

## 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 $\mu$ s, 1.0kHz), $I_{RRM}$ .....	2A
Voltage Rate of Change ( $V_R = 45V$ ), $dv/dt$ .....	700V/ $\mu$ 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 $\mu$ 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%.

