

## PNP Silicon Planar High Voltage Transistor

**SOT-23**

**Pin Definition:**

1. Base
2. Emitter
3. Collector

**PRODUCT SUMMARY**

<b>BV<sub>CBO</sub></b>	-500V
<b>BV<sub>CEO</sub></b>	-500V
<b>I<sub>C</sub></b>	-150mA
<b>V<sub>CE(SAT)</sub></b>	-0.5V @ I <sub>C</sub> / I <sub>B</sub> = -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
TSA884CX RFG	SOT-23	3Kpcs / 7" Reel

**Note:** "G" denotes for Halogen Free

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

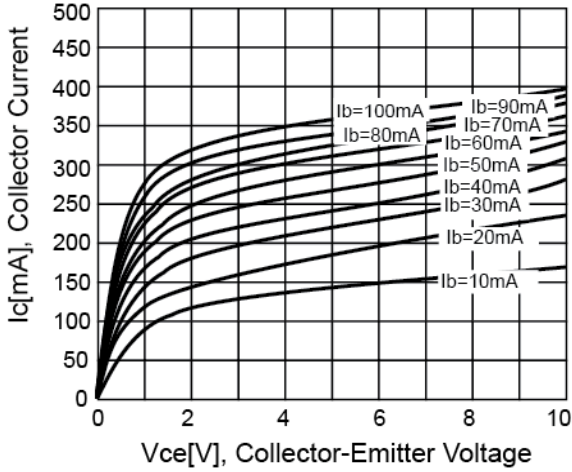
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-500	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-500	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	DC	-150	mA
	Pulse	-500	
Total Power Dissipation	P <sub>TOT</sub>	0.3	W
Operating Junction Temperature	T <sub>J</sub>	+150	°C
Operating Junction and Storage Temperature Range	T <sub>STG</sub>	- 55 to +150	°C

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

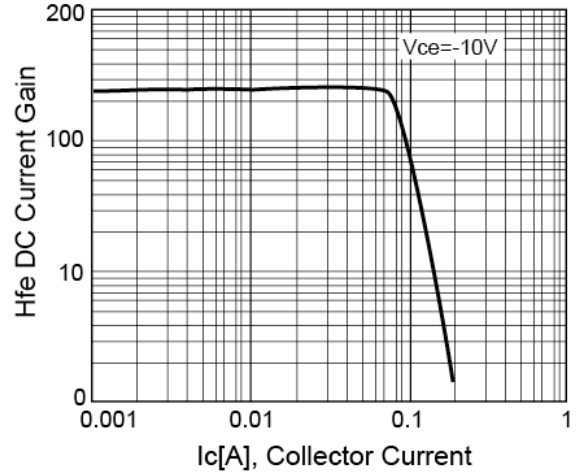
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I <sub>C</sub> = -100uA, I <sub>E</sub> = 0	BV <sub>CBO</sub>	-500	--	--	V
Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -10mA, I <sub>B</sub> = 0	BV <sub>CEO</sub>	-500	--	--	V
Emitter-Base Breakdown Voltage	I <sub>E</sub> = -100uA, I <sub>C</sub> = 0	BV <sub>EBO</sub>	-5	--	--	V
Collector Cutoff Current	V <sub>CB</sub> = 120V, I <sub>E</sub> = 0	I <sub>CBO</sub>	--	--	-100	nA
Emitter Cutoff Current	V <sub>EB</sub> = 6V, I <sub>C</sub> = 0	I <sub>EBO</sub>	--	--	-100	nA
Collector-Emitter Saturation Voltage	I <sub>C</sub> = -20mA, I <sub>B</sub> = -2mA	V <sub>CE(SAT)</sub> 1	--	--	-0.2	V
	I <sub>C</sub> = -50mA, I <sub>B</sub> = -10mA	V <sub>CE(SAT)</sub> 2	--	--	-0.5	
Base-Emitter Saturation Voltage	I <sub>C</sub> = -50mA, I <sub>B</sub> = -10mA	V <sub>BE(SAT)</sub>	--	--	-0.9	V
Base-Emitter on Voltage	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA	V <sub>BE(ON)</sub>	--	--	-0.9	V
DC Current Transfer Ratio	V <sub>CE</sub> = -10V, I <sub>C</sub> = -1mA	h <sub>FE</sub> 1	150	--	300	
	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA	h <sub>FE</sub> 2	80	--	300	
	V <sub>CE</sub> = -10V, I <sub>C</sub> = -100mA	h <sub>FE</sub> 3	--	15	--	
Transition Frequency	V <sub>CE</sub> = 10V, I <sub>C</sub> = -100mA	f <sub>T</sub>	--	50	--	MHz
Output Capacitance	V <sub>CB</sub> = 20V, f = 1MHz	Cob	--	--	8	pF
Turn On Time	V <sub>CE</sub> = -100V, I <sub>C</sub> = -50mA	Ton	--	110	--	nS
Turn Off Time	I <sub>B1</sub> = -5mA, I <sub>B2</sub> = -10mA	Toff	--	1500	--	nS

