

## PNP Silicon Planar High Voltage Transistor

### SOT-223



### Pin Definition:

1. Base
2. Collector
3. Emitter

### 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
TSA874CW RP	SOT-223	2.5Kpcs / 13" Reel

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

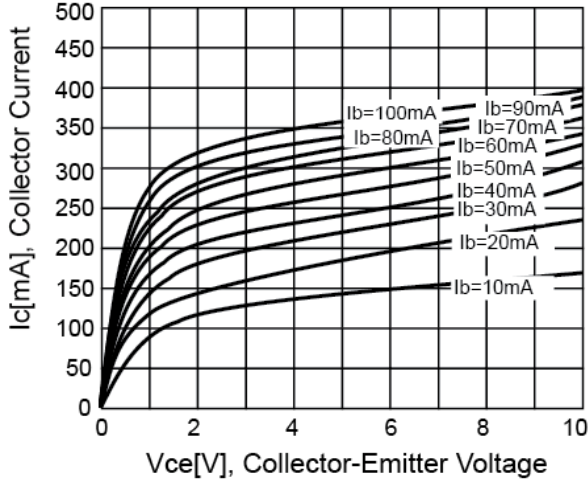
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	-500	V
Collector-Emitter Voltage	$V_{CEO}$	-500	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	DC	-150	mA
	Pulse	-500	
Total Power Dissipation	$P_{tot}$	1	W
Operating Junction Temperature	$T_J$	+150	°C
Operating Junction and Storage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

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

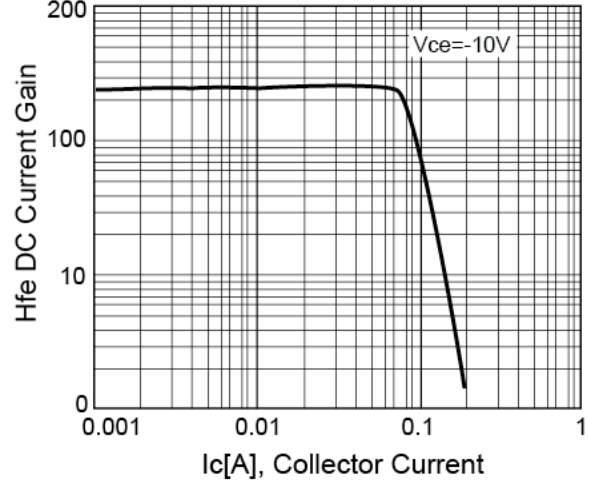
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = -100\mu A, I_E = 0$	$BV_{CBO}$	-500	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -10mA, I_B = 0$	$BV_{CEO}$	-500	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -100\mu A, I_C = 0$	$BV_{EBO}$	-5	--	--	V
Collector 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	$V_{CE} = -10V, I_C = -1mA$	$h_{FE 1}$	100	--	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	$V_{CB} = 20V, f = 1MHz$	$C_{ob}$	--	--	8	pF
Turn On Time	$V_{CE} = -100V, I_C = -50mA$	$T_{on}$	--	110	--	nS
Turn Off Time	$I_{B1} = -5mA, I_{B2} = -10mA$	$T_{off}$	--	1500	--	nS

