 www.agelectronica.com

NTE ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE593
Silicon Diode, High Speed Switch

Description:

The NTE593 is a silicon epitaxial high–speed diode in an SOT–23 type surface mount package. This device is intended for high–speed switching in hybrid thick–film circuits.

Absolute Maximum Ratings:

Continuous Reverse Voltage, V_R 75V
Repetitive Peak Reverse Voltage, V_{RRM} 85V
Non–Repetitive Peak Forward Current (t = 1s), I_{FSM} 500mA
Average Rectified Forward Current (Average over any 20ms period, Note 1), $I_{F(Av)}$ 250mA
DC Forward Current ($T_A \le +25°C$, Note 2), I_F 250mA
Repetitive Peak Forward Current, I_{FRM} 250mA
Total Power Dissipation ($T_A \le +25°C$), 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

Note 1. Measured under pulse conditions: $t_p \le 0.5ms$, $I_{F(AV)} = 150mA$, $t_{(av)} \le 1ms$, for sinusoidal operation.

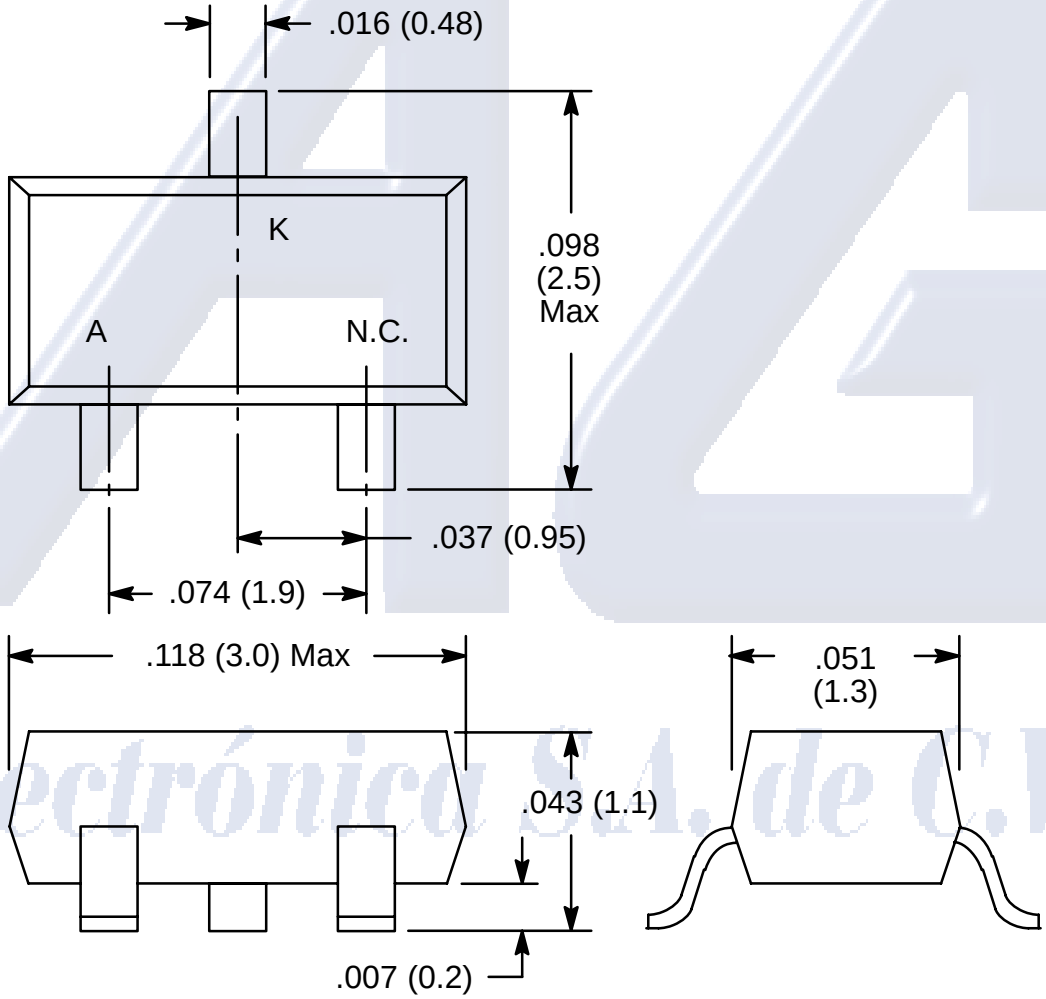
Note 2. Mounted on a ceramic substrate of .314 (8mm) x .393 (10mm) x .027 (0.7mm).

Electrical Characteristics: ($T_J = +25°C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 1mA$	–	–	715	mV
		$I_F = 10mA$	–	–	855	mV
		$I_F = 50mA$	–	–	1000	mV
		$I_F = 150mA$	–	–	1250	mV
Reverse Current	I_R	$V_R = 75V$	–	–	1	µA
		$V_R = 75V$, $T_J = +150°C$	–	–	50	µA
Diode Capacitance	C_d	$V_R = 0$, f = 1MHz	–	–	2	pF
Reverse Recovery Time (When switched from $I_F = 30mA$ to $I_R = 30mA$	t_{rr}	measured at $I_R = 1mA$, $R_L = 100\Omega$	–	–	6	ns
Recovery Charge (When switched from $I_F = 10mA$ to $V_R = 5V$	Q_s	$R_L = 100\Omega$	–	–	45	pC

 www.agelectronica.com

www.agelectronica.com



www.agelectronica.com