



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

2N6497

Silicon NPN Transistor

Power Amp, High Voltage, Switch

TO-220 Type Package

Description:

The 2N6497 is a silicon NPN transistor in a TO-220 type package designed for high-voltage inverters, switching regulators and line-operated amplifier applications. Especially well suited for switching power supply applications.

Features:

- High Collector-Emitter Sustaining Voltage: $V_{CEO(sus)} = 250V$ (Min)
- Excellent DC Current Gain: $h_{FE} = 10-75$ @ $I_C = 2.5A$
- Low Collector-Emitter Saturation Voltage: $V_{CE(sat)} = 1V$ (Max) @ $I_C = 2.5A$

Absolute Maximum Ratings: (Note 1)

Collector-Emitter Voltage, V_{CEO}	250V
Collector-Base Voltage, V_{CB}	350V
Emitter-Base Voltage, V_{EB}	6V
Collector Current, I_C	
Continuous	5A
Peak	10A
Base Current, I_B	2A
Total Power Dissipation ($T_C = +25^\circ C$), P_D	80W
Derate Above $25^\circ C$	640mW/ $^\circ C$
Operating Junction Temperature Range, T_J	-65° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ C$
Thermal Resistance, Junction to Case, R_{thJC}	1.56 $^\circ C/W$

Note 1. Stresses exceeding Absolute Maximum Ratings may damage the device. Absolute Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 25mA, I_B = 0$, Note 2	250	-	-	V
Collector Cutoff Current	I_{CEX}	$V_{CE} = 350V, V_{BE(off)} = 1.5V$	-	-	1.0	mA
		$V_{CE} = 350V, V_{BE(off)} = 1.5V,$ $T_C = +100^\circ C$	-	-	10	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 6V, I_C = 0$	-	-	1.0	mA

Note 2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 2)						
DC Current Gain	h_{FE}	$I_C = 2.5\text{A}, V_{CE} = 10\text{V}$	10	-	75	
		$I_C = 5\text{A}, V_{CE} = 10\text{V}$	3	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5\text{A}, I_B = 500\text{mA}$	-	-	1.0	V
		$I_C = 5\text{A}, I_B = 2\text{A}$	-	-	5.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2.5\text{A}, I_B = 500\text{mA}$	-	-	1.5	V
		$I_C = 5\text{A}, I_B = 2\text{A}$	-	-	2.5	V
Dynamic Characteristics						
Current Gain-Bandwidth Product	f_T	$I_C = 250\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	5	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{kHz}$	-	-	150	pF
Switching Characteristics						
Rise Time	t_r	$V_{CC} = 125\text{V}, I_C = 2.5\text{A}, I_{B1} = 500\text{mA}$	-	0.4	1.0	μs
Storage Time	t_s	$V_{CC} = 125\text{V}, I_C = 2.5\text{A}, I_{B1} = I_{B2} = 500\text{mA}, V_{BE} = 5\text{V}$	-	1.4	2.5	μs
Fall Time	t_f	$V_{CC} = 125\text{V}, I_C = 2.5\text{A}, I_{B1} = I_{B2} = 500\text{mA}$	-	0.45	1.0	μs

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

