2N4401

TO-92 Plastic-Encapsulate Transistors

FEATURES

ŏSwitching and amplification in high voltage

ŏApplications such as telephony

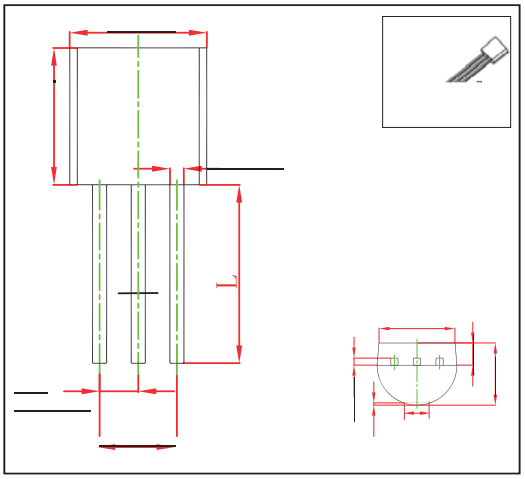
ŏLow current

ŏHigh voltage

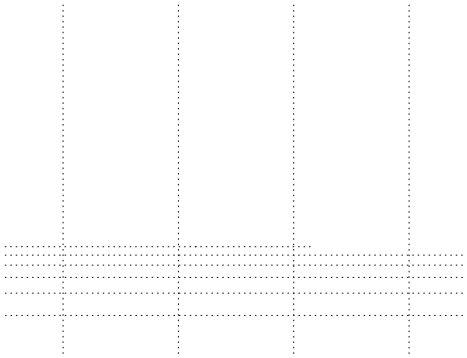
ŏNPN Transistors

MECHANICAL DATA

TO-92



MAXIMUM RATINGS AND CHARACTERISTICS

Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	600	mA
Collector Power dissipation	P_C	0.625	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55～+150	℃
Thermal Resistance, junction to Ambient	$R_{\Theta JA}$	357	℃/mW

Parameter	Symbol	Test conditions	Min	Ma	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C A , I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1 mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E A, I_C=0	6		V
Collector cut-off current	I_{CBO}	V_{CB}=35V, I_E=0		0.1	A
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		0.1	A
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			
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