

**TO-92**



**Pin Definition:**

1. Emitter
2. Collector
3. Base

**PRODUCT SUMMARY**

$BV_{CEO}$	700V
$BV_{CBO}$	1500V
$I_C$	1A
$V_{CE(SAT)}$	1.0V @ $I_C / I_B = 0.5A / 0.1A$

**Features**

- Very High Voltage
- High Speed Switching

**Structure**

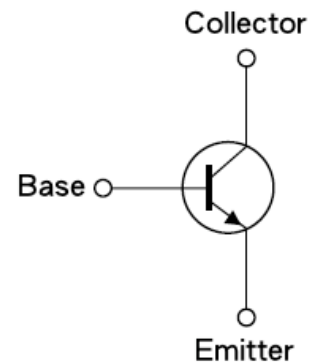
- Silicon Triple Diffused Type
- NPN Silicon Transistor

**Ordering Information**

Part No.	Package	Packing
TSC5401CT B0	TO-92	1Kpcs / Bulk
TSC5401CT B0G	TO-92	1Kpcs / Bulk
TSC5401CT A3	TO-92	2Kpcs / Ammo
TSC5401CT A3G	TO-92	2Kpcs / Ammo

Note: "G" denote for Green Product

**Block Diagram**



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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	1500V	V
Collector-Emitter Voltage	$V_{CEO}$	700V	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	DC	1
		Pulse	2
Base Current	$I_B$	DC	0.5
		Pulse	1
Total Power Dissipation	$P_D$	10	W
Operating Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	$T_{STG}$	- 55 to +150	$^\circ\text{C}$

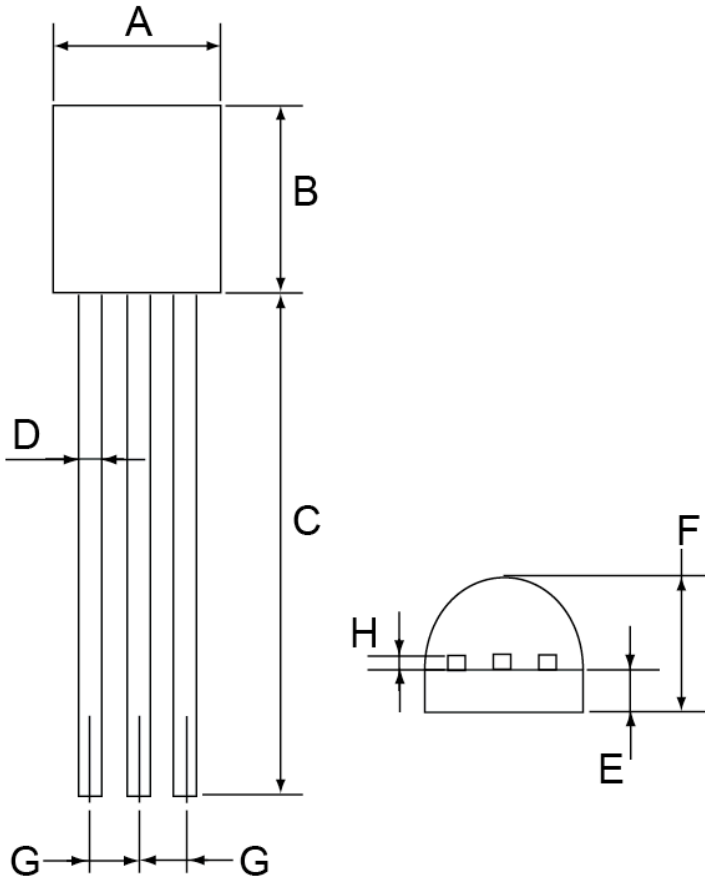
Note: Single Pulse.  $P_W = 300\mu\text{s}$ , Duty  $\leq 2\%$

### Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
<b>Static</b>						
Collector-Base Voltage	$I_C = 1\text{mA}, I_B = 0$	$BV_{CBO}$	1500	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}, I_E = 0$	$BV_{CEO}$	700	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}, I_C = 0$	$BV_{EBO}$	7	--	--	V
Collector Cutoff Current	$V_{CE} = 700\text{V}, I_B = 0$	$I_{CEO}$	--	--	10	uA
Collector Cutoff Current	$V_{CB} = 1300\text{V}, I_E = 0$	$I_{CBO}$	--	--	1	mA
Emitter Cutoff Current	$V_{EB} = 7\text{V}, I_C = 0$	$I_{EBO}$	--	--	10	uA
Collector-Emitter Saturation Voltage	$I_C = 0.2\text{A}, I_B = 0.04\text{A}$	$V_{CE(SAT)1}$	---	--	0.3	V
Collector-Emitter Saturation Voltage	$I_C = 0.5\text{A}, I_B = 0.1\text{A}$	$V_{CE(SAT)2}$	---	--	1.0	V
Base-Emitter Saturation Voltage	$I_C = 0.5\text{A}, I_B = 0.1\text{A}$	$V_{BE(SAT)}$	--	--	1.2	V
DC Current Gain	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	$h_{FE}$	20	--	45	
	$V_{CE} = 5\text{V}, I_C = 500\text{mA}$		5	--		
	$V_{CE} = 5\text{V}, I_C = 1\text{A}$		2	--	--	
<b>Dynamic</b>						
<b>Resistive Load Switching Time (Ratings)</b>						
Rise Time	$V_{CC} = 400\text{V}, I_C = 0.5\text{A},$ $I_{B1} = 0.1, I_{B2} = -0.2\text{A},$ $t_P = 25\text{uS}$	$t_r$		0.4	0.8	uS
Storage Time		$t_{STG}$	--	1.5	3	uS
Fall Time		$t_f$	--	0.25	0.4	uS

Note: pulse test: pulse width  $\leq 300\text{uS}$ , duty cycle  $\leq 2\%$

**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	13.53 (typ)		0.532 (typ)	
D	0.39	0.49	0.015	0.019
E	1.18	1.28	0.046	0.050
F	3.30	3.70	0.130	0.146
G	1.27	1.31	0.050	0.051
H	0.33	0.43	0.013	0.017

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