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2N5428 Silicon NPN Transistor Medium Power TO-66 Type Package

Description:

The 2N5430 is a silicon NPN transistor in a TO-66 type package designed for switching and wide-band amplifier applications

Absolute Maximum Ratings:

Collector-Base Voltage, V_{CBO}	80V
Collector-Emitter Voltage, V_{CEO}	80V
Emitter-Base Voltage, V_{EBO}	6V
Collector Current, I_C	7A
Base Current, I_B	1A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	40W
Derate above 25°C	228 mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+200^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	4.37°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector Emitter Sustaining Voltage	V_{CEO} (sus)	$I_C = 50\text{mA}$, $I_B = 0$, Note 1	80	-	-	V
Collector Cutoff Current	I_{CEX}	$V_{CE} = 75\text{V}$, $V_{EB(off)} = 1.5\text{V}$	-	-	0.1	mA
		$V_{CE} = 75\text{V}$, $V_{EB(off)} = 1.5\text{V}$, $T_C = 150^\circ\text{C}$	-	-	1.0	mA
	I_{CBO}	$V_{CB} = \text{Rated } V_{CB}$, $I_E = 0$	-	-	0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 6\text{V}$, $I_C = 0$	-	-	0.1	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 500\text{mA}$, $V_{CE} = 2\text{V}$	60	-	-	-
		$I_C = 2\text{A}$, $V_{CE} = 2\text{V}$	60	-	240	-
		$I_C = 5\text{A}$, $V_{CE} = 2\text{V}$	40	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2\text{A}$, $I_B = 0.2\text{A}$	-	-	0.7	V
		$I_C = 7\text{A}$, $I_B = 0.7\text{A}$	-	-	1.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2\text{A}$, $I_B = 0.2\text{A}$	-	-	1.2	V
		$I_C = 7\text{A}$, $I_B = 0.7\text{A}$	-	-	2.0	V

Note 1. Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2.0%

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Current Gain Bandwidth Product	f_T	$I_C = 500\text{mA}$, $V_{CE} = 10\text{V}$, $f = 10\text{MHz}$, Note 2	20	-	-	MHz

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

