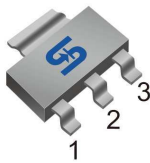


## High Voltage PNP Epitaxial Planar Transistor

SOT-223



Pin Definition:

1. Base
2. Collector
3. Emitter

### PRODUCT SUMMARY

$BV_{CBO}$	-600V
$BV_{CEO}$	-560V
$I_C$	-150mA
$V_{CE(SAT)}$	-0.5V @ $I_C / I_B = -50mA / -10mA$

### Features

- Low Saturation Voltages
- High Breakdown Voltage

### Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

### Ordering Information

Part No.	Package	Packing
TSA1765CW RP	SOT-223	2.5Kpcs / 13" Reel

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

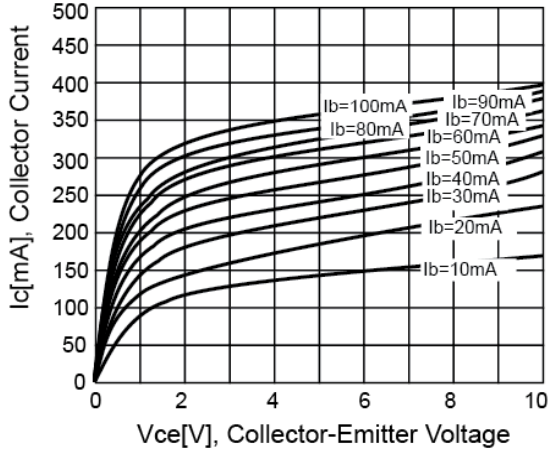
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	-600	V
Collector-Emitter Voltage	$V_{CEO}$	-560	V
Emitter-Base Voltage	$V_{EBO}$	-7	V
Collector Current	$I_C$	-150	mA
Collector Current(Pulse)	$I_{CP}$	-500	
Base Current	$I_B$	-50	
Total Power Dissipation @ $T_C=25^\circ\text{C}$	$P_{tot}$	2	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)

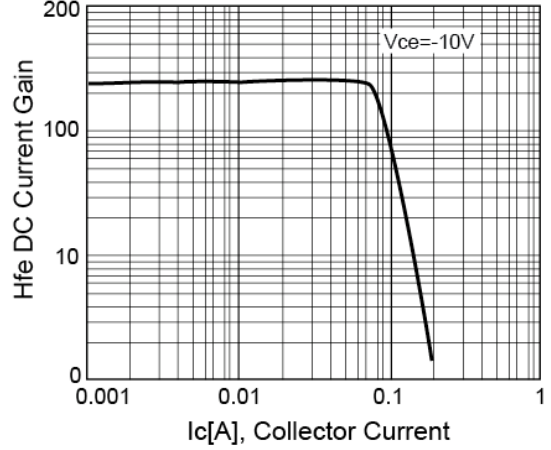
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = -1mA, I_E = 0$	$BV_{CBO}$	-600	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -1mA, I_B = 0$	$BV_{CEO}$	-560	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -10\mu A, I_C = 0$	$BV_{EBO}$	-7	--	--	V
Collector Cutoff Current	$V_{CB} = -600V, I_E = 0$	$I_{CBO}$	--	--	-100	nA
Emitter Cutoff Current	$V_{EB} = -7V, I_C = 0$	$I_{EBO}$	--	--	-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	$I_C = -50mA, I_B = -10mA$	$V_{BE(SAT) 1}$	--	--	-1.0	V
Base-Emitter on Voltage	$V_{CE} = -10V, I_C = -50mA$	$V_{BE(ON)}$	--	--	-1.0	V
DC Current Transfer Ratio	$V_{CE} = -10V, I_C = -1mA$	$h_{FE 1}$	150	--	--	
	$V_{CE} = -10V, I_C = -50mA$	$h_{FE 2}$	80	--	300	
	$V_{CE} = -10V, I_C = -100mA$	$h_{FE 3}$	--	15--	--	
Transition Frequency	$V_{CE} = -20V, I_E = -10mA$	$f_T$	50	--	--	MHz
Output Capacitance	$V_{CB} = -20V, f = 1MHz$	$C_{ob}$	--	--	8	pF