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

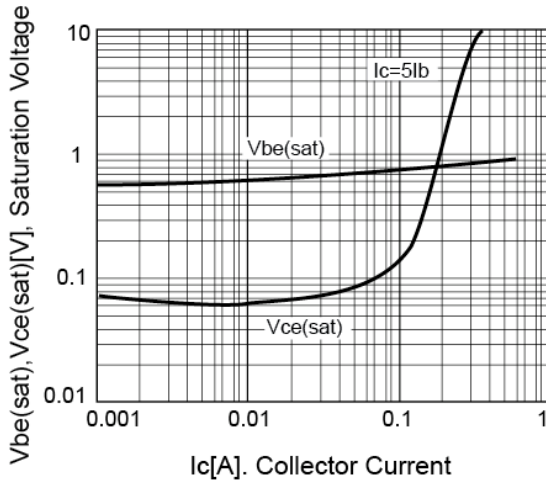
**Figure 1. Static Characteristics**



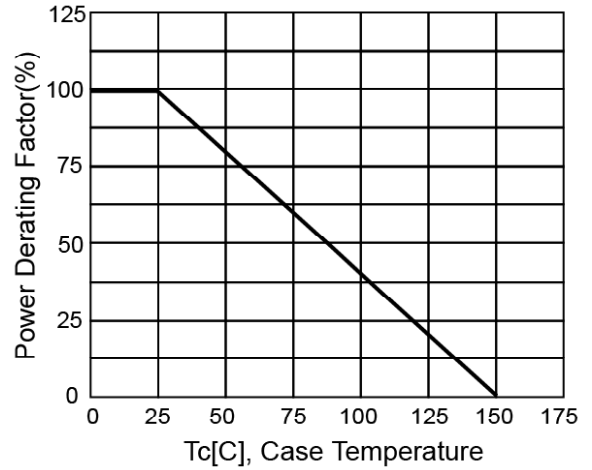
**Figure 2. DC Current Gain**



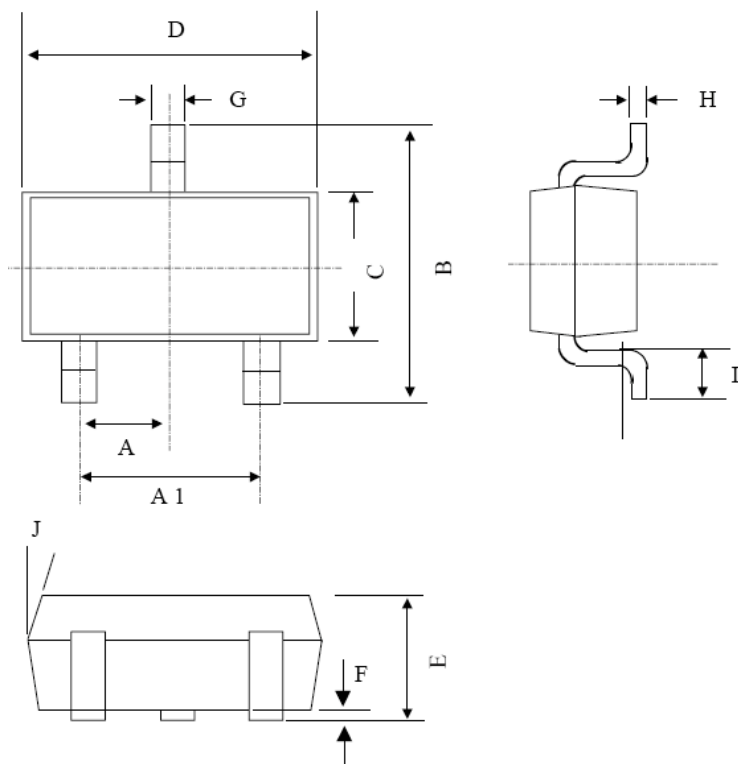
**Figure 3.  $V_{CE(SAT)}$  v.s.  $V_{BE(SAT)}$**



**Figure 4. Power Derating**

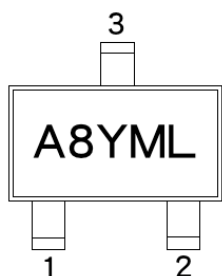


**SOT-23 Mechanical Drawing**



SOT-23 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX.
A	0.95 BSC		0.037 BSC	
A1	1.9 BSC		0.074 BSC	
B	2.60	3.00	0.102	0.118
C	1.40	1.70	0.055	0.067
D	2.80	3.10	0.110	0.122
E	1.00	1.30	0.039	0.051
F	0.00	0.10	0.000	0.004
G	0.35	0.50	0.014	0.020
H	0.10	0.20	0.004	0.008
I	0.30	0.60	0.012	0.024
J	5°	10°	5°	10°

**Marking Diagram**



- A8** = Device Code
- Y** = Year Code
- M** = Month Code for Halogen Free Product
  - O** =Jan    **P** =Feb    **Q** =Mar    **R** =Apr
  - S** =May    **T** =Jun    **U** =Jul    **V** =Aug
  - W** =Sep    **X** =Oct    **Y** =Nov    **Z** =Dec
- L** = Lot Code

# TSA884

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