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2N5430
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} 100V
Collector–Emitter Voltage, V_{CEO} 100V
Emitter–Base Voltage, V_{EBO} 6V
Collector Current, I_C 7A
Base Current, I_B 1A
Total Device Dissipation (T_C = +25°C), P_D 40W
Derate above 25°C . . . . . 228 mW/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 4.37°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector Emitter Sustaining Voltage	V_{CEO} (sus)	I_C = 50mA, I_B = 0, Note 1	100	–	–	V
Collector Cutoff Current	I_{CEX}	V_{CE} = 90V, $V_{EB(off)}$ = 1.5V	–	–	0.1	mA
		V_{CE} = 90V, $V_{EB(off)}$ = 1.5V, T_C = 150°C	–	–	1.0	mA
	I_{CBO}	V_{CB} = Rated V_{CB}, I_E = 0	–	–	0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 6V, I_C = 0	–	–	0.1	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 500mA, V_{CE} = 2V	60	–	–	–
		I_C = 2A, V_{CE} = 2V	60	–	240	–
		I_C = 5A, V_{CE} = 2V	40	–	–	–
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 2A, I_B = 0.2A	–	–	0.7	V
		I_C = 7A, I_B = 0.7A	–	–	1.2	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 2A, I_B = 0.2A	–	–	1.2	V
		I_C = 7A, I_B = 0.7A	–	–	2.0	V

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

Electrical Characteristics (Cont'd): (T_C = +25°C unless otherwise specified)

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

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