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2N2907A
Silicon PNP Transistor
Small Signal Switching
TO–18 Type Package

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 60V
Collector–Base Voltage, V_{CBO} 60V
Emitter–Base Voltage, V_{EBO} 5V
Continuous Collector Current, I_C 600mA
Total Device Dissipation, P_D
T_A = +25°C 500mW
T_C = +25°C 1.0W
Operating Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 325°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 150°C/W

Note 1. Stresses above those listed in Absolute Maximum Ratings may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damaged may occur and reliability may be affected.

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
OFF Characteristics							
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA		60	–	–	V
Collector–Emitter Cutoff Current	I_{CES}	V_{CE} = 50V		–	–	50	nA
Collector–Base Cutoff Current	I_{CBO}	V_{CB} = 50V, I_E = 0		–	–	10	nA
		V_{CB} = 60V, I_E = 0		–	–	10	μA
Emitter–Base Cutoff Current	I_{EBO}	V_{EB} = 4V		–	–	50	nA
		V_{EB} = 5V		–	–	10	μA
ON Characteristics (Note 2)							
DC Current Gain	h_{FE}	V_{CE} = 10V	I_C = 0.1mA	75	–	–	
			I_C = 1mA	100	–	450	
			I_C = 10mA	100	–	–	
			I_C = 150mA	100	–	300	
			I_C = 500mA	50	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 150mA, I_B = 15mA		–	–	0.4	V
		I_C = 500mA, I_B = 50mA		–	–	1.6	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 150mA, I_B = 15mA		0.6	–	1.3	V
		I_C = 500mA, I_B = 50mA		–	–	2.6	V

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small−Signal Characteristics						
Magnitude of Small Signal Current Gain	$\|h_{fe}\|$	I_C = 20mA, V_{CE} = 20V, f = 100MHz	2.0	–	–	
Small−Signal Current Gain	h_{fe}	I_C = 1mA, V_{CE} = 10V, f = 1kHz	100	–	–	
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, 100kHz ≤ f ≤ 1MHz	–	–	8	pF
Input Capacitance	C_{ibo}	V_{EB} = 2V, I_C = 0, 100kHz ≤ f ≤ 1MHz	–	–	30	pF
Switching Characteristics						
Turn−On Time	t_{on}		–	–	45	ns
Turn−Off Time	t_{off}		–	–	300	ns

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