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2N5416

Silicon PNP Transistor

Power Amplifier & High Speed Switch

(Compl to NTE396)

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CE0}	300V
Collector–Base Voltage, V_{CBO}	350V
Emitter–Base Voltage, V_{EBO}	6V
Continuous Collector Current, I_C	1A
Base Current, I_B	500mA
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	10W
Derate Above 25°C	57mW/ $^\circ\text{C}$
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}	17.5 $^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Ambient, R_{thJA}	150 $^\circ\text{C}/\text{W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CE0(sus)}$	$I_C = 50\text{mA}$, $I_B = 0$, Note 1	300	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 280\text{V}$, $I_E = 0$	–	–	50	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 6\text{V}$, $I_C = 0$	–	–	20	μA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 50\text{mA}$, $V_{CE} = 10\text{V}$	30	–	120	
Small–Signal Characteristics						
Output Capacitance	C_{obo}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$	–	–	15	pF
Input Capacitance	C_{ibo}	$V_{CB} = 5\text{V}$, $I_C = 0$, $f = 1\text{MHz}$	–	–	75	pF
Small–Signal Current Gain	h_{fe}	$I_C = 10\text{mA}$, $V_{CE} = 10\text{V}$, $f = 1\text{MHz}$	25	–	–	
Real Part of Input Impedance	$\text{Re}(h_{ie})$	$V_{CE} = 10\text{V}$, $I_C = 5\text{mA}$, $f = 1\text{MHz}$	–	–	300	Ω

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

CAUTION: The sustaining voltage ***must not*** be measured on a curve tracer.

