TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSA894

PNP Silicon Planar High Voltage Transistor

TO-92

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

PRODUCT SUMMARY

BV_{CBO}	-500V
BV_{CEO}	-500V
I_C	-150mA
$V_{CE(SAT)}$	-0.5V @ I_C / I_B = -50mA / -10mA

Features

- Low Saturation Voltages
- Excellent gain characteristics specified up to -50mA

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSA894CT B0	TO-92	1Kpcs / Bulk
TSA894CT A3	TO-92	2Kpcs / Ammo

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

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	-500	V
Collector-Emitter Voltage		V_{CEO}	-500	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current	DC	I_C	-150	mA
	Pulse		-500	
Total Power Dissipation		P_{tot}	1	W
Operating Junction Temperature		T_J	+150	°C
Operating Junction and Storage Temperature Range		T_{STG}	- 55 to +150	°C

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I_C = -100uA, I_E = 0	BV_{CBO}	-500	--	--	V
Collector-Emitter Breakdown Voltage	I_C = -10mA, I_B = 0	BV_{CEO}	-500	--	--	V
Emitter-Base Breakdown Voltage	I_E = -100uA, I_C = 0	BV_{EBO}	-5	--	--	V
Collector Cutoff Current	V_{CB} = 120V, I_E = 0	I_{CBO}	--	--	-100	nA
Emitter Cutoff Current	V_{EB} = 6V, I_C = 0	I_{EBO}	--	--	-100	nA
Collector-Emitter Saturation Voltage	I_C = -20mA, I_B = -2mA	$V_{CE(SAT)}$ 1	--	--	-0.2	V
	I_C = -50mA, I_B = -10mA	$V_{CE(SAT)}$ 2		--	-0.5	
Base-Emitter Saturation Voltage	I_C = -50mA, I_B = -10mA	$V_{BE(SAT)}$	--	--	-0.9	V
Base-Emitter on Voltage	V_{CE} = -10V, I_C = -50mA	$V_{BE(ON)}$	--	--	-0.9	V
DC Current Transfer Ratio	V_{CE} = -10V, I_C = -1mA	h_{FE} 1	150	--	300	
	V_{CE} = -10V, I_C = -50mA	h_{FE} 2	80	--	300	
	V_{CE} = -10V, I_C = -100mA	h_{FE} 3	--	15	--	
Transition Frequency	V_{CE} =10V, I_C=-100mA	f_T	--	50	--	MHz
Output Capacitance	V_{CB} = 20V, f=1MHz	Cob	--	--	8	pF
Turn On Time	V_{CE} = -100V, I_C = -50mA	Ton	--	110	--	nS
Turn Off Time	I_{B1}=-5mA, I_{B2}=-10mA	Toff	--	1500	--	nS

