TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSA874

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

Ordering Information

Part No.	Package	Packing
TSA874CW RP	SOT-223	2.5Kpcs / 13" Reel

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

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	I_C	-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 = -100uA, 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 = -100uA, 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	150	--	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	Cob	--	--	8	pF
Turn On Time	V_{CE} = -100V, I_C = -50mA	Ton	--	110	--	nS
Turn Off Time	I_{B1}=-5mA, I_{B2}=-10mA	Toff	--	1500	--	nS

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

Figure 1. Static Characteristics

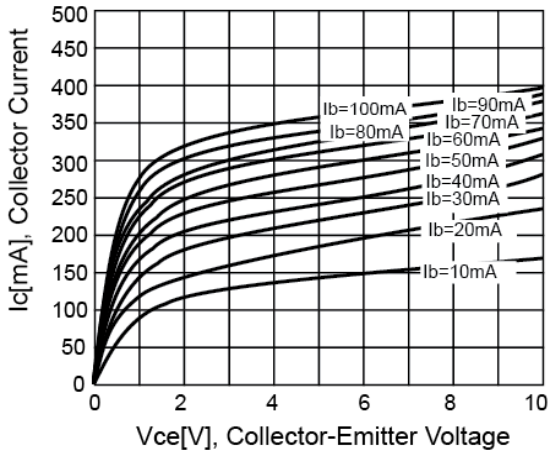


Figure 2. DC Current Gain

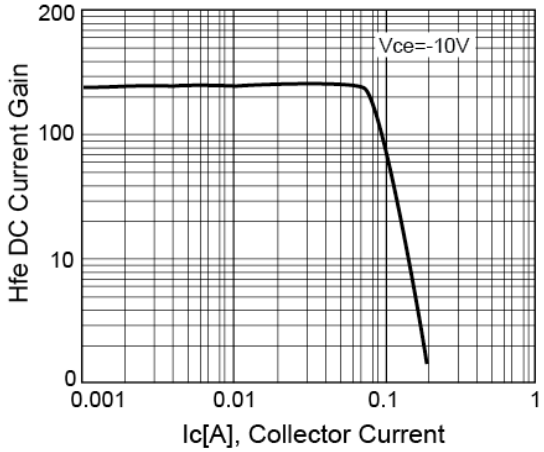


Figure 3. VCE(SAT) v.s. VBE(SAT

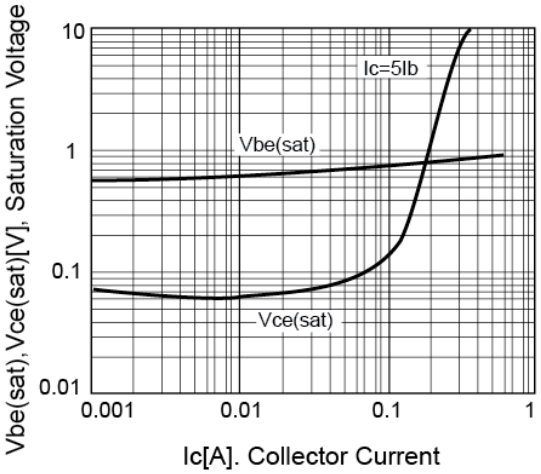


Figure 4. Power Derating

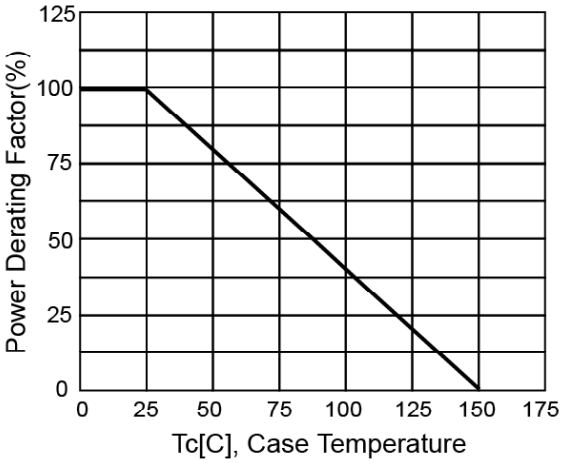
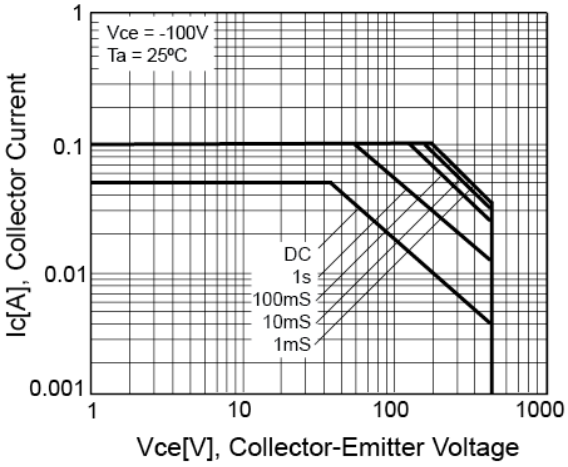


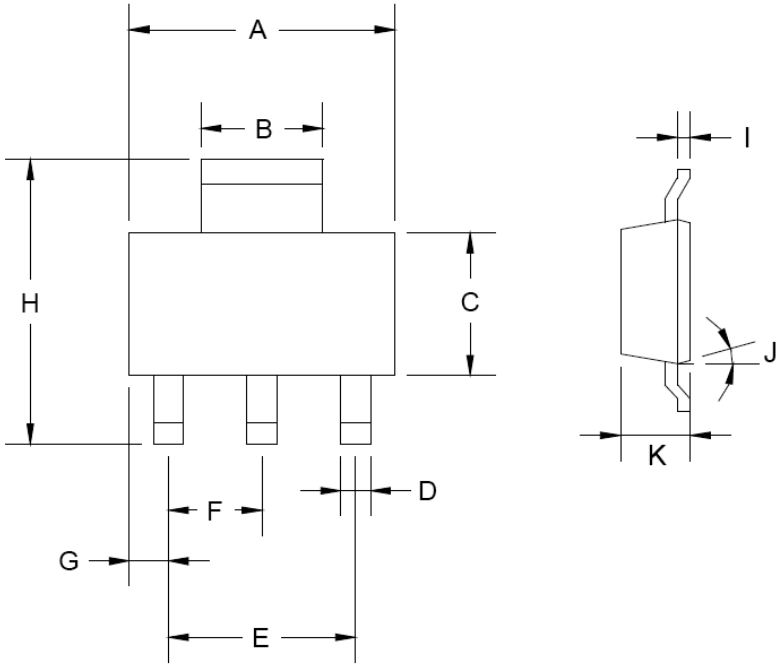
Figure 5. Safety Operation Area



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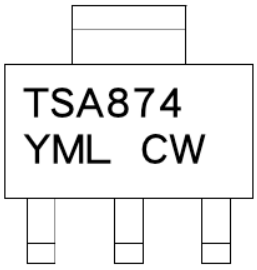
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SOT-223 Mechanical Drawing



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**=Apl, **E**=May, **F**=Jun, **G**=Jul, **H**=Aug, **I**=Sep, **J**=Oct, **K**=Nov, **L**=Dec)
L = Lot Code

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