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NTE6234 High Power Diode Module

Features:

- International Standard Package
- Direct Copper Bonded Al₂O₃ Ceramic Base Plate
- Planer Passivated Chips
- Isolation Voltage: 3600V~

Applications:

- Supplies for DC Power Equipment
- DC Supply for PWM Inverter
- Field Supply for DC Motors
- Battery DC Power Supplies

Advantages:

- Space and Weight savings
- Simple Mounting
- Improved Temperature and Power Cycling
- Reduced Protection Circuits

Maximum Ratings:

Repetitive Reverse Blocking Voltage, V_{RRM}	1600V
Non-Repitive Reverse Blocking Voltage, V_{RSM}	1700V
RMS Forward Current (Per Diode, $T_{VJ} = +150^{\circ}C$), $I_{F(RMS)}$	300A
Average Forward Current (Per Diode, $T_C = +100^{\circ}C$, 180° Sine), $I_{F(AV)}$	190A
Surge Forward Current ($V_R = 0$), I_{FSM}	
$T_{VJ} = +45^{\circ}C$	
t = 10ms (50Hz), Sine	6600A
t = 8.3ms (60Hz), Sine	7290A
$T_{VJ} = +150^{\circ}C$	
t = 10ms (50Hz), Sine	5600A
t = 8.3ms (60Hz), Sine	6200A
I^2t for Fusing Coordination ($V_R = 0$), I^2dt	
$T_{VJ} = +45^{\circ}C$	
t = 10ms (50Hz), Sine	218000A ² s
t = 8.3ms (60Hz), Sine	221000A ² s
$T_{VJ} = +150^{\circ}C$	
t = 10ms (50Hz), Sine	157000A ² s
t = 8.3ms (60Hz), Sine	160000A ² s

Maximum Ratings (Cont'd):

RMS Isolation Voltage (50/60Hz, RMS, $I_{ISOL} \leq 1\text{mA}$), V_{ISOL}	
t = 1 Min	3000V
t = 1s	3600V
Virtual Junction Temperature Range, T_{VJ}	-40° to +150°C
Peak Virtual Junction Temperature, T_{VJM}	+150°C
Storage Temperature Range, T_{stg}	-40° to +125°C
Thermal Resistance, Junction-to-Case, R_{thJC}	
Per Diode, DC Current	0.21K/W
Per Module	0.105K/W
Thermal Resistance, Junction-to-Heat Sink, R_{thJK}	
Per Diode, DC Current	0.31K/W
Per Module	0.155K/W
Mounting Torque (M6), M_d	2.25 to 2.75Nm
Terminal Connection Torque (M6), M_d	4.5 to 5.5Nm
Creepage Distance on Surface, d_S	12.7mm
Striking Distance Through Air, d_A	9.8mm
Maximum Allowable Acceleration, a	50m/s ²

Electrical Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Current	I_R	$V_R = 1600\text{V}$, $T_{VJ} = +150^\circ\text{C}$	-	-	20	mA
Forward Voltage Drop	V_F	$I_F = 300\text{A}$, $T_{VJ} = +25^\circ\text{C}$	-	-	1.15	V
Threshold Voltage	V_{TO}	$I_F = 300\text{A}$, $T_{VJ} = +25^\circ\text{C}$, For Power-Loss Calculations Only	-	-	0.8V	V
Forward Slope Resistance	r_T		-	-	0.8	mΩ
	Q_s	$I_F = 300\text{A}$ -di/dt = 50A/μs, $T_{VJ} = +125^\circ\text{C}$	-	-	550	μC
RMS Current	I_{RM}		-	-	235	A

Circuit Diagram



