



TS13001

High Voltage NPN Transistor

TO-92



Pin assignment:
 1. Emitter
 2. Collector
 3. Base

$BV_{CEO} = 400V$
 $BV_{CBO} = 500V$
 $I_C = 0.1A$
 $V_{CE(SAT)}, = 0.5V @ I_C / I_B = 50mA / 10mA$

Features

- ◇ High voltage.
- ◇ High speed switching

Structure

- ◇ Silicon triple diffused type.
- ◇ NPN silicon transistor

Ordering Information

Part No.	Packing	Package
TS13001CT	Bulk	TO-92

Absolute Maximum Rating ($T_a = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	500V	V
Collector-Emitter Voltage	V_{CEO}	400V	V
Emitter-Base Voltage	V_{EBO}	9	V
Collector Current	DC	I_C	0.1
	Pulse		0.3
Collector Power Dissipation	TO-92	P_D	0.6
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ C$

Note: 1. Single pulse, $P_w = 5mS$, Duty $\leq 10\%$

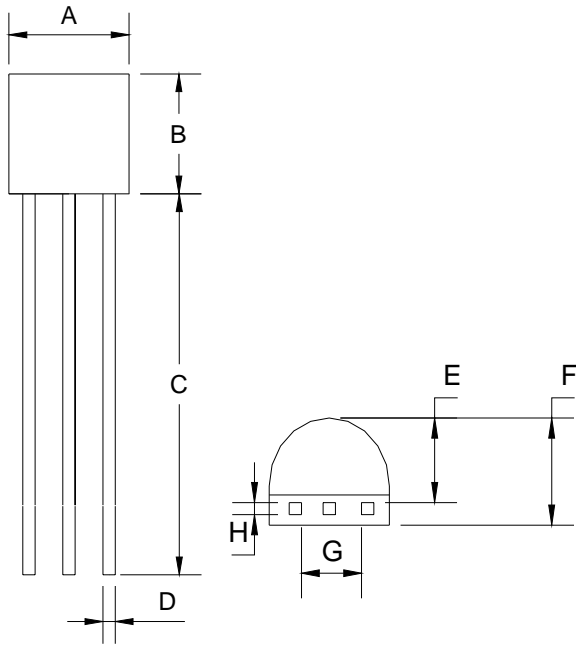
Electrical Characteristics

$T_a = 25^\circ C$ unless otherwise noted

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	$I_C = 10mA, I_B = 0$	BV_{CBO}	500	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 10mA, I_E = 0$	BV_{CEO}	400	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 1mA, I_C = 0$	BV_{EBO}	9	--	--	V
Collector Cutoff Current	$V_{CB} = 500V, I_E = 0$	I_{CBO}	--	--	100	μA
Emitter Cutoff Current	$V_{EB} = 7V, I_C = 0$	I_{EBO}	--	--	0.01	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = 50mA / 10mA$	$V_{CE(SAT)}$	--	--	0.5	V
DC Current Gain	$V_{CE} = 5V, I_C = 20mA$	h_{FE}	10	--	40	
Output Capacitance	$V_{CB} = 10V, f = 0.1MHz$	C_{ob}	--	4	--	pF
Storage Time	$V_{CE} = 250V, I_C = 5 Ib,$ $Ib1=Ib2=40mA$	t_s	--	--	2.0	μS
Fall Time		t_f	--	--	0.8	

Note : pulse test: pulse width $\leq 5mS$, duty cycle $\leq 10\%$

TO-92 Mechanical Drawing



TO-92 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.30	4.70	0.169	0.185
B	4.30	4.70	0.169	0.185
C	14.30(typ)		0.563(typ)	
D	0.43	0.49	0.017	0.019
E	2.19	2.81	0.086	0.111
F	3.30	3.70	0.130	0.146
G	2.42	2.66	0.095	0.105
H	0.37	0.43	0.015	0.017