

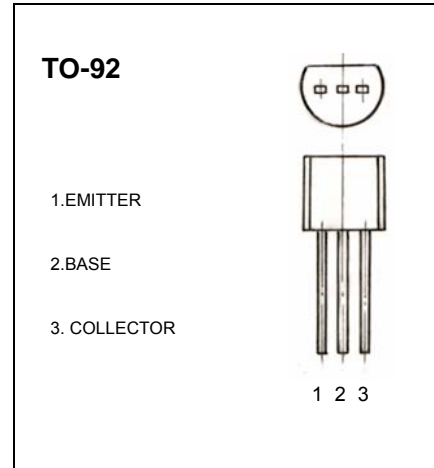
TRANSISTOR (PNP)

FEATURE

- PNP silicon epitaxial planar transistor for switching and Amplifier applications
- As complementary type, the NPN transistor 2N3904 is Recommended
- This transistor is also available in the SOT-23

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

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	-40	V
V _{CE0}	Collector-Emitter Voltage	-40	V
V _{EB0}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-0.2	A
P _C	Collector Power Dissipation	0.625	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

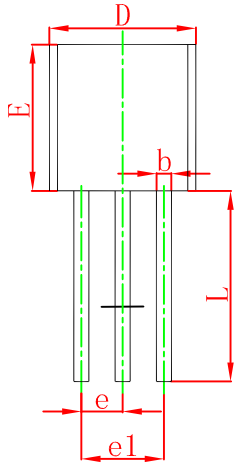
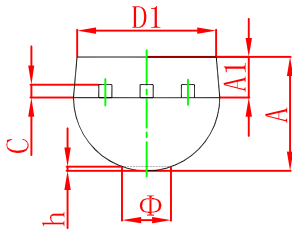

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CB0}	I _C = -10μA, I _E =0	-40			V
Collector-emitter breakdown voltage	V _{(BR)CE0}	I _C = -1mA, I _B =0	-40			V
Emitter-base breakdown voltage	V _{(BR)EB0}	I _E = -10μA, I _C =0	-5			V
Collector cut-off current	I _{CB0}	V _{CB} = -40 V, I _E =0			-0.1	μA
Collector cut-off current	I _{CEx}	V _{CE} = -30 V, V _{BE(off)} = -3V			-50	nA
Emitter cut-off current	I _{EB0}	V _{EB} = -5 V, I _C =0			-0.1	μA
DC current gain	h _{FE1}	V _{CE} = -1 V, I _C = -10mA	100		400	
	h _{FE2}	V _{CE} = -1 V, I _C = -50mA	60			
	h _{FE3}	V _{CE} = -1 V, I _C = -100mA	30			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = -50mA, I _B = -5mA			-0.4	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = -50mA, I _B = -5mA			-0.95	V
Transition frequency	f _T	V _{CE} = -20V, I _C = -10mA f = 100MHz	250			MHz
Delay Time	t _d	V _{CC} = -3V, V _{BE} = -0.5V, I _C = -10mA, I _{B1} = -1mA			35	ns
Rise Time	t _r				35	ns
Storage Time	t _s	V _{CC} = -3V, I _C = -10mA			225	ns
Fall Time	t _f	I _{B1} = I _{B2} = -1mA			75	ns

CLASSIFICATION OF h_{FE1}

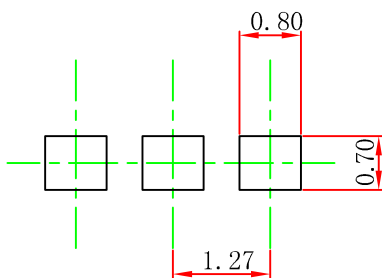
Rank	H
Range	150-400

TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.