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NTE634 thru NTE636 2 Amp Ultra Fast Recovery Controlled Avalanche Rectifiers

Description:

The NTE634, NTE635, and NTE636 are 2A Controlled Avalanche Rectifiers encased in a rugged glass SOD57 axial lead package, using a high temperature alloyed construction. These packages are hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

Features:

- Glass Passivated
- High Maximum Operating Temperature
- Low Leakage Current
- Guaranteed Avalanche Energy Absorption Capability

Absolute Maximum Ratings:

Repetitive Peak Reverse Voltage, V_{RRM}

NTE634	200V
NTE635	400V
NTE636	600V

Continuous Reverse Voltage, V_R

NTE634	200V
NTE635	400V
NTE636	600V

Average Forward Current (Note 1), $I_{F(AV)}$

($T_{tp} = +85^{\circ}\text{C}$, Lead Length = 10mm)

NTE634	2.0A
NTE635	1.9A
NTE636	1.6A

($T_A = +60^{\circ}\text{C}$, Printed-Circuit Board Mounting)

NTE634	2.0A
NTE635	1.9A
NTE636	1.6A

Repetitive Peak Forward Current, I_{FRM}

($T_{tp} = +85^{\circ}\text{C}$)

NTE634, NTE635	20A
NTE636	16A

($T_A = +60^{\circ}\text{C}$)

NTE634	14A
NTE635	13A
NTE636	11A

Non-Repetitive Peak Forward Current (Note 2), I_{FSM}

NTE634, NTE635	50A
NTE636	40A

Note 1. Averaged over any 20ms period.

Note 2. $t = 10\text{ms}$ half sine wave, $T_J = T_{Jmax}$ prior to surge, $V_R = V_{RRMmax}$.

Absolute Maximum Ratings (Cont'd):Non-Repetitive Peak Reverse Avalanche Energy (Note 3), E_{RSM} 20mJStorage Temperature Range, T_{stg} -65° to $+175^{\circ}\text{C}$ Junction Temperature, T_J -65° to $+175^{\circ}\text{C}$ Thermal Resistance, Junction-to-Tie-Point (Lead Length 10mm), $R_{th-j-tp}$ 46K/WThermal Resistance, Junction-to-Ambient (Note 4), R_{th-j-a} 100K/WNote 3. $L = 120\text{mH}$, $T_J = T_{Jmax}$ prior to surge, Inductive load switched off.Note 4. Device mounted on an epoxy-glass printed-circuit board, 1.5mm thick; thickness of Cu-layer $\geq 40\mu\text{m}$.**Electrical Characteristics:** ($T_J = +25^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Forward Voltage NTE634	V_F	$I_F = 2\text{A}$	$T_J = T_{Jmax}$	–	–	0.78	V
				–	–	0.98	V
			$T_J = T_{Jmax}$	–	–	0.82	V
				–	–	1.05	V
			$T_J = T_{Jmax}$	–	–	1.0	V
				–	–	1.25	V
Reverse Avalanche Breakdown Voltage NTE634	$V_{(BR)R}$	$I_R = 0.1\text{mA}$		220	–	–	V
				440	–	–	V
				675	–	–	V
Reverse Current	I_R	$V_R = V_{RRMmax}$		–	–	5	μA
		$V_R = V_{RRMmax}$, $T_J = +165^{\circ}\text{C}$		–	–	150	μA
Reverse Recovery Time NTE634	t_{rr}	When switched from $I_F = 0.5\text{A}$ to $I_R = 1\text{A}$, measured at $I_R = 0.25\text{A}$		–	–	25	ns
				–	–	50	ns
Diode Capacitance NTE634	C_d	$f = 1\text{MHz}$, $V_R = 0$		–	100	–	pF
				–	80	–	pF
				–	65	–	pF
Maximum Slope of Reverse Recovery	$\left \frac{dI_R}{dt} \right $	When switched from $I_F = 1\text{A}$ to $V_R \geq 30\text{V}$ and $dI_F/dt = -1\text{A}/\mu\text{s}$		–	–	4	$\text{A}/\mu\text{s}$

