



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE6129 Silicon Power Rectifier Diode 700 Amp, DO200AB

**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,  $T_J$  .....  $-40^\circ$  to  $+150^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+150^\circ\text{C}$   
 Thermal Resistance, Junction-to-Case (DC Operation, single side cooled),  $R_{thJC}$  .....  $0.092^\circ\text{C/W}$   
 Thermal Resistance, Case-to-Sink (DC Operation, double side cooled),  $R_{thCS}$  .....  $0.46^\circ\text{C/W}$   
 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

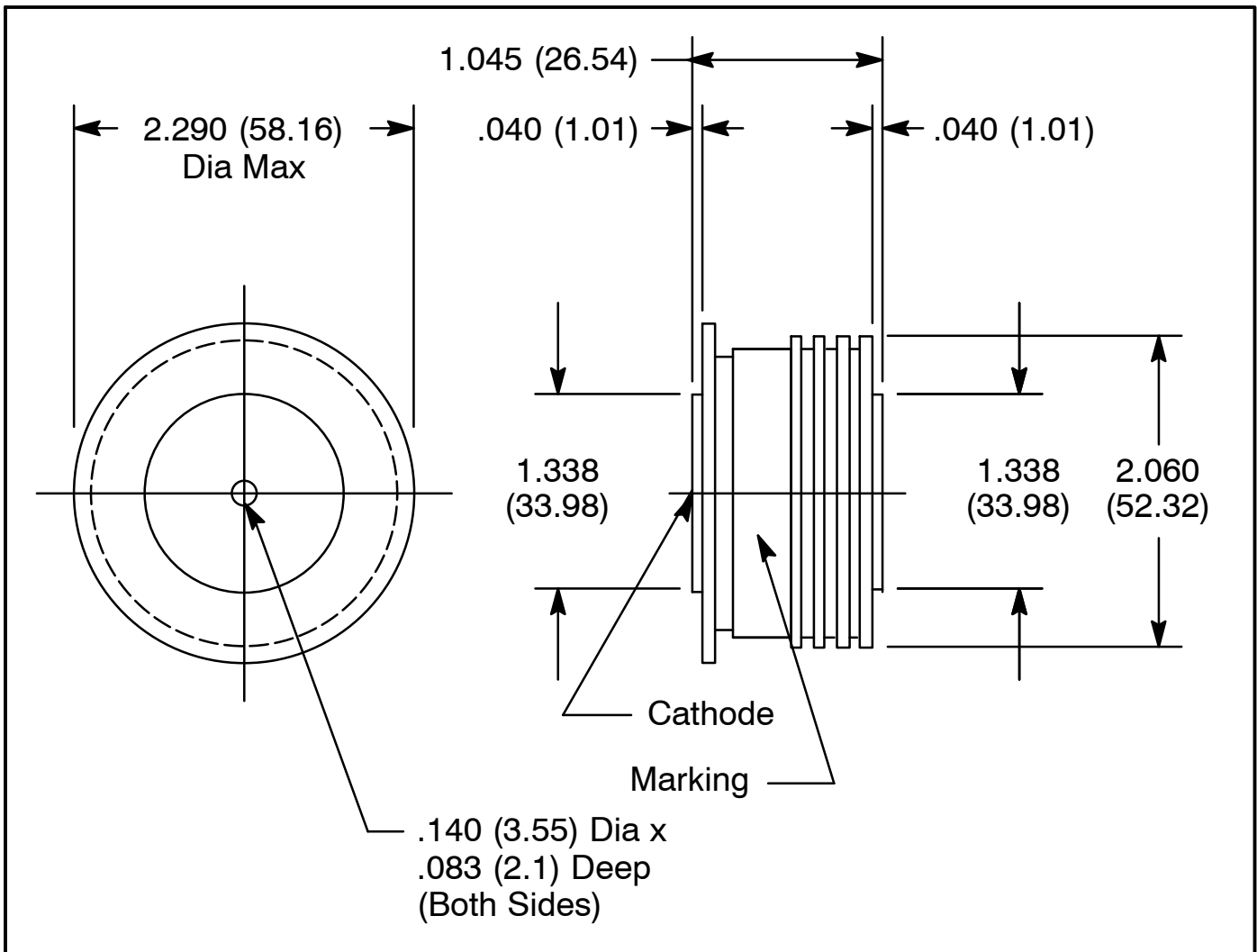
Parameter	Symbol	Test Conditions		Rating	Unit
Maximum RMS Forward Current	$I_{F(RMS)}$	@ +25°C heatsink temperature double side cooled		1320	A
Maximum Peak One-Cycle Non-Repetitive Surge Current	$I_{FSM}$	t = 10ms	Half sinewave current, rated $V_{RRM}$ reapplied, initial $T_J = +150^\circ\text{C}$	7820	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	$\text{A}^2\text{s}$
		t = 8.3ms		279	$\text{A}^2\text{s}$
		t = 10ms	No voltage reapplied, initial $T_J = +150^\circ\text{C}$	432	$\text{A}^2\text{s}$
		t = 8.3ms		395	$\text{A}^2\text{s}$
Maximum $I^2\sqrt{t}$	$I^2\sqrt{t}$	t = 0.1 to 10ms, no voltage reapplied		4320	$\text{A}^2\sqrt{\text{t}}$
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 $\mu\text{s}$	1000A	50A/ $\mu\text{a}$	-50V	3.5 $\mu\text{s}$	240 $\mu\text{C}$	110A



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