ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

2N2905A
Silicon PNP Transistor
Small–Signal Switching
TO–39 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 500mA
Total Device Dissipation, P_D
T_A = +25°C 800mW
T_C = +25°C 3.0W
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 195°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 50°C/W
Lead Temperature (During Soldering, 1/16” from case, 60sec max), T_L . . . . . +300°C

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} = 60V	–	–	1.0	μA
Collector–Base Cutoff Current	I_{CBO}	V_{CB} = 50V	–	–	10	nA
		V_{CB} = 60V	–	–	10	μA
Emitter–Base Cutoff Current	I_{EBO}	V_{EB} = 5V	–	–	10	μA
		V_{EB} = 3.5V	–	–	50	nA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 0.1mA, V_{CE} = 10V	75	–	–	
		I_C = 1.0mA, V_{CE} = 10V	100	–	450	
		I_C = 10mA, V_{CE} = 10V	100	–	–	
		I_C = 150mA, V_{CE} = 10V	100	–	300	
		I_C = 500mA, V_{CE} = 10V	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	–	–	1.3	V
		I_C = 500mA, I_B = 50mA	–	–	2.6	V

Note 1. 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 = 50mA, 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	–	–	8.0	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