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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 ($T_A \le +25°C$), 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: $t_p \le 0.5$ms, $I_{F(AV)} = 150$mA, $t_{(av)} \le 1$ms, 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°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	µA
		V_R = 70V, T_J = +150°C	–	–	50	µA
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°C unless otherwise specified)

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