

## NTE596 Silicon Diode, Dual, Common Anode, High Speed

### **Description:**

The NTE596 consists of two silicon diodes in an SOT-23 type surface mount package. The anodes are common and the device is intended for high-speed switching applications in thick and thin-film circuits.

### **Absolute Maximum Ratings:**

Continuous Reverse Voltage, $V_R$ .....	70V
Repetitive Peak Reverse Voltage, $V_{RRM}$ .....	70V
Non-Repetitive Peak Forward Current (Per device, $t = 1s$ ), $I_{FSM}$ .....	500mA
Average Rectified Forward Current (Average over any 20ms period, Note 1), $I_{F(AV)}$ .....	250mA
DC Forward Current, $I_F$ .....	250mA
Repetitive Peak Forward Current, $I_{FRM}$ .....	250mA
Total Power Dissipation ( $T_A \leq +25^\circ C$ ), $P_{tot}$ .....	200mW
Operating Junction Temperature, $T_J$ .....	+175°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +175°C
Thermal Resistance, Junction-to-Tab, $R_{thJT}$ .....	60K/W
Thermal Resistance, Tab-to-Soldering Points, $R_{thTS}$ .....	2 x 280K/W
Thermal Resistance, Soldering Points-to-Ambient (Note 2), $R_{thSA}$ .....	2 x 90K/W

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

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

### **Electrical Characteristics (Per Diode):** ( $T_J = +25^\circ C$ 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	$I_R$	$V_R = 70V$	-	-	2.5	$\mu A$
		$V_R = 70V, T_J = +150^\circ C$	-	-	50	$\mu A$
Diode Capacitance	$C_d$	$V_R = 0, f = 1MHz$	-	-	2	pF
Forward Recovery Voltage (When switched to $I_F = 10mA$ )	$V_{fr}$	$t_r = 20ns$	-	-	1.75	V

**Electrical Characteristics (Per Diode):** ( $T_J = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Recovery Time (When switched from $I_F = 10\text{mA}$ to $I_R = 10\text{mA}$ )	$t_{rr}$	measured at $I_R = 1\text{mA}$ , $R_L = 100\Omega$	–	–	6	ns
Recovery Charge (When switched from $I_F = 10\text{mA}$ to $V_R = 5\text{V}$ )	$Q_s$	$R_L = 100\Omega$	–	–	45	pC

