



TO-92 Plastic-Encapsulate Transistors

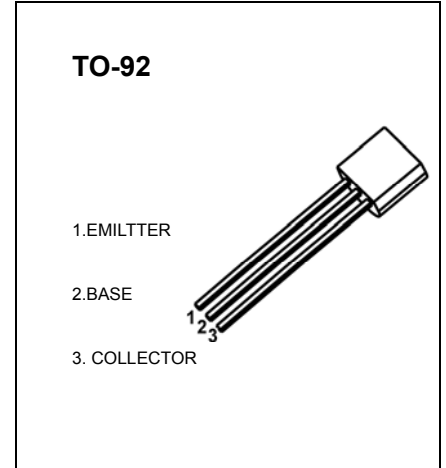
2N4401 TRANSISTOR (NPN)

FEATURES

Power dissipation

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	600	mA
P _C	Collector Power dissipation	0.625	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C
R _{θJA}	Thermal Resistance, junction to Ambient	357	°C/mW



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	60		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 =100μA, I _C =0	6		V
Collector cut-off current	I _{CBO}	V _{CB} =35V, I _E =0		0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0		0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =1V, I _C = 0.1mA	20		
	h _{FE(2)}	V _{CE} =1V, I _C =1mA	40		
	h _{FE(3)}	V _{CE} =1V, I _C = 10mA	80		
	h _{FE(4)}	V _{CE} =1V, I _C =150mA	100	300	
	h _{FE(5)}	V _{CE} =2V, I _C = 500mA	40		
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =150 mA, I _B =15mA		0.4	V
	V _{CE(sat)2}	I _C =500 mA, I _B =50mA		0.75	V
Base-emitter saturation voltage	V _{BE(sat)1}	I _C =150 mA, I _B =15mA		0.95	V
	V _{BE(sat)2}	I _C =500 mA, I _B =50mA		1.2	V
Transition frequency	f _T	V _{CE} = 10V, I _C = 20mA, f=100MHz	250		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, I _E = 0, f=100KHz		6.5	pF
Delay time	t _d	V _{CC} =30V, V _{BE(OFF)} =2V I _C =150mA, I _{B1} =15mA		15	nS
Rise time	t _r			20	nS
Storage time	t _s	V _{CC} =30V, I _C =150mA I _{B1} =-I _{B2} = 15mA		225	nS
Fall time	t _f			30	nS

Typical Characteristics

2N4401

