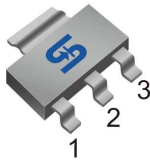


# High Voltage PNP Epitaxial Planar Transistor

**SOT-223**

**Pin Definition:**

1. Base
2. Collector
3. Emitter

**PRODUCT SUMMARY**

<b>BV<sub>CBO</sub></b>	-560V
<b>BV<sub>CEO</sub></b>	-560V
<b>I<sub>C</sub></b>	-150mA
<b>V<sub>CE(SAT)</sub></b>	-0.5V @ I <sub>C</sub> =-50mA, I <sub>B</sub> =-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)

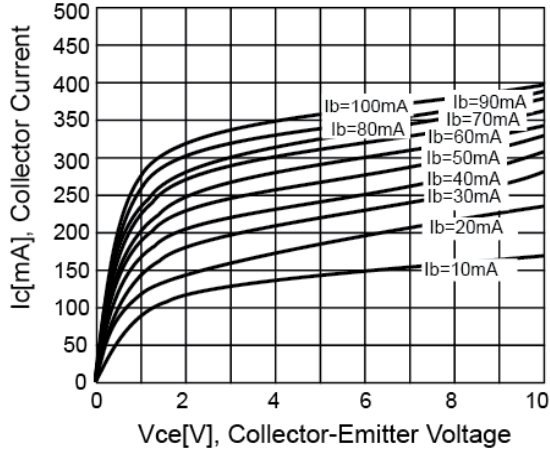
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-560	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-560	V
Emitter-Base Voltage	V <sub>EBO</sub>	-7	V
Collector Current	I <sub>C</sub>	-150	mA
Collector Current(Pulse)	I <sub>CP</sub>	-500	
Base Current	I <sub>B</sub>	-50	
Total Power Dissipation @ T <sub>C</sub> =25°C	P <sub>tot</sub>	2	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)

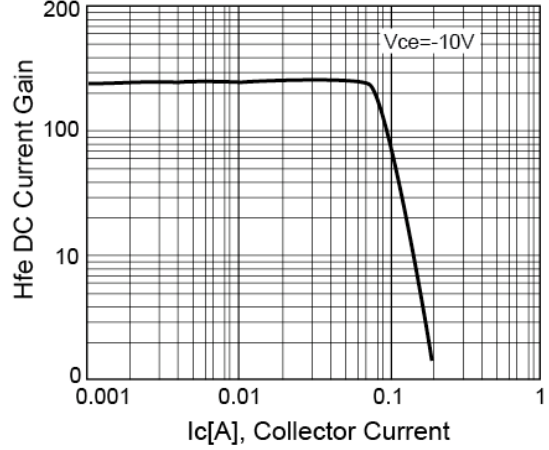
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I <sub>C</sub> = -1mA, I <sub>E</sub> = 0	BV <sub>CBO</sub>	-560	--	--	V
Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -1mA, I <sub>B</sub> = 0	BV <sub>CEO</sub>	-560	--	--	V
Emitter-Base Breakdown Voltage	I <sub>E</sub> = -10uA, I <sub>C</sub> = 0	BV <sub>EBO</sub>	-7	--	--	V
Collector Cutoff Current	V <sub>CB</sub> = -560V, I <sub>E</sub> = 0	I <sub>CBO</sub>	--	--	-100	nA
Emitter Cutoff Current	V <sub>EB</sub> = -7V, 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> 1	--	--	-1.0	V
Base-Emitter on Voltage	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA	V <sub>BE(ON)</sub>	--	--	-1.0	V
DC Current Transfer Ratio	V <sub>CE</sub> = -10V, I <sub>C</sub> = -1mA	h <sub>FE</sub> 1	150	--	--	
	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> = -20V, I <sub>E</sub> =-10mA	f <sub>T</sub>	50	--	--	MHz
Output Capacitance	V <sub>CB</sub> = -20V, f=1MHz	Cob	--	--	8	pF

