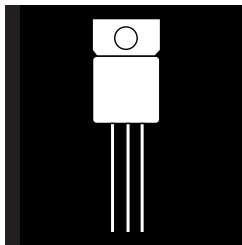


HERMETIC JEDEC TO-257AA HIGH EFFICIENCY, CENTER-TAP HIGH VOLTAGE RECTIFIER



16 Amp, 1000 Volt, 65 ns trr Soft Recovery

FEATURES

- Soft Recovery Characteristics
- Hermetic Metal Package, JEDEC TO-257AA
- Very Low Forward Voltage
- Very High Reverse Voltage Capability
- Very Low Reverse Recovery Time
- Very Low Switching Losses
- Isolated Package
- Low Thermal Resistance
- Available Screened To MIL-S-19500, TX, TXV And S Levels

DESCRIPTION

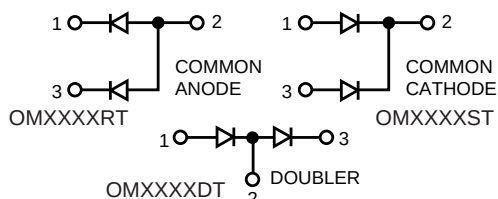
This soft recovery rectifier is ideally suited as a free wheeling diode in converters and motor control circuits, as well as a rectifier in SMPS. The package is designed for those applications where a small size and a hermetically sealed package is desirable. Center-Tap configuration.

ABSOLUTE MAXIMUM RATINGS (Per Diode) $T_J = 25^\circ\text{C}$

Repetitive Peak Reverse Voltage, V_{RRM}	1000V
Non-Repetitive Peak Reverse Voltage, V_{RSM}	1000V
Repetitive Peak Forward Current, I_{FRM}	100A
RMS Forward Current, $I_{(RMS)}$	16A
Average Forward Current, $T_C = 100^\circ\text{C}$, Duty Cycle = 50%, $I_{F(AV)}$	8A
Surge Non-Repetitive Forward Current, 8.3ms, I_{FSM}	50A
Power Dissipation, $T_C = 100^\circ\text{C}$, P	17W
Storage and Junction Range, T_{stg}	-55°C to 150°C
Thermal Resistance, Junction-To-Case, $R_{th(JC)}$	2.4°C/W

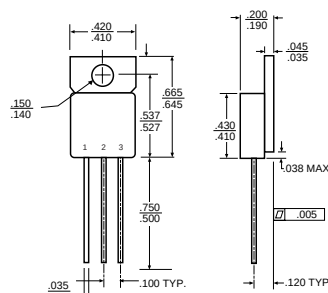
3.2

SCHEMATIC



Common cathode is standard. Contact the factory for performance characteristics for common anode and doubler.

PIN CONNECTION



Z-Tab package also available.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_J = 25^{\circ}\text{C}$	$V_R = V_{RRM}$			35	μA
	$T_J = 100^{\circ}\text{C}$				2	mA
V_F	$T_J = 25^{\circ}\text{C}$	$I_F = 8\text{A}$			1.9	V
	$T_J = 100^{\circ}\text{C}$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_J = 25^{\circ}\text{C}$	$I_F = 1\text{A}, di_F/dt = -15\text{A}/\mu\text{s}, V_R = 30\text{V}$			155	nS
		$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{rr} = 0.25\text{A}$			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -32\text{A}/\mu\text{s}$	$V_{CC} = 200\text{V}, I_F = 8\text{A}$ $L_P = 0.05\mu\text{H}, T_J = 100^{\circ}\text{C}$ See Figure 1			200	nS
	$di_F/dt = -64\text{A}/\mu\text{s}$			120		
I_{RM}	$di_F/dt = -32\text{A}/\mu\text{s}$				5.5	A
	$di_F/dt = -64\text{A}/\mu\text{s}$			6		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_J = 100^{\circ}\text{C}$ $di_F/dt = -8\text{A}/\mu\text{s}$	$V_{CC} = 200\text{V}, I_F = I_{F(AV)}$ $L_P = 12\mu\text{H}$, See Figure 2			4.5	

To evaluate the conduction losses use the following equations:

$V_F = 1.47 + 0.04 I_F$ $P = 1.47 \times I_{F(AV)} + 0.04 I_F^2(RMS)$

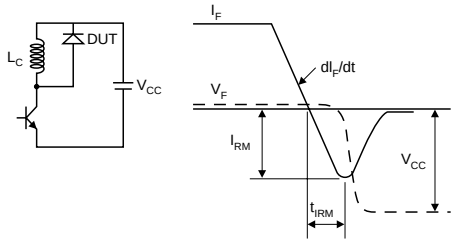


Figure 1: Turn-off switching characteristics (without series inductance).

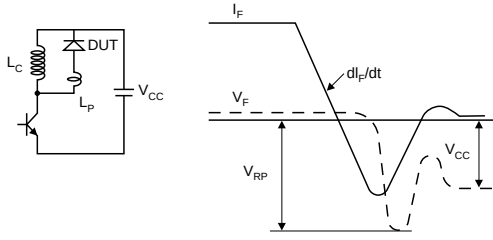


Figure 2: Turn-off switching characteristics (with series inductance).

3.2

