

NTE6006 thru NTE6011 Fast Recovery Rectifier, 40A, 200ns

Description:

The NTE6006 through NTE6011 are fast recovery silicon rectifiers in a DO5 type package designed for special applications such as DC power supplies, inverters, converters, ultrasonic systems, choppers, low RF interference, sonar power supplies, and free wheeling diodes. A complete line of fast recovery rectifiers, these devices have a typical recovery time of 150ns providing high efficiency at frequencies to 250kHz.

Absolute Maximum Ratings: (Note 1)

Peak Repetitive Reverse Voltage, V_{RRM}

Working Peak Reverse Voltage, V_{RWM}

DC Blocking Voltage, V_R

NTE6006, NTE6007*	200V
NTE6008, NTE6009*	400V
NTE6010, NTE6011*	600V

Non-Repetitive Peak Reverse Voltage, V_{RSM}

NTE6006, NTE6007*	250V
NTE6008, NTE6009*	450V
NTE6010, NTE6011*	650V

RMS Reverse Voltage, $V_{R(RMS)}$

NTE6006, NTE6007*	140V
NTE6008, NTE6009*	280V
NTE6010, NTE6011*	420V

Average Rectified Forward Current (Single phase, resistive load, $T_C = +100^\circ\text{C}$), I_O 40A

Non-Repetitive Peak Surge Current (Surge applied at rated load conditions), I_{FSM} 350A

Operating Junction Temperature Range, T_J -65° to $+160^\circ\text{C}$

Storage Temperature Range, T_{stg} -65° to $+175^\circ\text{C}$

Thermal Resistance, Junction-to-Case, R_{thJC} 0.85°C/W

Note 1. * Indicates Anode-to-Case polarity, Cathode-to-Case is standard.

Electrical Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Instantaneous Forward Voltage	v_F	$i_F = 125A, T_J = +150^{\circ}C$	–	1.3	1.6	V
Forward Voltage	V_F	$I_F = 40A, T_C = +25^{\circ}C$	–	1.0	1.4	V
Reverse Current (Rated DC Voltage)	I_R	$T_C = +25^{\circ}C$	–	25	50	μA
		$T_C = +100^{\circ}C$	–	1.0	2.0	mA

Reverse Recovery Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Recovery Time	t_{rr}	$I_F = 1A \text{ to } V_R = 30V$	–	150	200	ns
		$I_{FM} = 36A, di/dt = 25A/\mu s$	–	200	400	ns
Reverse Recovery Current	$I_{RM(REC)}$	$I_F = 1A \text{ to } V_R = 30V$	–	2.0	3.0	A

