

NTE6111 & NTE6114 Silicon Power Rectifier Diode, 1100 Amp

Features:

- Wide Current Range
- High Voltage Rating
- High Surge Current Capabilities

Applications:

- Converters
- Power Supplies
- Machine Tool Controls
- High Power Drives
- Medium Traction Applications

Absolute Maximum Ratings:

Maximum Repetitive Peak Reverse Voltage, V_{RRM}	
NTE6111	600V
NTE6114	1600V
Maximum Non-Repetitive Peak Reverse Voltage, V_{RSM}	
NTE6111	700V
NTE6114	1700V
Maximum Reverse Current ($T_J = +180^\circ\text{C}$), I_{RRM}	
15mA	
Operating Junction Temperature Range, T_J	
-40° to $+180^\circ\text{C}$	
Storage Temperature Range, T_{stg}	
-55° to $+200^\circ\text{C}$	
Maximum Thermal Resistance, Junction-to-Heatsink (DC Operation), $R_{th(j-hs)}$	
Single Side Cooled	0.076°C/W
Double Side Cooled	0.038°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, $T_C = +55^\circ\text{C}$	1400	A
			Single side cooled, $T_C = +85^\circ\text{C}$	795	A

Electrical Specifications (Cont'd):

Parameter	Symbol	Test Conditions		Rating	Unit
Maximum RMS Forward Current	I _{F(RMS)}	@ +25°C heatsink temperature double side cooled		2500	A
Maximum Peak One–Cycle Forward Non–Repetitive Surge Current	I _{FSM}	t = 10ms	Sinusoidal Halfwave, 100% V _{RRM} Reapplied, Initial T _J = +180°C	10930	A
		t = 8.3ms		11450	A
		t = 10ms	Sinusoidal Halfwave, No Voltage Reapplied, Initial T _J = +180°C	13000	A
		t = 8.3ms		13600	A
Maximum I ² t for Fusing	I ² t	t = 10ms	Sinusoidal Halfwave, 100% V _{RRM} Reapplied, Initial T _J = +180°C	598	A ² s
		t = 8.3ms		546	A ² s
		t = 10ms	Sinusoidal Halfwave, No Voltage Reapplied, Initial T _J = +180°C	846	A ² s
		t = 8.3ms		772	A ² s
Maximum I ² √t for Fusing	I ² √t	t = 0.1 to 10ms, no voltage reapplied		8460	A ² √t
Threshold Voltage, Low Level	V _{F(TO)1}	T _J = +180°C, (16.7% × π × I _{F(AV)} < I < π × I _{F(AV)})		0.78	V
Threshold Voltage, High Level	V _{F(TO)2}	T _J = +180°C, (I > π × I _{F(AV)})		0.94	V
Forward Slope Resistance, Low Level	r _{f1}	T _J = +180°C, (16.7% × π × I _{F(AV)} < I < π × I _{F(AV)})		0.35	mΩ
Forward Slope Resistance, High Level	r _{f2}	T _J = +180°C, (I > π × I _{F(AV)})		0.26	mΩ
Maximum Forward Voltage Drop	V _{FM}	T _J = +180°C, I _{pk} = 1500A, t _p = 10ms		1.31	V

