diodes are optimized to reduce losses and EMI/RFI in high frequency power conditioning systems. An extensive characterization of the recovery behavior for different values of current, temperature and di/dt simplifies the calculations of losses in the operating conditions. The softness of the recovery eliminates the need for a snubber in most applications. These devices are ideally suited for power converters, motors drives and other applications where switching losses are significant portion of the total losses.

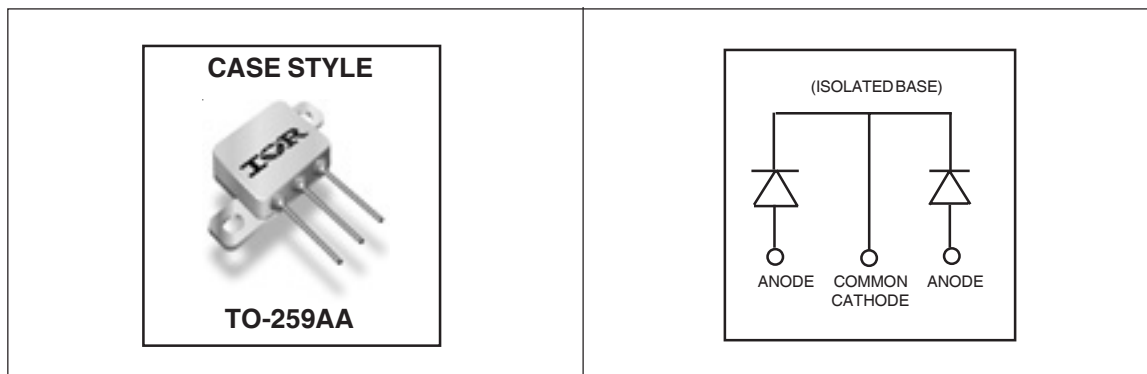
### Absolute Maximum Ratings

	Parameter	Max.	Units
$V_R$	Cathode to Anode Voltage (Per Leg)	600	V
$I_{F(AV)}$	Continuous Forward Current, ① $T_C = 100^\circ C$	45*	A
$I_{FSM}$	Single Pulse Forward Current, ② $T_C = 25^\circ C$ (Per Leg)	225	
$P_D @ T_C = 25^\circ C$	Maximum Power Dissipation	104	W
$T_J, T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ C$

**Note:** ① D.C. = 50% rect. wave

② 1/2 sine wave, 60 Hz, P.W. = 8.33 ms

\* Current is limited by package



**Electrical Characteristics (Per Leg) @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)**

	Parameter	Min.	Typ.	Max.	Units	Test Conditions
$V_{BR}$	Cathode Anode Breakdown Voltage	600	—	—	V	$I_R = 100\mu\text{A}$
$V_F$	Forward Voltage	—	—	1.7	V	$I_F = 22\text{A}$
		—	—	2.0		$I_F = 45\text{A}$
		—	—	1.5		$I_F = 22\text{A}, T_J = 125^\circ\text{C}$
$I_R$	Reverse Leakage Current	—	—	10	$\mu\text{A}$	$V_R = V_R \text{ Rated}$
		—	—	1.0	$\text{mA}$	$V_R = 480\text{V}, T_J = 125^\circ\text{C}$
$C_T$	Junction Capacitance	—	—	100	$\text{pF}$	$V_R = 200\text{V}$
$L_S$	Series Inductance	—	13	—	$\text{nH}$	Measured from anode lead to cathode lead, 6mm (0.025 in) from package

**Dynamic Recovery Characteristics (Per Leg) @  $T_J = 25^\circ\text{C}$  (unless otherwise specified)**

	Parameter	Min.	Typ.	Max.	Units	Test Conditions
$t_{rr}$	Reverse Recovery Time	—	—	97	ns	$I_F = 22\text{A}, di/dt \leq 200\text{A}/\mu\text{s}, V_R = 200\text{V}$
$I_{RRM}$	Max Reverse Recovery Current	—	—	10	A	$I_F = 22\text{A}, di/dt \leq 200\text{A}/\mu\text{s}, V_R = 200\text{V}$
$Q_{RR}$	Reverse Recovered Charge	—	—	375	nC	$I_F = 22\text{A}, di/dt \leq 200\text{A}/\mu\text{s}, V_R = 200\text{V}$

