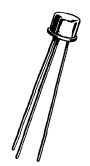
2N656 (SILICON)
2N657

NPN SILICON ANNULAR TRANSISTORS

. . . NPN silicon annular transistor designed for small-signal amplifier and general purpose switching applications.

- High Collector-Emitter Breakdown Voltage –
  BV_{CEO} = 100 Vdc (Min) @ I_C = 250 μAdc – 2N657
- High Emitter-Base Breakdown Voltage –
  BV_{EBO} = 8.0 Vdc (Min) @ I_E = 250 μAdc

NPN SILICON ANNULAR TRANSISTORS



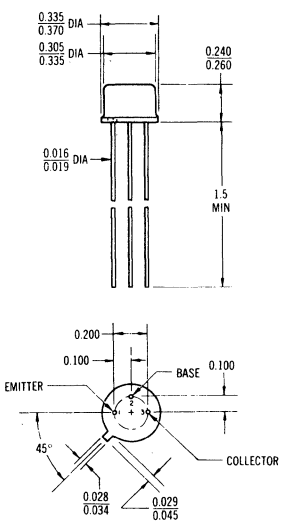
*MAXIMUM RATINGS

Rating	Symbol	2N656	2N657	Unit
Collector-Emitter Voltage	V_{CEO}	60	100	Vdc
Collector-Base Voltage	V_{CB}	60	100	Vdc
Emitter-Base Voltage	V_{EB}	8.0		Vdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	1.0 5.7		Watt mW/°C
Total Device Dissipation @ T_C = 25°C Derate above 25°C	P_D	4.0 22.8		Watts mW/°C
Operating and Storage Junction Temperature Range	T_J,T_{stg}	-65 to +200		°C

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 250 μAdc, I_B = 0)	2N656 2N657	BV_{CEO}	 60 100	 – –	Vdc
Collector-Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)	2N656 2N657	BV_{CBO}	 60 100	 – –	Vdc
Emitter-Base Breakdown Voltage (I_E = 250 μAdc, I_C = 0)		BV_{EBO}	8.0	–	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0)		I_{CBO}	–	10	μAdc
ON CHARACTERISTICS					
DC Current Gain(1) (I_C = 200 mAdc, V_{CE} = 10 Vdc)		h_{FE}	30	90	–
Collector-Emitter Saturation Voltage(1) (I_C = 200 mAdc, I_B = 40 mAdc)		$V_{CE(sat)}$	–	4.0	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Input Impedance(1) (I_B = 8.0 mAdc, V_{CE} = 10 Vdc)		h_{ie}	–	0.5	k ohm

*Indicates JEDEC Registered Data.
(1)Pulse Test: Pulse Length = 300 μs, Duty Cycle ≤ 2.0%.



CASE 31
(TO-5)