

## NTE592 Silicon Diode, General Purpose, High Voltage

**Description:**

The NTE592 is a silicon epitaxial high-speed diode in an SOT-23 type surface mount package. This device is intended for switching and general purposes applications.

**Absolute Maximum Ratings:**

Continuous Reverse Voltage, $V_R$ .....	200V
Repetitive Peak Reverse Voltage, $V_{RRM}$ .....	250V
Non-Repetitive Peak Forward Current ( $t = 1s$ ), $I_{FSM}$ .....	500mA
Average Rectified Forward Current (Average over any 20ms period, Note 1), $I_{F(AV)}$ .....	200mA
DC Forward Current ( $T_A \leq +25^\circ C$ , Note 2), $I_F$ .....	200mA
Repetitive Peak Forward Current, $I_{FRM}$ .....	625mA
Total Power Dissipation ( $T_A \leq +25^\circ C$ ), $P_{tot}$ .....	200mW
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C
Thermal Resistance, Junction-to-Ambient (Note 2), $R_{thJA}$ .....	430K/W
Thermal Resistance, Tab-to-Soldering Points, $R_{thTS}$ .....	280K/W
Thermal Resistance, Soldering Points-to-Ambient, $R_{thSA}$ .....	90K/W

Note 1. Measured under pulse conditions: Pulse Time =  $t_p \leq 0.3ms$ .

Note 2. Mounted on a ceramic substrate of .314 (8mm) x .393 (10mm) x .027 (0.7mm).

**Electrical Characteristics:** ( $T_J = +25^\circ C$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	$V_F$	$I_F = 100mA$	-	-	1.00	V
		$I_F = 200mA$	-	-	1.25	V
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu A$ , Note 1 & 3	250	-	-	V
Reverse Current	$I_R$	$V_R = 200V$	-	-	100	nA
		$V_R = 200V$ , $T_J = +150^\circ C$	-	-	100	$\mu A$
Differential Resistance	$r_{diff}$	$I_F = 10mA$	-	5	-	$\Omega$
Diode Capacitance	$C_d$	$V_R = 0$ , $f = 1MHz$	-	-	5	pF
Reverse Recovery Time (When switched from $I_F = 30mA$ to $I_R = 30mA$ )	$t_{rr}$	measured at $I_R = 3mA$ , $R_L = 100\Omega$	-	-	50	ns

Note 1. Measured under pulse conditions: Pulse Time =  $t_p \leq 0.3ms$ .

Note 3. At zero life time, measured under pulse conditions to avoid excessive dissipation and voltage limited to 275V.

