



American Microsemiconductor, Inc.

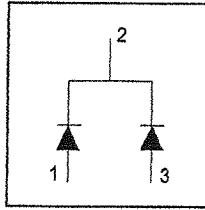
133 Kings Road P.O. Box 104
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 Tel: (973) 377-9566 Fax: (973) 377-3078

Features

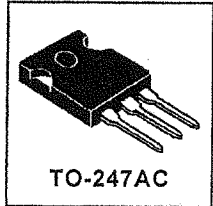
- Ultrafast Recovery
- Ultrasoft Recovery
- Very Low I_{RRM}
- Very Low Q_{rr}
- Specified at Operating Conditions

Benefits

- Reduced RFI and EMI
- Reduced Power Loss in Diode and Switching Transistor
- Higher Frequency Operation
- Reduced Snubbing
- Reduced Parts Count



$V_R = 600V$
$V_F = 1.7V$
$Q_{rr}^* = 65nC$
$di_{(rec)}/dt^* = 240A/\mu s$ * 125°C



Absolute Maximum Ratings (per Leg)

Parameter	Parameter	Max	Units
V_R	Cathode-to-Anode Voltage	600	V
$I_F @ T_C = 100^\circ C$	Continuous Forward Current (per Leg)	8	A
I_{FSM}	Single Pulse Forward Current	60	A
I_{FRM}	Maximum Repetitive Forward Current	24	A
$P_D @ T_C = 25^\circ C$	Maximum Power Dissipation	36	W
$P_D @ T_C = 100^\circ C$	Maximum Power Dissipation	14	W
T_J	Operating Junction and	-55 to +150	°C
T_{STG}	Storage Temperature Range		

Electrical Characteristics (per Leg) @ $T_J = 25^\circ C$ (unless otherwise specified)

Parameter	Parameter	Min.	Typ.	Max.	Units	Test Conditions
V_{BR}	Cathode Anode Breakdown Voltage	600			V	$I_R = 100\mu A$
V_{FM}	Max Forward Voltage		1.4	1.7	V	$I_F = 8A$
			1.7	2.1		$I_F = 18A$
			1.4	1.7		$I_F = 8A, T_J = 125^\circ C$
I_{RM}	Max Reverse Leakage Current		0.3	5	μA	$V_R = V_R$ Rated
			100	500		$T_J = 125^\circ C, V_R = 0.8 \times V_R$ Rated
C_T	Junction Capacitance		10	25	pF	$V_R = 200V$
L_S	Series Inductance		8.0		nH	Measured lead to lead 5mm from package body

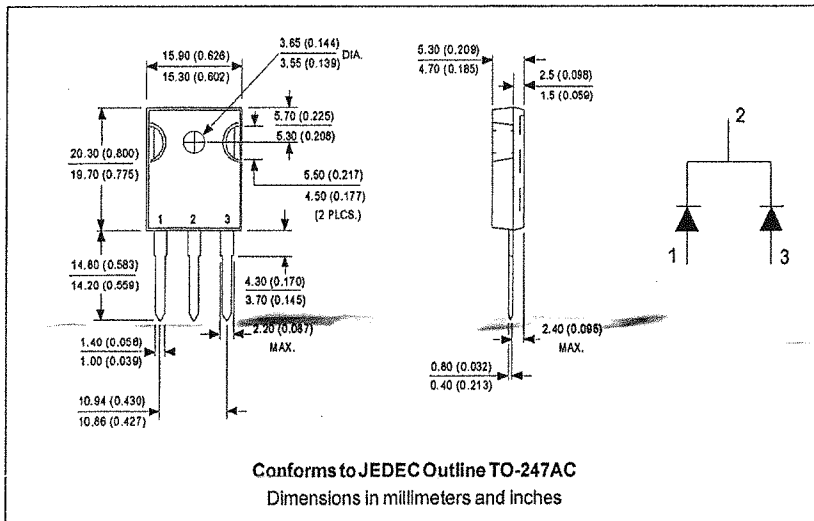
Parameter	Parameter	Min	Typ	Max	Units
T_{lead}°	Lead Temperature			300	°C
R_{thJC}	Junction-to-Case, Single Leg Conducting			3.5	K/W
	Junction-to-Case, Both Legs Conducting			1.75	
R_{thJA}°	Thermal Resistance, Junction to Ambient			40	
R_{thCS}°	Thermal Resistance, Case to Heat Sink		0.25		
Wt	Weight		6		g
			0.21		(oz)
	Mounting Torque	6		12	Kg-cm
		5		10	lb-in

HFA 16PA60C



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Outline Table



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

Parameter	Min	Typ	Max	Units	Test Conditions	
					$I_F = 1.0\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$, $V_R = 30\text{V}$	
t_{rr}	Reverse Recovery Time					$T_J = 25^\circ\text{C}$
t_{rr1}	See Fig. 5, 6 & 16				ns	
t_{rr2}						$T_J = 125^\circ\text{C}$
I_{RRM1}	Peak Recovery Current					$I_F = 8\text{A}$
I_{RRM2}	See Fig. 7 & 8				A	
Q_{rr1}	Reverse Recovery Charge					$V_R = 200\text{V}$
Q_{rr2}	See Fig. 9 & 10				nC	
$di_{(rec)}/dt1$	Peak Rate of Fall of Recovery Current					$di/dt = 200\text{A}/\mu\text{s}$
$di_{(rec)}/dt2$	During t_b See Fig. 11 & 12				A/ μs	

