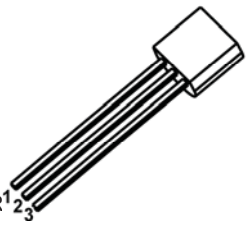
2N4402 TRANSISTOR (PNP)

TO – 92

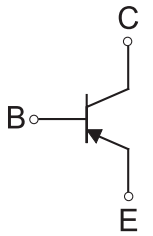
1. EMITTER
2. BASE
3. COLLECTOR



FEATURES

- General Purpose Amplifier Transistor

Equivalent Circuit



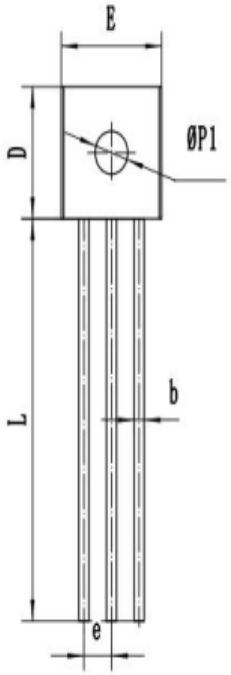
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

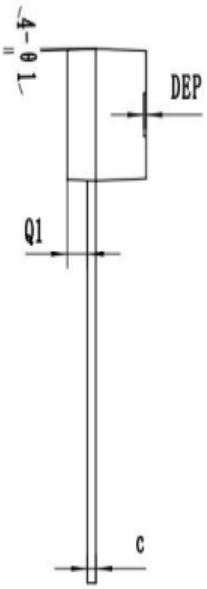
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.6	A
P_D	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	℃ /W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

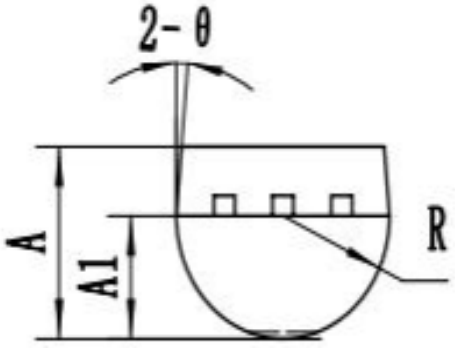
T_a=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -0.1mA,I_E=0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA,I_B=0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-0.1mA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-40V,I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-4V,I_C=0			-0.1	μA
DC current gain	h_{FE}*	V_{CE}=-1V, I_C=-1mA	30			
		V_{CE}=-1V, I_C=-10mA	50			
		V_{CE}=-2V, I_C=-150mA	50		150	
		V_{CE}=-2V, I_C=-500mA	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=-150mA,I_B=-15mA			-0.4	V
		I_C=-500mA,I_B=-50mA			-0.75	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$*	I_C=-150mA,I_B=-15mA	-0.75		-0.95	V
		I_C=-500mA,I_B=-50mA			-1.3	V
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0, f=1MHz			8.5	pF
Emitter input capacitance	C_{ib}	V_{EB}=-0.5V,I_C=0, f=1MHz			30	pF
Transition frequency	f_T	V_{CE}=-10V,I_C=-20mA, f=100MHz	150			MHz

*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.







SYMBOL	MM		
	MIN	NOM	MAX
*A	3.00	3.25	3.50
A1	2.20	2.30	2.40
*b	0.40	0.45	0.50
*c	0.25	0.30	0.35
*D	4.50	4.60	4.70
*E	4.50	4.60	4.70
*e	1.22	1.27	1.32
*L	14.00	14.30	14.60
R	2.20	2.30	2.40
Q1	0.85	0.90	0.95
θ	3°	5°	7°
Ø1	1°	3°	5°
ØP1	1.40	1.50	1.60
DEP	0.05	0.10	0.20
带*为检验尺寸			