2N978 (SILICON)

PNP SILICON ANNULAR TRANSISTOR

. . . designed for general-purpose amplifier applications.

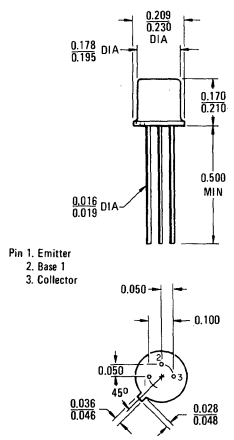
- Collector-Emitter Sustaining Voltage —
  $V_{CEO(sus)}$ = 20 Vdc (Min) @ I_C = 100 mAdc

PNP SILICON AMPLIFIER TRANSISTOR

***MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	20	Vdc
Collector-Base Voltage	V_{CB}	30	Vdc
Emitter-Base Voltate	V_{EB}	5.0	Vdc
Collector Current	I_C	600	mAdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.33 2.64	Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	1.25 10	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J,T_{stg}	-65 to + 200	°C

*Indicates JEDEC Registered Data.



Collector Connected to Case
CASE 22 (1)
(TO-18)

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage[1] (I_C = 100 mAdc, I_B = 0)	$V_{CEO(sus)}$	20	–	Vdc
Collector-Base Breakdown Voltage (I_C = 1.0 mAdc, I_E = 0)	BV_{CBO}	30	–	Vdc
Collector Cutoff Current	I_{CBO}			μAdc
(V_{CB} = 10 Vdc, I_E = 0		–	5.0	
(V_{CB} = 10 Vdc, I_E = 0, T_A = 150°C)		–	200	
Emitter Cutoff Current (V_{EB} = 1.0 Vdc, I_C = 0)	I_{EBO}	–	200	μAdc
ON CHARACTERISTICS				
DC Current Gain[1]	h_{FE}			–
(I_C = 30 mAdc, V_{CE} = 10 Vdc)		15	–	
(I_C = 150 mAdc, V_{CE} = 10 Vdc)		15	60	
Collector-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{CE(sat)}$	–	1.5	Vdc
Base-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc)	$V_{BE(sat)}$	–	1.5	Vdc
SMALL-SIGNAL CHARACTERISTICS				
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)	C_{ob}	–	45	pF
Small-Signal Current Gain (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 20 MHz)	h_{fe}	2.0	–	–

*Indicates JEDEC Registered Data.

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