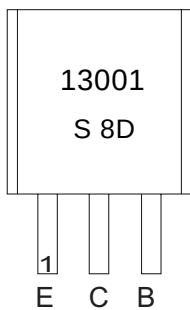


FEATURE

- power switching applications

MARKING

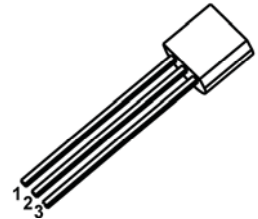


13001=Device code

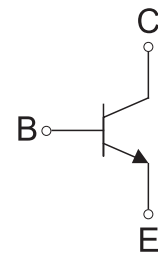
S 8D=Code

TO – 92

1. EMITTER
2. COLLECTOR
3. BASE



Equivalent Circuit



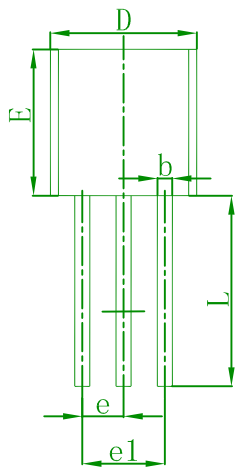
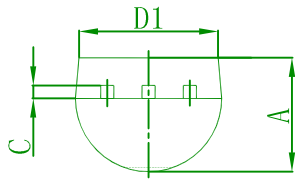
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector -Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	420	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.75	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 ~150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS $T_a=25^{\circ}\text{C}$ unless otherwise specified

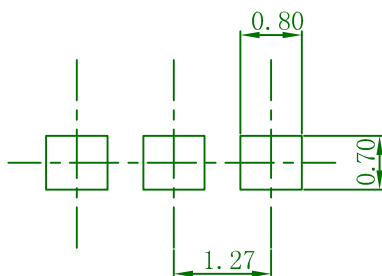
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_E = 0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}$, $I_B = 0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}$, $I_C = 0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB} = 600\text{V}$, $I_E = 0$			100	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 400\text{V}$, $I_B = 0$			200	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 7\text{V}$, $I_C = 0$			100	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = 20\text{V}$, $I_C = 20\text{mA}$	14		30	
	$h_{FE(2)}$	$V_{CE} = 10\text{V}$, $I_C = 0.25\text{mA}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}$, $I_B = 10\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 50\text{mA}$, $I_B = 10\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE} = 20\text{V}$, $I_C = 20\text{mA}$ $f = 1\text{MHz}$	8			MHz
Fall time	t_f	$I_C = 50\text{mA}$, $I_{B1} = -I_{B2} = 5\text{mA}$, $V_{CC} = 45\text{V}$			0.3	μs
Storage time	t_s				1.5	μs

TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A	3.100	3.800
b	0.340	0.550
c	0.300	0.510
D	4.100	4.900
D1	3.700	4.800
E	4.300	4.800
e	1.270 TYP	
e1	2.440	2.640
L	13.100	14.500

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.