



ELECTRONICS, INC.

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NTE6354 thru NTE6365 Silicon Power Rectifier Diode, 300 Amp

Features:

- Diffused Diode
- High Voltage Ratings up to 1600 Volts
- High Surge Current Capabilities
- Available in Anode-to-Case or Cathode-to-Case Style

Ratings and Characteristics:

Average Forward Current ($T_C = +130^\circ\text{C Max}$), $I_{F(AV)}$	300A
Maximum Repetitive Peak Reverse Voltage, V_{RRM}	
NTE6354, NTE6355*	400V
NTE6356, NTE6357*	600V
NTE6358, NTE6359*	1000V
NTE6362, NTE6363*	1400V
NTE6364, NTE6365*	1600V
Maximum Non-Repetitive Peak Reverse Voltage, V_{RSM}	
NTE6354, NTE6355*	500V
NTE6356, NTE6357*	720V
NTE6358, NTE6359*	1200V
NTE6362, NTE6363*	1500V
NTE6364, NTE6365*	1700V
Maximum Repetitive Peak Reverse Current ($T_J = +200^\circ\text{C}$), I_{RRM}	
NTE6354, NTE6355*	40mA
NTE6356, NTE6357*	40mA
NTE6358, NTE6359*	30mA
NTE6362, NTE6363*	30mA
NTE6364, NTE6365*	30mA
Maximum Forward Surge Current, I_{FSM}	
50Hz	5000A
60Hz	5200A
Fusing Current, I^2t	
50Hz	214000A ² s
60Hz	195000A ² s
Operating Junction Temperature, T_J	-40° to +180°C

* Indicated Anode-to-Case polarity, Cathode-to-Case polarity is standard.

Electrical Specifications:

Parameter	Symbol	Test Conditions		Rating	Unit	
Maximum Average Forward Current	$I_{F(AV)}$	180° sinusoidal condition, $T_C = +130^\circ\text{C}$ Max		300	A	
Maximum Peak One-Cycle Non-Repetitive Surge Current	I_{FSM}	t = 10ms	No voltage reapplied	Sinusoidal half wave, Initial $T_J = T_J$ max	5000	A
		t = 8.3ms			5200	A
		t = 10ms	100% V_{RRM} reapplied		3800	A
		t = 8.3ms			4000	A
Maximum I^2t for Fusing	I^2t	t = 10ms	No voltage reapplied	214000	A^2s	
		t = 8.3ms		195000	A^2s	
Maximum I^2t for Individual Device Fusing	I^2t	t = 10ms	100% V_{RRM} reapplied	151000	A^2s	
		t = 8.3ms		138000	A^2s	
Maximum $I^2\sqrt{t}$	$I^2\sqrt{t}$	t = 0.1 to 10ms, no voltage reapplied		2140000	$\text{A}^2\sqrt{\text{t}}$	
Maximum Value of Threshold Voltage	$V_{M(TO)}$	$T_J = +200^\circ\text{C}$		0.610	V	
Maximum Value of Forward Slope Resistance	r_t	$T_J = +200^\circ\text{C}$		0.751	$\text{m}\Omega$	

Thermal-Mechanical Specifications:

Parameter	Symbol	Test Conditions	Rating	Unit
Maximum Operation Junction Temperature	T_J		-40 to + 180	$^\circ\text{C}$
Maximum Storage Temperature	T_{stg}		-55 to + 180	$^\circ\text{C}$
Maximum Internal Thermal Resistance Junction-to-Case	R_{thJC}	DC operation	0.18	K/W
Thermal Resistance, Case-to-Sink	R_{thCS}	Mounting surface flat, smooth and greased	0.08	K/W
Mounting Torque	T	Non-lubricated threads	40.06 (360)	$\text{m}\bullet\text{N}$ ($\text{in}\bullet\text{lb}$)

