PNP SMALL-SIGNAL TRANSISTORS

T-27-21

PNP small-signal transistors in TO-92 envelopes, recommended for general purpose amplifier applications.

The complementary types are the JC500 and JC501 respectively.

QUICK REFERENCE DATA

			JA100	JA101	
Collector-base voltage	$-V_{CBS}$	max.	30	50	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	25	45	V
Collector current (DC)	$-I_C$	max.	100		mA
DC current gain $-I_C$ = 1 mA; $-V_{CE}$ = 5 V	h_{FE}		90 to 600		
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	500		mW

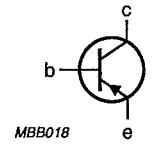
MECHANICAL DATA

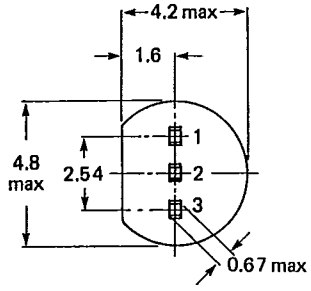
Dimensions in mm

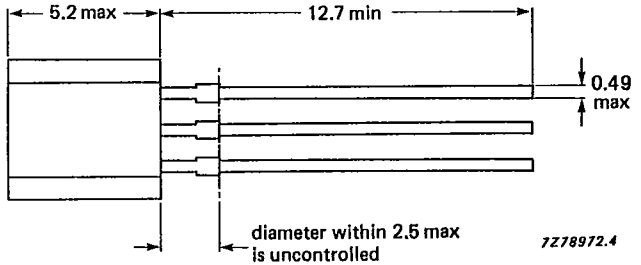
Fig.1 TO-92.

Pinning:

1 = base
2 = collector
3 = emitter







Capability approved to CECC NECC-C-002

T-27-21

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			JA100	JA101	
Collector-base voltage	$-V_{CBS}$	max.	30	50	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	25	45	V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5.0		V
Collector current (DC)	$-I_C$	max.	100		mA
Collector current (peak)	$-I_{CM}$	max.	200		mA
Base current (DC)	$-I_B$	max.	50		mA
Base current (peak)	$-I_{BM}$	max.	100		mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	500		mW
Storage temperature range	T_{stg}		−65 to + 150		°C
Junction temperature	T_j	max.	150		°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\text{-}a}$	=	250	K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

			JA100	JA101	
Collector-emitter breakdown voltage					
$-I_{CES}$ = 10 μA	$-V_{(BR)CES}$	>	30	50	V
$-I_{CEO}$ = 2 mA	$-V_{(BR)CEO}$	>	25	45	V
Emitter-base breakdown voltage					
$-I_{EBO}$ = 10 μA	$-V_{(BR)EBO}$	>	5.0	5.0	V
Collector cut-off current					
$-V_{CE}$ = 25 V	$-I_{CES}$	<	15	–	nA
$-V_{CE}$ = 45 V	$-I_{CES}$	<	–	15	nA
$-V_{CE}$ = 25 V; T_j = 125 °C	$-I_{CES}$	<	4.0	–	μA
$-V_{CE}$ = 45 V; T_j = 125 °C	$-I_{CES}$	<	–	4.0	μA
DC current gain*					
$-I_C$ = 1 mA; $-V_{CE}$ = 5 V	h_{FE}		90 to 600		
Collector-emitter saturation voltage					
$-I_C$ = 10 mA; $-I_B$ = 0.5 mA	$-V_{CE\ sat}$	<	0.3		V
$-I_C$ = 100 mA; $-I_B$ = 5 mA	$-V_{CE\ sat}$	typ.	0.5		V
Base-emitter saturation voltage					
$-I_C$ = 10 mA; $-I_B$ = 0.5 mA	$-V_{BE\ sat}$	typ.	0.7		V
$-I_C$ = 100 mA; $-I_B$ = 5 mA	$-V_{BE\ sat}$	typ.	0.85		V
Base-emitter voltage					
$-I_C$ = 2 mA; $-V_{CE}$ = 5 V	$-V_{BE\ on}$		0.55 to 0.7		V

* Group	O	P	Q	R
Range	90 - 180	135 - 270	200 - 400	300 - 600

Transition frequency at f = 50 MHz; $-I_C$ = 10 mA; $-V_{CE}$ = 5 V	f_T	typ.	130	MHz
Collector-base capacitance $-V_{CBO}$ = 10 V; f = 1 MHz	C_{cb}	<	6.0	pF
Emitter-base capacitance $-V_{EBO}$ = 0.5 V; f = 1 MHz	C_{eb}	typ.	12	pF
Noise figure at R_S = 2 kΩ; f = 1 kHz; $-I_C$ = 200 μA; $-V_{CE}$ = 5 V	NF	<	10	dB