2N702 (SILICON)
2N703

NPN silicon annular transistors designed for low-level, high-speed switching applications.

CASE 22
(TO-18)

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	25	Vdc
Collector-Base Voltage	V_{CB}	25	Vdc
Emitter-Base Voltage	V_{EB}	5.0	Vdc
Collector Current	I_C	50	mAdc
Total Device Dissipation @ T_A = 25°C	P_D	300	mW
Derate above 25°C		2.0	mW/°C
Total Device Dissipation @ T_C = 25°C	P_D	600	mW
Derate above 25°C		4.0	mW/°C
Operating and Storage Junction Temperature Range	T_{stg}	-65 to +175	°C

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 2.0 mAdc, I_B = 0)		BV_{CEO}	25	-	-	Vdc
Collector-Base Breakdown Voltage (I_C = 5.0 μAdc, I_E = 0)		BV_{CBO}	25	-	-	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		BV_{EBO}	5.0	-	-	Vdc
Collector Cutoff Current (V_{CE} = 20 Vdc, I_B = 0)		I_{CEO}	-	-	10	μAdc
Collector Cutoff Current (V_{CB} = 10 Vdc, I_E = 0)		I_{CBO}	-	-	0.5	μAdc
(V_{CB} = 10 Vdc, I_E = 0, T_A = +150°C)			-	-	50	
ON CHARACTERISTICS						
DC Current Gain* (I_C = 10 mAdc, V_{CE} = 5.0 Vdc)	2N702	h_{FE}*	20	-	60	-
	2N703		40	-	100	
(I_C = 10 mAdc, V_{CE} = 5.0 Vdc, T_A = -55°C)	2N702		12	-	-	
	2N703		20	-	-	
Collector-Emitter Saturation Voltage* (I_C = 10 mAdc, I_B = 1.0 mAdc)		$V_{CE(sat)}$*	-	-	0.5	Vdc
Base-Emitter On Voltage* (I_C = 10 mAdc, V_{CE} = 5.0 Vdc)		$V_{BE(on)}$*	0.7	-	0.95	Vdc
SMALL-SIGNAL CHARACTERISTICS						
Current-Gain – Bandwidth Product (I_E = 10 mAdc, V_{CE} = 5.0 Vdc, f = 100 MHz)		f_T	70	150		MHz
Output Capacitance (V_{CB} = 5.0 Vdc, I_E = 0, f = 1.0 MHz)		C_{ob}	-	3.0	6.0	pF

*Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2.0%.