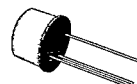


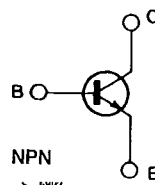
GENERAL PURPOSE AMPLIFIERS

DESCRIPTION

The 2N3700 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case, intended for small signal, low noise industrial applications.



TO-18

INTERNAL SCHEMATIC DIAGRAM**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	140	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	1	A
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25^\circ\text{C}$	0.5	W
	at $T_{case} \leq 25^\circ\text{C}$	1.8	W
	at $T_{case} \leq 100^\circ\text{C}$	1	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

R _{th j-case}	Thermal Resistance Junction-case	Max	97	°C/W
R _{th j-amb}	Thermal Resistance Junction-ambient	Max	350	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CBO}	Collector Cutoff Current (I _E = 0)	V _{CB} = 90 V V _{CB} = 90 V T _{amb} = 150 °C			10 10	nA μA
I _{EBO}	Emitter Cutoff Current (I _C = 0)	V _{EB} = 5 V			10	nA
V _{(BR)CBO}	Collector-base Breakdown Voltage (I _E = 0)	I _C = 100 μA	140			V
V _{(BR)CEO} *	Collector-emitter Breakdown Voltage (I _B = 0)	I _C = 30 mA	80			V
V _{(BR)EBO}	Emitter-base Breakdown Voltage (I _C = 0)	I _E = 100 μA	7			V
V _{CE(sat)} *	Collector-emitter Saturation Voltage	I _C = 150 mA I _B = 15 mA I _C = 500 mA I _B = 50 mA			0.2 0.5	V V
V _{BE(sat)} *	Base-emitter Saturation Voltage	I _C = 150 mA I _B = 15 mA			1.1	V
h _{FE} *	DC Current Gain	I _C = 0.1 mA V _{CE} = 10 V I _C = 10 mA V _{CE} = 10 V I _C = 150 mA V _{CE} = 10 V I _C = 500 mA V _{CE} = 10 V I _C = 1 A V _{CE} = 10 V I _C = 150 mA V _{CE} = 10 V T _{amb} = - 55 °C	50 90 100 50 15 40		300	
h _{fe}	Small Signal Current Gain	I _C = 1 mA V _{CE} = 5 V f = 1 kHz	80		400	
f _T	Transition Frequency	I _C = 50 mA V _{CE} = 10 V f = 20 MHz		100		MHz
C _{EBO}	Emitter-base Capacitance	I _C = 0 V _{EB} = 0.5 V f = 1 MHz		60		pF
C _{CBO}	Collector-base Capacitance	I _E = 0 V _{CB} = 10 V f = 1 MHz		12		pF
r _{bb} ·C _{b'o}	Feedback Time Constant	I _C = 10 mA V _{CB} = 10 V f = 4 MHz	25		400	ps

* Pulsed : pulse duration = 300 μs, duty cycle = 1 %.