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

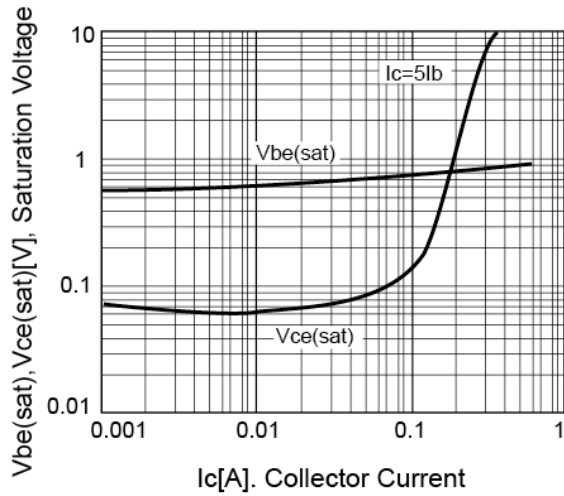
**Figure 1. Static Characteristics**



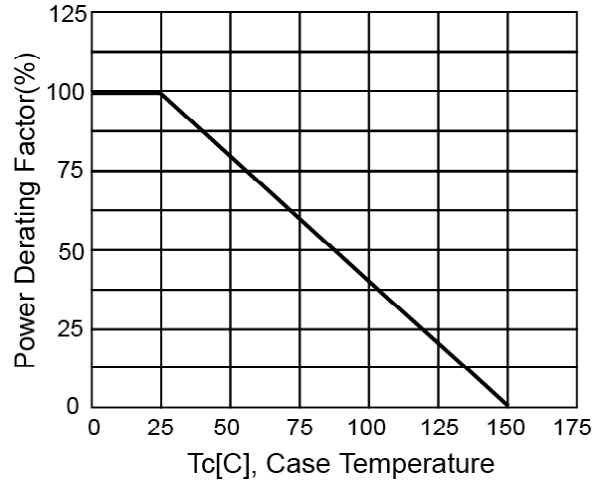
**Figure 2. DC Current Gain**



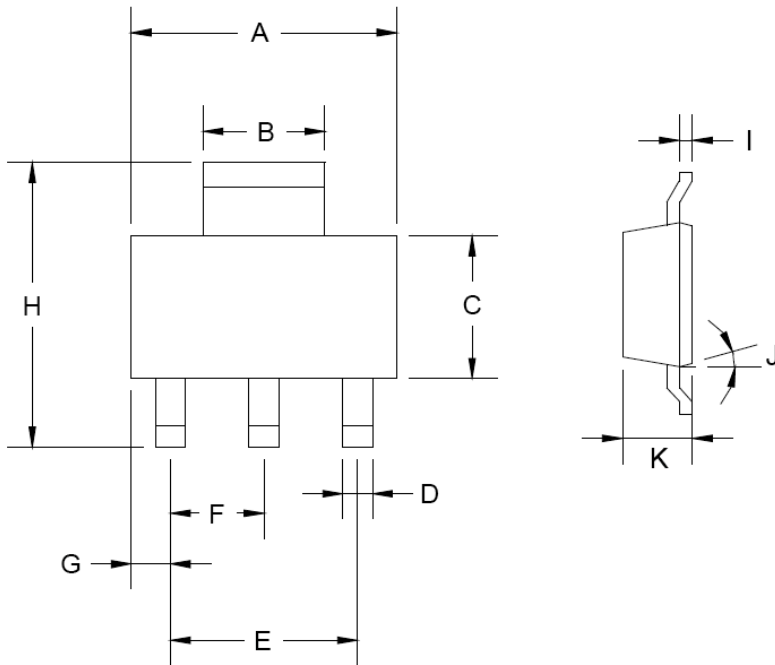
**Figure 3.  $V_{CE(SAT)}$  v.s.  $V_{BE(SAT)}$**



**Figure 4. Power Derating**

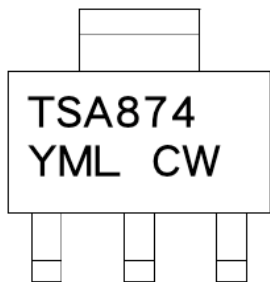


**SOT-223 Mechanical Drawing**



SOT-223 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.350	6.850	0.250	0.270
B	2.900	3.100	0.114	0.122
C	3.450	3.750	0.136	0.148
D	0.595	0.635	0.023	0.025
E	4.550	4.650	0.179	0.183
F	2.250	2.350	0.088	0.093
G	0.835	1.035	0.032	0.041
H	6.700	7.300	0.263	0.287
I	0.250	0.355	0.010	0.014
J	10°	16°	10°	16°
K	1.550	1.800	0.061	0.071

**Marking Diagram**



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

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