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NTE631 Silicon Rectifier Diode High-Speed Switch (Surface Mount)

Description:

The NTE631 is a high-speed switching diode fabricated in planar technology and encapsulated in a very small rectangular ceramic SMD package.

Features:

- Small Ceramic SMD Package
- High Switching Speed

Applications:

- High-Speed Switching in Surface Mounted Circuits

Absolute Maximum Ratings:

Repetitive Peak Reverse Voltage, V_{RRM}	85V
Continuous Reverse Voltage, V_R	75V
Continuous Forward Current (Note 1), I_F	250mA
Repetitive Peak Forward Current, I_{FRM}	5020mA
Non-Repetitive Peak Forward Current (Square Wave, $T_J = +25^\circ\text{C}$ Prior to Surge), I_{FSM}	
$t = 1\mu\text{s}$	4A
$t = 1\text{ms}$	1A
$t = 1\text{sec}$	0.5A
Total Power Dissipation ($T_A = +25^\circ\text{C}$, Note 1), P_{tot}	400mW
Operating Junction Temperature, T_J	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 1), R_{thJA}	315K/W
Thermal Resistance, Junction-to-Case, R_{thJC}	200K/W

Note 1. Device mounted on an FR4 printed-circuit board.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 1\text{mA}$	–	–	715	mV
		$I_F = 10\text{mA}$	–	–	855	mV
		$I_F = 50\text{mA}$	–	–	1.0	V
		$I_F = 150\text{mA}$	–	–	1.25	V

Electrical Characteristics (Cont'd): ($T_J = +25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Current	I_R	$V_R = 25\text{V}$	–	–	30	nA
		$T_J = +150^{\circ}\text{C}$	–	–	30	μA
		$V_R = 75\text{V}$	–	–	1	μA
		$T_J = +150^{\circ}\text{C}$	–	–	50	μA
Diode Capacitance	C_d	$f = 1\text{MHz}, V_R = 0$	–	–	1.5	pF
Reverse Recovery Time	t_{rr}	When switched from $I_F = 10\text{mA}$ to $I_R = 10\text{mA}$, $R_L = 100\Omega$, measured at $I_R = 1\text{mA}$	–	–	4	ns
Forward Recovery Voltage	V_{fr}	When switched from $I_F = 10\text{mA}$, $t_r = 20\text{ns}$	–	–	1.75	V