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

Figure 1. Static Characteristics

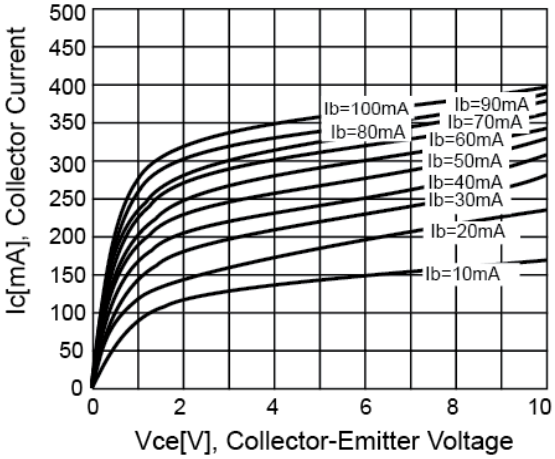


Figure 2. DC Current Gain

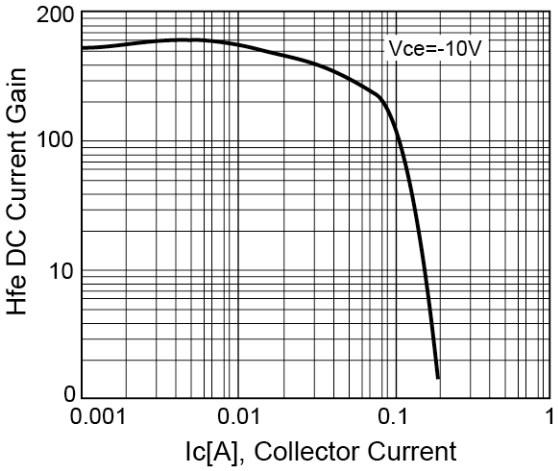


Figure 3. $V_{CE(SAT)}$ v.s. $V_{BE(SAT)}$

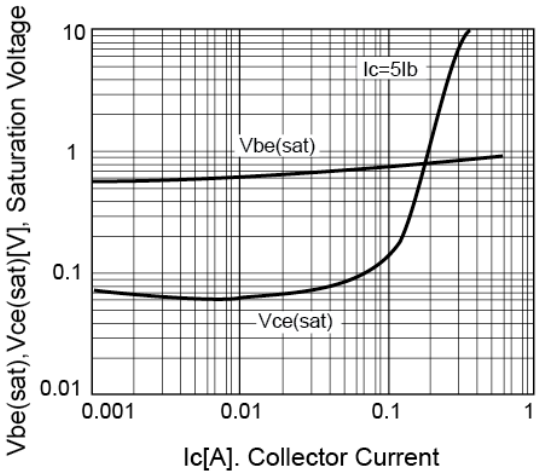


Figure 4. Power Derating

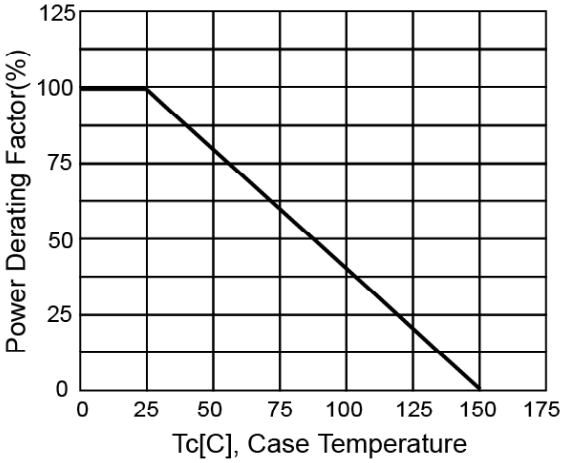
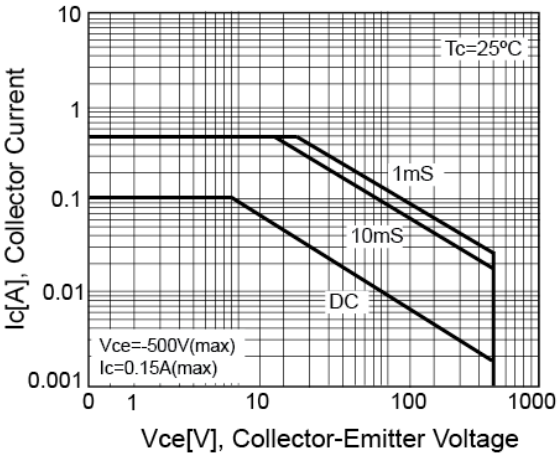


Figure 5. Safety Operation Area



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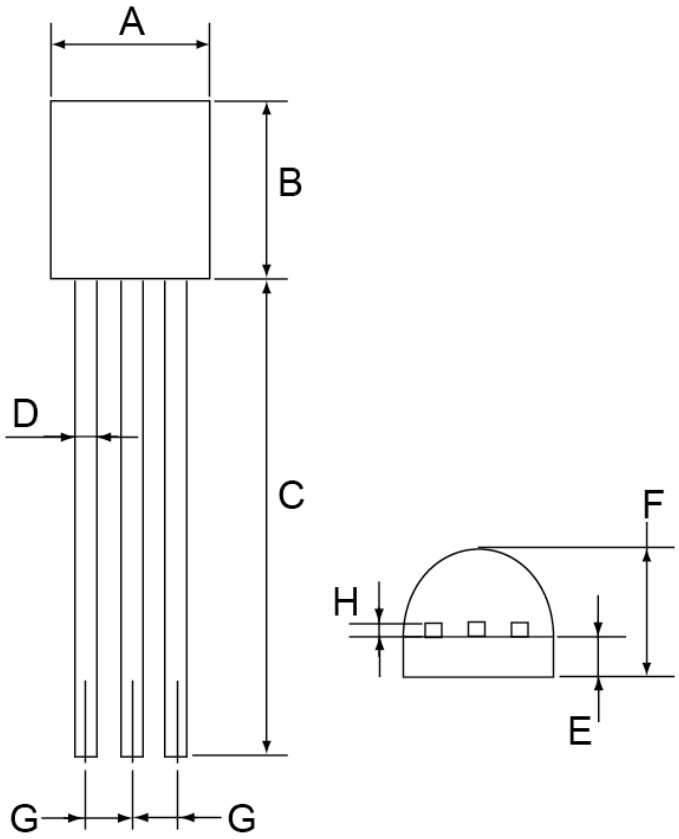
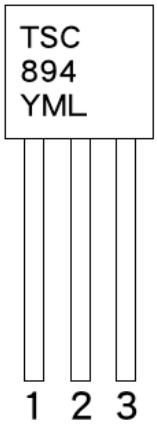
TO-92 Mechanical Drawing



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	12.70	15.49	0.500	0.609
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

Marking Diagram



Y = Year Code
M = Month Code
(**A**=Jan, **B**=Feb, **C**=Mar, **D**=Apl, **E**=May, **F**=Jun, **G**=Jul, **H**=Aug, **I**=Sep, **J**=Oct, **K**=Nov, **L**=Dec)
L = Lot Code

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