

NTE6094 Silicon Rectifier Schottky Barrier

Description:

The NTE6094 is a Schottky Barrier Rectifier in a DO5 type package designed for use as a rectifier in low-voltage, high-frequency inverters, freewheeling diodes, and polarity-protection diodes.

Features:

- Guaranteed Reverse Avalanche
- Extremely Low v_F
- Low Stored Charge, majority Carrier Conduction
- Guardring for Stress Protection
- Low Power Loss/High Efficiency
- +150°C Operating Junction Temperature Capability
- High Surge Capacity

Absolute Maximum Ratings:

Peak Repetitive Reverse Voltage, V_{RRM}	45V
Working Peak Reverse Voltage, V_{RWM}	45V
DC Blocking Voltage, V_R	45V
Peak Repetitive Forward Current, I_{FRM} ($V_R = 45V$, $T_C = +90^\circ C$, Square Wave, 20kHz)	120A
Non-Repetitive Peak Surge Current, I_{FSM} (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60Hz)	800A
Peak Repetitive Reverse Surge Current (Note 1, 2.0 μ s, 1.0kHz), I_{RRM}	2A
Voltage Rate of Change ($V_R = 45V$), dv/dt	700V/ μ s
Operating Junction Temperature Range (Reverse Voltage Applied), T_J	-65° to +150°C
Storage Temperature Range, T_{stg}	-65° to +165°C
Maximum Thermal Resistance, Junction-to-Case, R_{thJC}	1.0°C/W

Note 1. Pulse Test: Pulse Width = 300 μ s, Duty Cycle = 2%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Instantaneous Forward Voltage	V_F	$i_F = 60\text{A}$, Note 1	—	—	0.70	V
		$i_F = 60\text{A}$, $T_C = +125^{\circ}\text{C}$, Note 1	—	—	0.60	V
		$i_F = 120\text{A}$, $T_C = +125^{\circ}\text{C}$, Note 1	—	—	0.84	V
Maximum Instantaneous Reverse Current	i_R	$V_R = 45\text{V}$, $T_C = +25^{\circ}\text{C}$, Note 1	—	—	50	mA
		$V_R = 45\text{V}$, $T_C = +125^{\circ}\text{C}$, Note 1	—	—	200	mA
DC Reverse Current	I_R	$V_R = 45\text{V}$, $T_C = +115^{\circ}\text{C}$	—	—	250	mA
Maximum Capacitance	C_t	$V_R = 5\text{V}$, $100\text{kHz} \leq f \leq 1\text{MHz}$	—	—	4000	pF

Note 1. Pulse Test: Pulse Width = $300\mu\text{s}$, Duty Cycle = 2%.

