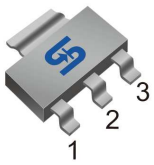
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSA1765

High Voltage PNP Epitaxial Planar Transistor

SOT-223



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

PRODUCT SUMMARY

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

Features

- Low Saturation Voltages
- High Breakdown Voltage

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSA1765CW RPG	SOT-223	2.5Kpcs / 13” Reel

Note: “G” denotes for Halogen Free

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-560	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=25ºC	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}	-560	--	--	V
Collector-Emitter Breakdown Voltage	I_C = -1mA, I_B = 0	BV_{CEO}	-560	--	--	V
Emitter-Base Breakdown Voltage	I_E = -10uA, I_C = 0	BV_{EBO}	-7	--	--	V
Collector Cutoff Current	V_{CB} = -560V, 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	Cob	--	--	8	pF

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

Figure 1. Static Characteristics

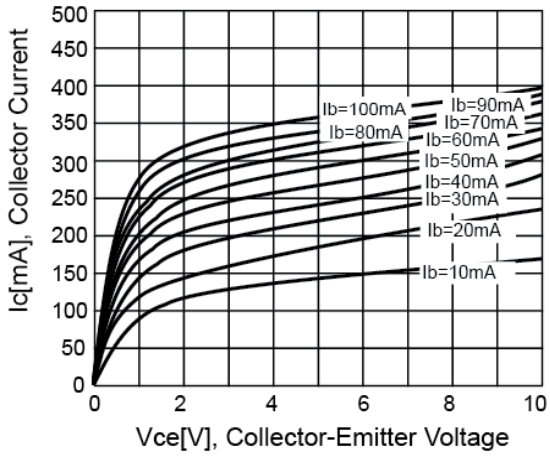


Figure 2. DC Current Gain

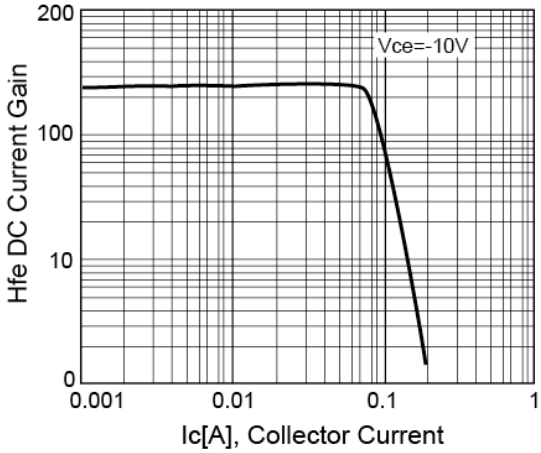


Figure 3. VCE(SAT) v.s. VBE(SAT)

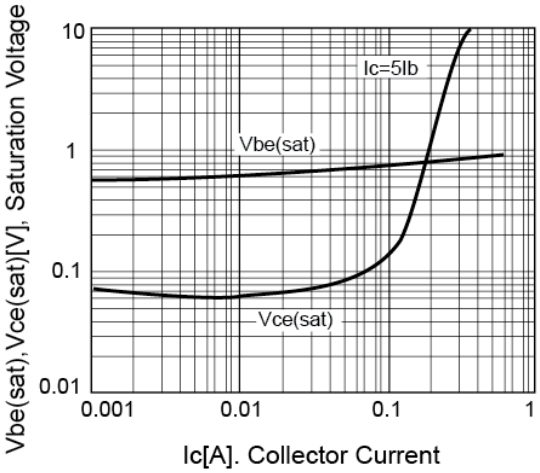


Figure 4. Power Derating

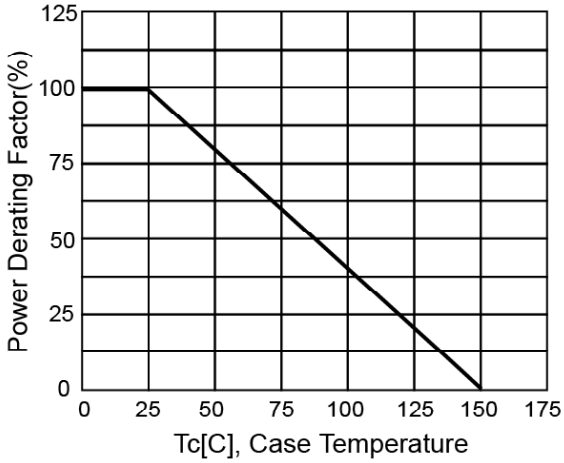
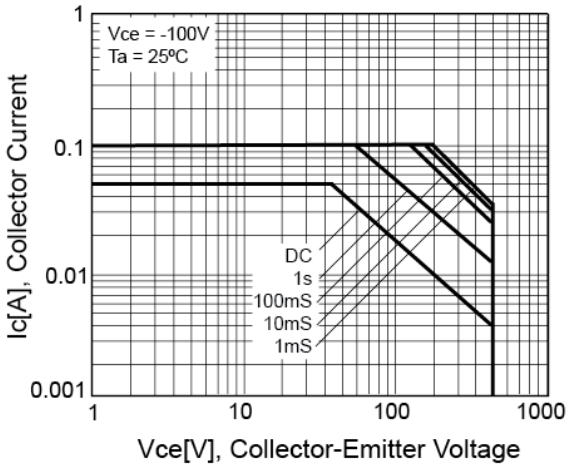


Figure 5. Safety Operation Area



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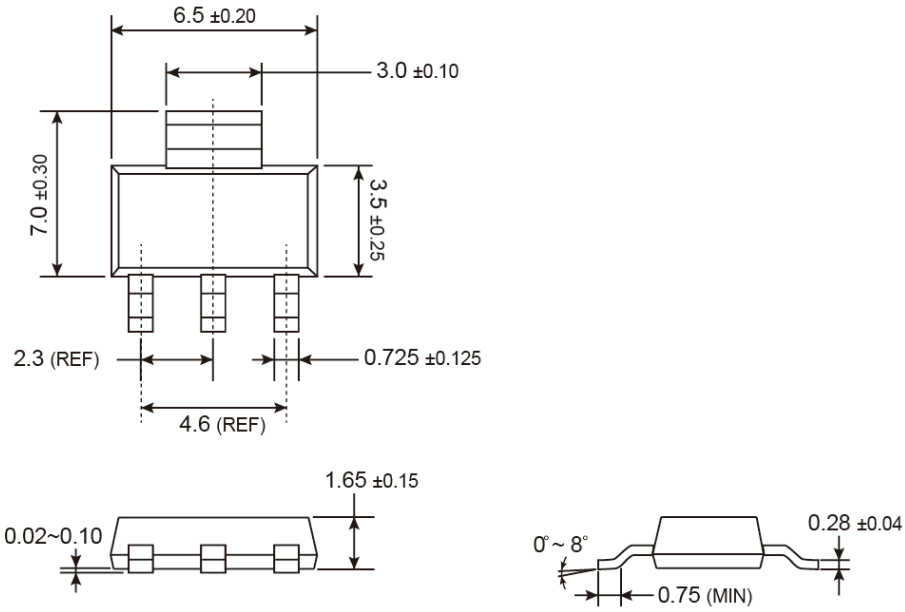
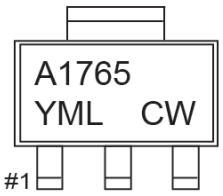
SOT-223 Mechanical Drawing



Unit: Millimeters

Marking Diagram



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

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