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

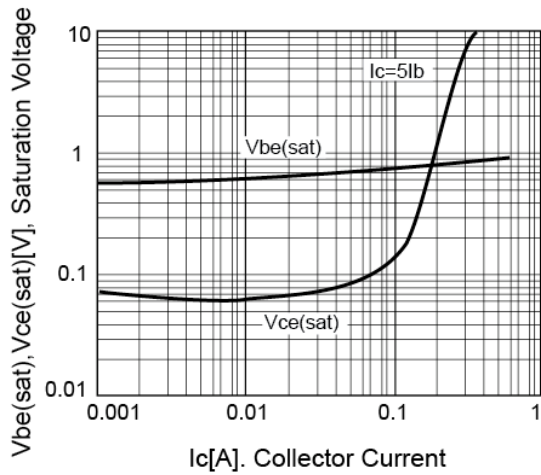
**Figure 1. Static Characteristics**



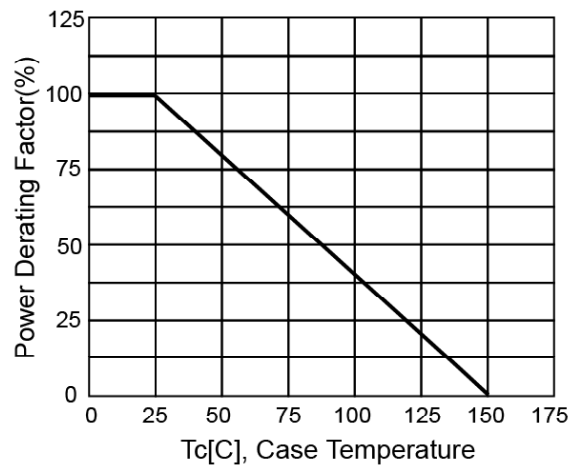
**Figure 2. DC Current Gain**



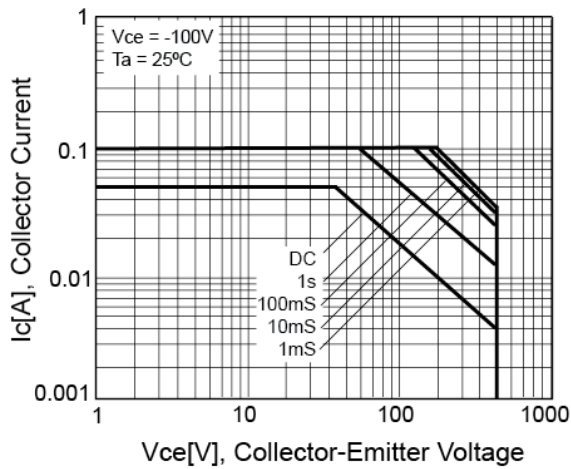
**Figure 3.  $V_{ce(sat)}$  v.s.  $V_{be(sat)}$**



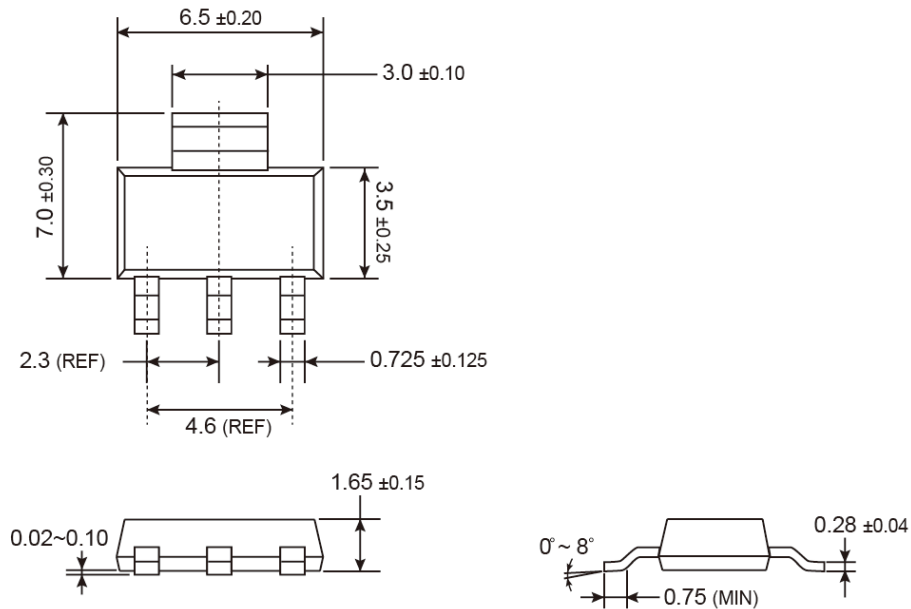
**Figure 4. Power Derating**



**Figure 5. Safety Operation Area**

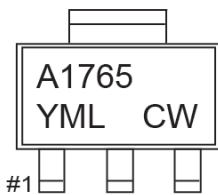


## SOT-223 Mechanical Drawing



Unit: Millimeters

## 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

# **TSA1765**

## High Voltage PNP Epitaxial Planar Transistor

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