



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE6129 Silicon Power Rectifier Diode, 700 Amp

Features:

- High Power, Fast Recovery Time
- High Current Capability
- Low Forward Recovery

Applications:

- Snubber Diode for GTO
- High Voltage Free-Wheeling Diode
- Fast Recovery Rectifier Applications

Ratings and Characteristics:

Average Forward Current ($T_C = +55^\circ\text{C Max}$), $I_{F(AV)}$ 700A
 Maximum Repetitive Peak Reverse Voltage, V_{RRM} 1600V
 Maximum Non-Repetitive Peak Reverse Voltage, V_{RSM} 1700V
 Maximum Reverse Current ($T_J = +150^\circ\text{C}$), I_{RRM} 50mA
 Maximum Forward Surge Current, I_{FSM}
 50Hz 9300A
 60Hz 9730A
 Operating Junction Temperature Range, T_J -40° to $+150^\circ\text{C}$
 Storage Temperature Range, T_{stg} -40° to $+150^\circ\text{C}$
 Thermal Resistance, Junction-to-Case (DC Operation, single side cooled), R_{thJC} 0.092°C/W
 Thermal Resistance, Case-to-Sink (DC Operation, double side cooled), R_{thCS} 0.46°C/W
 Maximum Mounting Force ($\pm 10\%$), F 9800 (1000) N (Kg)

Electrical Specifications:

Parameter	Symbol	Test Conditions		Rating	Unit
Maximum Average Forward Current	$I_{F(AV)}$	180° condition, Half sine wave	Double side cooled, $T_C = +55^\circ\text{C}$	700	A
			Single side cooled, $T_C = +85^\circ\text{C}$	365	A
Maximum RMS Forward Current	$I_{F(RMS)}$	@ $+25^\circ\text{C}$ heatsink temperature double side cooled		1320	A
Maximum Peak One-Cycle Non-Repetitive Surge Current	I_{FSM}	t = 10ms	Half sinewave current, rated V_{RRM} reapplied, initial $T_J = +150^\circ\text{C}$	7820	A
		t = 8.3ms		8190	A
		t = 10ms	Half sinewave current, no voltage reapplied, initial $T_J = +150^\circ\text{C}$	9300	A
		t = 8.3ms		7820	A

Electrical Specifications (Cont'd):

Parameter	Symbol	Test Conditions		Rating	Unit
Maximum I^2t for Fusing	I^2t	t = 10ms	Rated V_{RRM} reapplied, initial $T_J = +150^\circ\text{C}$	306	A^2s
		t = 8.3ms		279	A^2s
		t = 10ms	No voltage reapplied, initial $T_J = +150^\circ\text{C}$	432	A^2s
		t = 8.3ms		395	A^2s
Maximum $I^2\sqrt{t}$	$I^2\sqrt{t}$	t = 0.1 to 10ms, no voltage reapplied		4320	$\text{A}^2\sqrt{t}$
Maximum Peak Forward Voltage	V_{FM}	$T_J = +150^\circ\text{C}$, $I_{pk} = 1500\text{A}$, $t_p = 10\text{ms}$		2.2	V

Recovery Characteristics:

$T_J = +25^\circ\text{C}$ typical t_{rr} @ 25% I_{RRM}	Test Conditions			Max Values @ $T_J = +150^\circ\text{C}$		
	I_{pk} Square Pulse	di/dt	V_r	t_{rr} @ 25% I_{RRM}	Q_{rr}	T_{rr}
2.0 μs	1000A	50A/ μa	-50V	3.5 μs	240 μC	110A

