TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

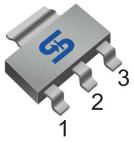
TSC873

NPN Silicon Planar High Voltage Transistor

TO-92

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

SOT-223



Pin Definition:
1. Base
2. Collector
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PRODUCT SUMMARY

BV_{CBO}	600V
BV_{CEO}	400V
I_C	1A
$V_{CE(SAT)}$	0.5V @ I_C / I_B = 500mA / 100mA

Features

- High BVceo, BVcbo
- High current gain

Structure

- Epitaxial Planar Type

Ordering Information

Part No.	Package	Packing
TSC873CT B0G	TO-92	1,000pcs / Bulk
TSC873CT A3G	TO-92	2,000pcs / Ammo
TSC873CW RPG	SOT-223	2,500pcs / 13” Reel

Note: “G” denote for Halogen Free Product

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}	400	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	1	A
	Pulse		2	
Total Power Dissipation @ T_A=25°C	TO-92	P_{tot}	1	W
	SOT-223		1.2	
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	BV_{CBO}	600	--	--	V
Collector-Emitter Breakdown Voltage	I_C = 1mA	BV_{CEO}	400	--	--	V
Emitter-Base Breakdown Voltage	I_E = 100uA	BV_{EBO}	9	--	--	V
Collector-Base Cutoff Current	V_{CB}=600V	I_{CBO}	--	--	100	uA
Collector-Emitter Cutoff Current	V_{CE} = 400V	I_{CEO}	--	--	1	mA
Emitter-Base Cutoff Current	V_{EB}=8V	I_{EBO}	--	--	100	uA
Collector-Emitter Saturation Voltage	I_C = 500mA, I_B = 100mA	$V_{CE(SAT)}$ 1	--	--	0.5	V
Collector-Emitter Saturation Voltage	I_C = 1A, I_B = 250mA	$V_{CE(SAT)}$ 2	--	--	1	V
Base-Emitter Saturation Voltage	I_C = 500mA, I_B = 100mA	$V_{BE(SAT)}$ 1	--	--	1	V
Base-Emitter Saturation Voltage	I_C = 1A, I_B = 250mA	$V_{BE(SAT)}$ 2	--	--	1.2	V
DC Current Transfer Ratio	V_{CE} = 10V, I_C = 250mA	h_{FE}	80	--	--	
Trun-on Time	Vcc=125V,Ic=1A, I_{B1}=I_{B2}=200mA	T_{ON}	--	1	--	uS
Storage Time		T_{STG}	--	4	--	uS
Fall Time		T_{OFF}	--	0.7	--	uS

