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## 2N6125 Silicon PNP Transistor Power Amp Driver, Output, Switch TO-220 Type Package

**Description:**

The 2N6125 is a silicon PNP transistor in a TO-220 type package designed for use in power amplifier and switching circuit applications.

**Features:**

- Collector-Emitter Sustaining Voltage:  $V_{CEO(sus)} = 60V$  Min
- Collector-Emitter Saturation Voltage:  $V_{CE(sat)} = 600mV$  Max @  $I_C = 1.5A, I_B = 150mA$

**Absolute Maximum Ratings:**

Collector-Emitter Voltage, $V_{CEO}$ .....	60V
Collector-Base Voltage, $V_{CBO}$ .....	60V
Emitter-Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	4A
Peak .....	8A
Total Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....	40W
Derate Above $25^\circ C$ .....	320mW/°C
Operating Junction Temperature Range, $T_J$ .....	-65° to +150°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	3.125°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA, I_B = 0$ , Note 1	60	-	-	V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 60V, I_B = 0$	-	-	1.0	mA
		$V_{CE} = 60V, V_{BE(off)} = 1.5V$	-	-	0.1	mA
		$V_{CE} = 60V, V_{BE(off)} = 1.5V, T_J = +125^\circ C$	-	-	2.0	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	-	-	1.0	mA

Note 1. Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>ON Characteristics (Note 1)</b>						
DC Current Gain	$h_{FE}$	$V_{CE} = 2\text{V}, I_C = 1.5\text{A}$	20	-	80	
		$V_{CE} = 2\text{V}, I_C = 4\text{A}$	10	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5\text{A}, I_B = 150\text{mA}$	-	-	0.6	V
		$I_C = 4\text{A}, I_B = 1\text{A}$	-	-	1.4	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$I_C = 1.5\text{A}, V_{CE} = 2\text{V}$	-	-	1.2	V
<b>Dynamic Characteristics</b>						
Current-Gain-Bandwidth Product	$f_T$	$I_C = 1\text{A}, V_{CE} = 4\text{V}, f = 1\text{MHz}, \text{Note 2}$	2.5	-	-	MHz
Small-Signal Current Gain	$h_{fe}$	$I_C = 100\text{mA}, V_{CE} = 2\text{V}, f = 1\text{kHz}$	25	-	-	

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

Note 2.  $f_T = |h_{fe}| \cdot f_{\text{test}}$