**Thermal - Mechanical Characteristics**

	Parameter	Typ.	Max.	Units
$R_{thJC}$	Junction-to-Case, Single Leg Conducting	—	1.2	$^\circ\text{C}/\text{W}$
Wt	Weight	10.9	—	g

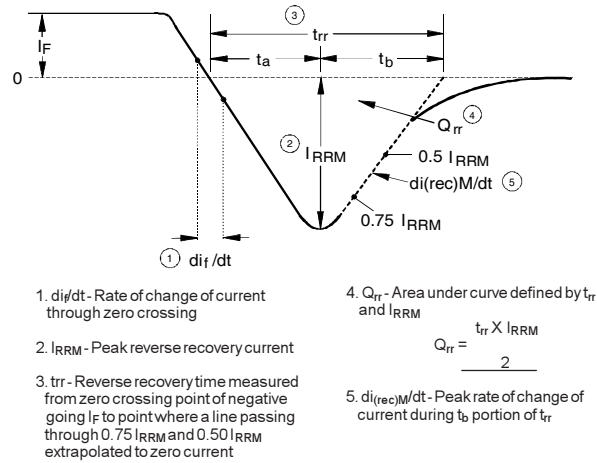
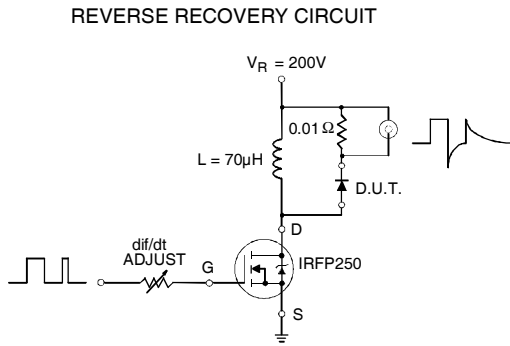
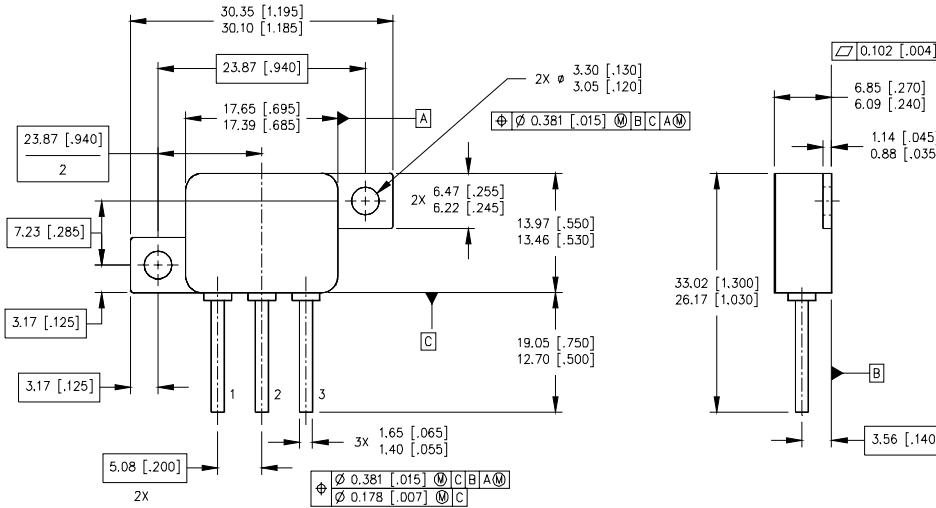


Fig. 9 - Reverse Recovery Parameter Test Circuit

Fig. 10 - Reverse Recovery Waveform and Definitions

Case Outline and Dimensions — TO-259AA



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME 14.5M-1994.
2. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
3. CONTROLLING DIMENSION: INCH
4. CONFORMS TO JEDEC OUTLINE TO-259AA.

PIN ASSIGNMENTS

- 1 = ANODE 1
- 2 = COMMON CATHODE
- 3 = ANODE 2