

NTE5892 thru NTE5899 NTE5900 thru NTE5911 Silicon Power Rectifier Diode, 16 Amp

Description and Features:

The NTE5892 through NTE5911 are low power general purpose rectifier diodes in a DO4 type package designed for battery chargers, converters, power supplies, and machine tool controls.

Features:

- High Surge Current Capability
- High Voltage Available
- Designed for a Wide Range of Applications
- Available in Anode-to-Case or Cathode-to-Case Style

Ratings and Characteristics:

Average Forward Current ($T_C = +140^\circ\text{C Max}$), $I_{F(AV)}$ 16A

Maximum Forward Surge Current, I_{FSM}

50Hz 295A

60Hz 310A

Fusing Current, I^2t

50Hz $435A^2s$

60Hz $395A^2s$

Fusing Current, $I^2\sqrt{t}$ $6150A^2\sqrt{s}$

Maximum Reverse Recovery Voltage Range, V_{RRM} 50 to 1000V

Voltage Ratings: ($T_J = +175^\circ\text{C}$)

NTE Type Number		V_{RRM} -Max Repetitive Peak Reverse Volt. (V)	V_{RSM} -Max Non-Repetitive Peak Reverse Voltage (V)	V_R -Max. Direct Reverse Voltage (V)	$V_{R(SR)}$ Minimum Avalanche Voltage (V)	I_{RM} -Max Reverse Current Rated V_{RRM} (mA)
Cathode to Case	Anode to Case					
5892	5893	50	75	50	—	12
5894	5895	100	150	100	—	12
5896	5897	200	275	200	—	12
5898	5899	300	385	300	—	12
5900	5901	400	500	400	500	12
5902	5903	500	613	50	626	12
5904	5905	600	725	600	750	12
5908	5909	800	950	800	950	12
5910	5911	1000	1200	1000	1150	12

Electrical Specifications:

Parameter	Symbol	Test Conditions		Rating	Unit
Maximum Average Forward Current	I _{F (AV)}	180° sinusoidal condition, T _C = +140°C Max		16	A
Maximum RMS Forward Current	I _{F(RMS)}			25	A
Maximum Peak One–Cycle Non–Repetitive Surge Current	I _{FSM}	t = 10ms	Sinusoidal Half Wave, No voltage reapplied	295	A
		t = 8.3ms		310	A
		t = 10ms	100% rated voltage reapplied, T _J = +175°C	350	A
		t = 8.3ms		370	A
Maximum I ² t for Individual Device Fusing	I ² t	t = 10ms	100% rated voltage reapplied, Initial T _J = +175°C	612	A ² s
		t = 8.3ms		560	A ² s
Maximum I ² √t	I ² √t	t = 0.1 to 10ms, No voltage reapplied, Note 1		6125	A ² √t
Maximum Peak Forward Voltage	V _{FM}	I _{FM} = 50A, T _J = +25°C		1.23	V
Maximum Value of Threshold Voltage	V _{M (TO)}	T _J = +175°C		0.78	V
Maximum Value of Forward Slope Resistance	r _t	T _J = +175°C		7.55	mΩ

Note 1. I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$

Thermal-Mechanical Specifications:

Parameter	Symbol	Test Conditions	Rating	Unit
Maximum Operation Junction Temperature	T_J		-65 to + 175	$^\circ\text{C}$
Maximum Storage Temperature	T_{stg}		-65 to + 200	$^\circ\text{C}$
Maximum Internal Thermal Resistance Junction-to-Case	R_{thJC}	DC operation	1.6	K/W
Thermal Resistance, Case-to-Sink	R_{thCS}	Mounting surface flat, smooth and greased	0.5	K/W
Mounting Torque	T	Non-lubricated threads	1.2 – 1.5 (10.5 – 13.5)	$\text{m}\bullet\text{N}$ ($\text{in}\bullet\text{lb}$)
Approximate Weight	wt		11 (0.25)	g (oz)

