TS13002

High Voltage NPN Transistor

TO-92

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

BV_{CEO} = 400V
BV_{CBO} = 700V
Ic = 0.2A
$V_{CE\ (SAT)}$, = 0.5V @ Ic / Ib = 100mA / 10mA

Features

- ✧ High voltage.
- ✧ High speed switching

Structure

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

Ordering Information

Part No.	Packing	Package
TS13002CT B0	Bulk	TO-92
TS13002CT A3	AMMO pack	TO-92

Absolute Maximum Rating (Ta = 25 °C unless otherwise noted)

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	700V	V
Collector-Emitter Voltage		V_{CEO}	400V	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	0.2	A
	Pulse		0.5	
Collector Power Dissipation		P_D	0.6	W
Operating Junction Temperature		T_J	+150	°C
Operating Junction and Storage Temperature Range		T_{STG}	- 55 to +150	°C

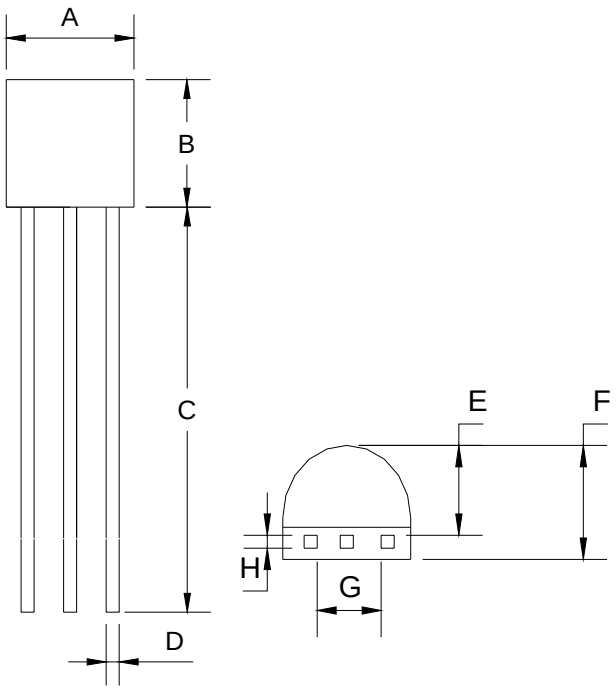
Note: 1. Single pulse, Pw = 5mS, Duty <= 10%

Electrical Characteristics (Ta = 25 °C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	I_C = 10mA, I_B = 0	BV_{CBO}	700	--	--	V
Collector-Emitter Breakdown Voltage	I_C = 1mA, 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} = 700V, I_E = 0	I_{CBO}	--	--	100	uA
Emitter Cutoff Current	V_{EB} = 7V, I_C = 0	I_{EBO}	--	--	10	uA
Collector-Emitter Saturation Voltage	I_C / I_B = 200mA / 20mA	$V_{CE(SAT)1}$	--	--	2.5	V
	I_C / I_B = 100mA / 10mA	$V_{CE(SAT)2}$	--	--	0.5	
DC Current Gain	V_{CE} = 10V, I_C = 10uA	h_{FE}	10	--	40	
DC Current Gain	V_{CE} = 10V, I_C = 100mA	h_{FE}	20	--	40	
DC Current Gain	V_{CE} = 10V, I_C = 200mA	h_{FE}	10	--	40	
Frequency	V_{CE} = 10V, I_C = 0.1A	f_T	4	--	--	MHz
Output Capacitance	V_{CB} = 10V, f = 0.1MHz	Cob	--	21	--	pF
Turn On Time	V_{CC} = 125V, I_C = 100mA,	t_{ON}	--	1.1	--	uS
Storage Time	I_{B1} = I_{B2} = 20mA,	t_{STG}	--	--	4	uS
Fall Time	R_L = 125ohm	t_f	--	--	0.7	uS

Note : pulse test: pulse width <=5mS, duty cycle <=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