**Electrical Characteristics Curve** ( $T_a = 25^\circ\text{C}$ , unless otherwise noted)

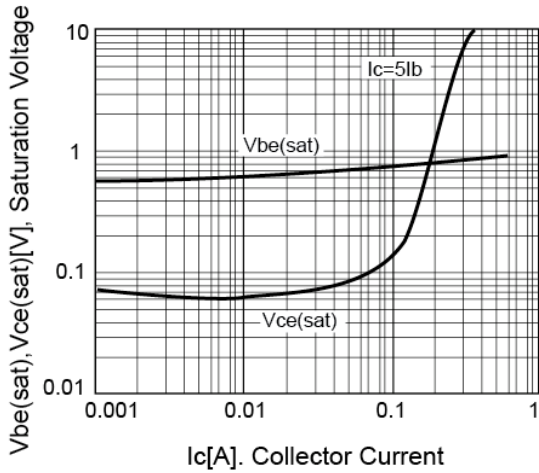
**Figure 1. Static Characteristics**



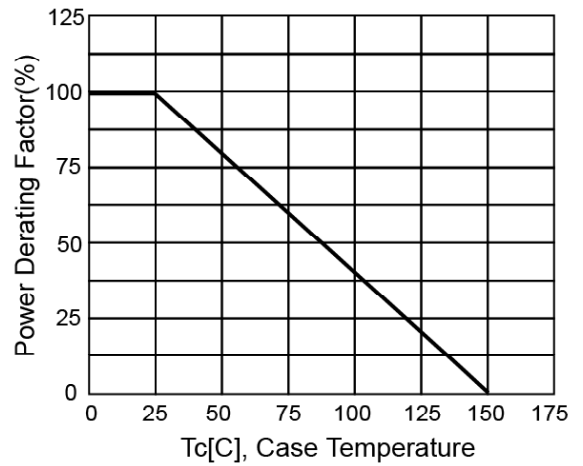
**Figure 2. DC Current Gain**



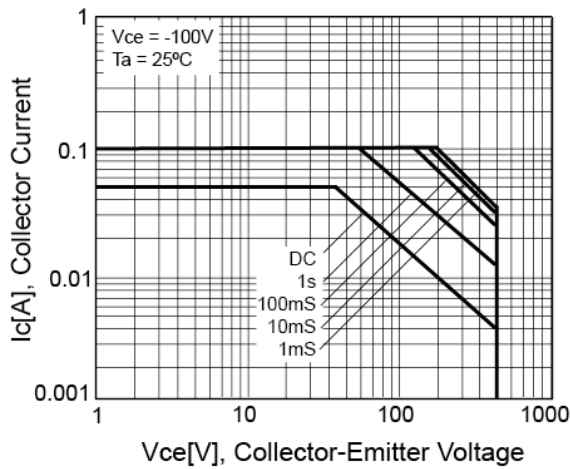
**Figure 3. VCE(SAT) v.s. VBE(SAT)**



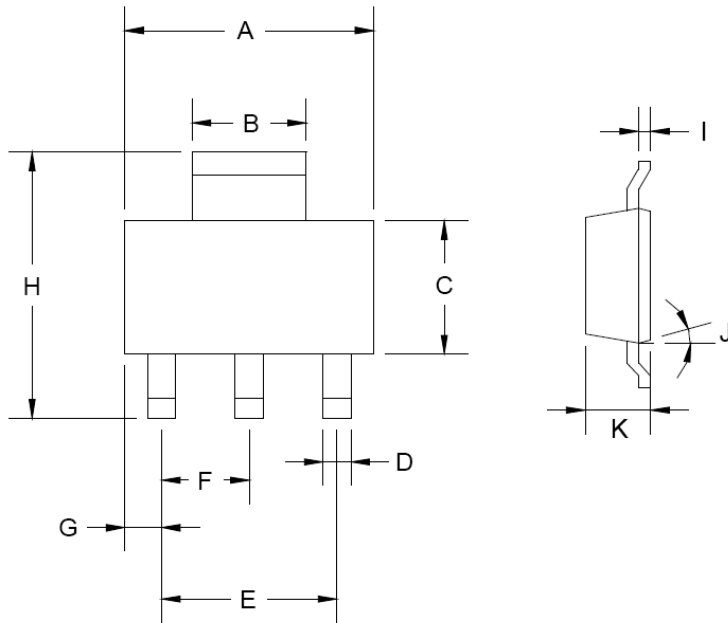
**Figure 4. Power Derating**



**Figure 5. Safety Operation Area**

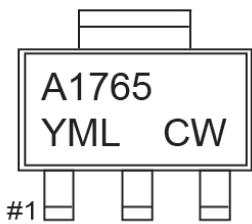


**SOT-223 Mechanical Drawing**



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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