2N916

JAN AVAILABLE
CASE 22, STYLE 1
TO-18 (TO-206AA)

GENERAL PURPOSE TRANSISTOR

NPN SILICON

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	25	Vdc
Collector-Base Voltage	V_{CBO}	45	Vdc
Emitter-Base Voltage	V_{EBO}	5	Vdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.36 2.06	Watts mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.2 6.9	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200	°C

Refer to 2N3946 for graphs.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage(1) (I_C = 30 mA, I_B = 0)	$V_{CEO(sus)}$	25	—	Vdc
Collector-Base Breakdown Voltage (I_C = 10 μA, I_E = 0)	$V_{(BR)CBO}$	45	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μA, I_C = 0)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current (V_{CB} = 30 V, I_E = 0)	I_{CBO}	—	10	nAdc
Collector Cutoff Current @ 150°C (V_{CB} = 30 V, I_E = 0)	I_{CBO}	—	10	μAdc
ON CHARACTERISTICS				
DC Current Gain(1) (I_C = 10 mA, V_{CE} = 1.0 V) (I_C = 10 mA, V_{CE} = 1.0 V, −55°C)	h_{FE}	 50 15	 200 —	—
Collector-Emitter Saturation Voltage (I_C = 10 mA, I_B = 1.0 mA)	$V_{CE(sat)}$	—	0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 10 mA, I_B = 1.0 mA)	$V_{BE(sat)}$	—	0.9	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Output Capacitance (V_{CB} = 5.0 V, I_E = 0)	C_{obo}	—	6.0	pF
Input Capacitance (V_{EB} = 0.5 V, I_C = 0)	C_{ibo}	—	10	pF
Input Impedance, f = 1.0 kHz (I_C = 1.0 mA, V_{CE} = 5.0 V) (I_C = 5.0 mA, V_{CE} = 5.0 V)	h_{ie}	 — —	 6000 2000	 ohms ohms
Small-Signal Current Gain, f = 1.0 kHz (I_C = 1.0 mA, V_{CE} = 5.0 V) (I_C = 5.0 mA, V_{CE} = 5.0 V)	h_{fe}	 40 50	 200 250	—
Magnitude of Forward Circuit Transfer Ratio, Common-Emitter (I_C = 10 mA, V_{CE} = 15 V)	$\lvert h_{fe} \rvert$	3.0	—	—
Output Admittance, f = 1.0 kHz (I_C = 1.0 mA, V_{CE} = 5.0 V) (I_C = 5.0 mA, V_{CE} = 5.0 V)	h_{oe}	 — —	 75 125	 μmho μmho
Collector Base Time Constant (I_C = 10 mA, V_{CB} = 10 V, f = 40 MHz)	$rb'C_c$	—	300	ps

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 1.0%.