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

Figure 1. Static Characteristics

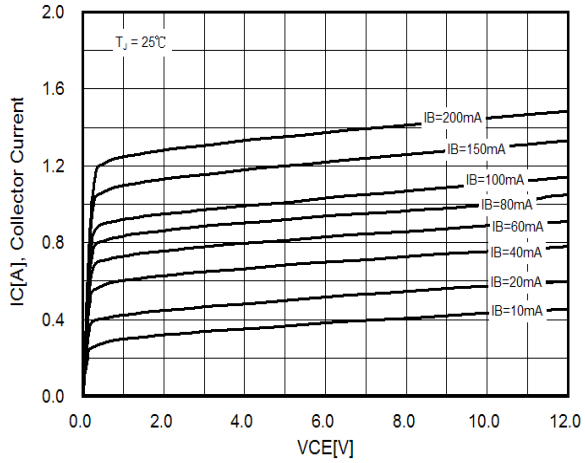


Figure 2. DC Current Gain

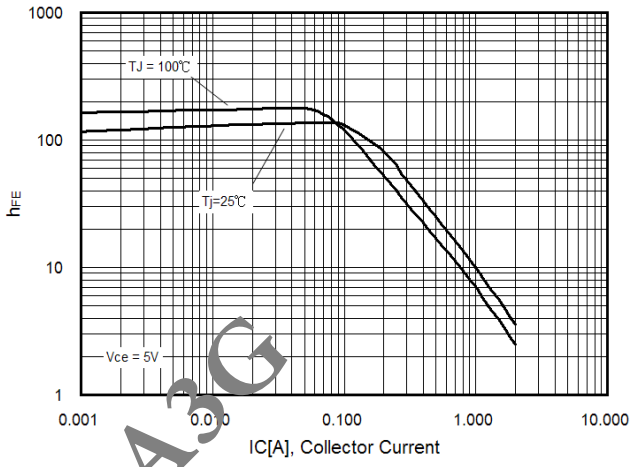


Figure 3. VCE(SAT) v.s. IC

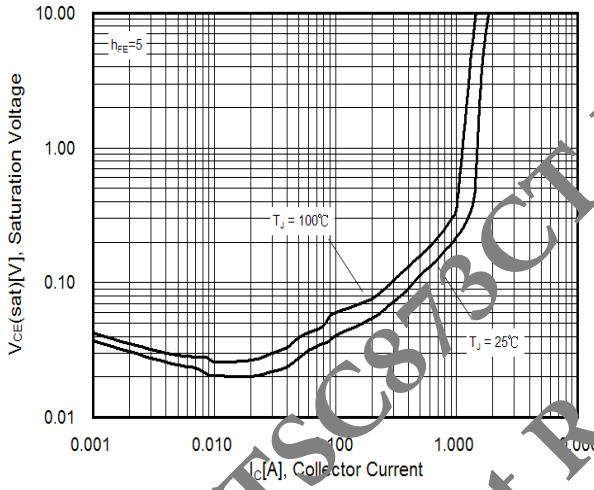


Figure 4. VBE(sat) vs Ic

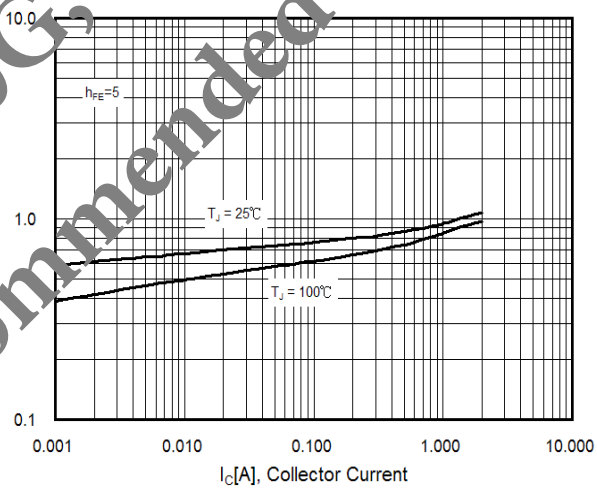


Figure 5. VBE(on) vs Ic

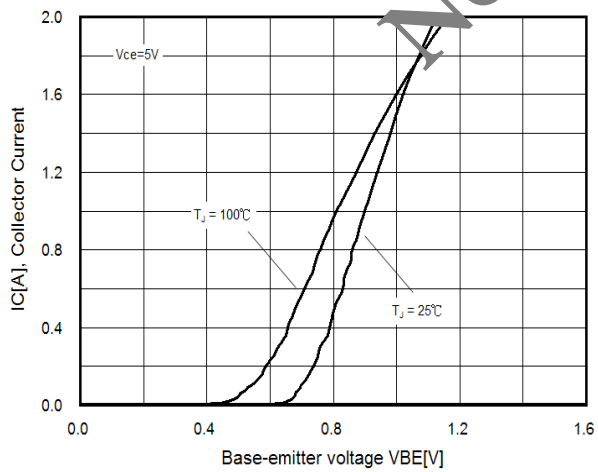
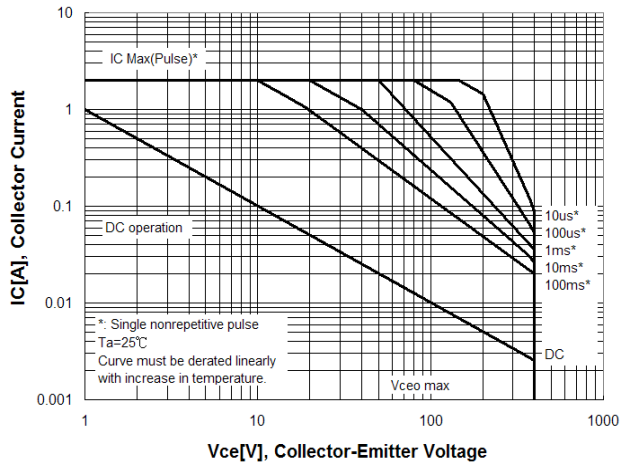


Figure 6. Safety Operation Area



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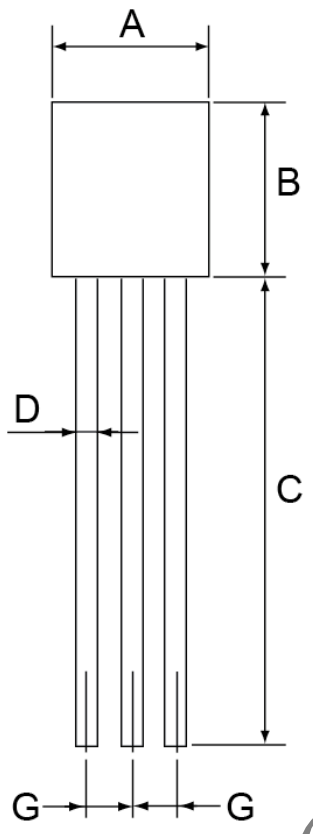
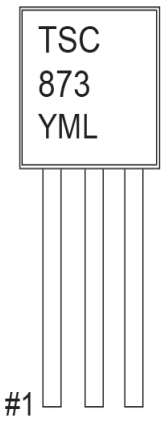
TO-92 Mechanical Drawing



TO-92 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.30	4.70	0.169	0.185
B	4.30	4.70	0.169	0.185
C	14.30(typ)		0.563(typ)	
D	0.43	0.49	0.017	0.019
E	1.18	1.28	0.046	0.050
F	3.30	3.70	0.130	0.146
G	1.27	1.31	0.05	0.051
H	0.37	0.43	0.015	0.017

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
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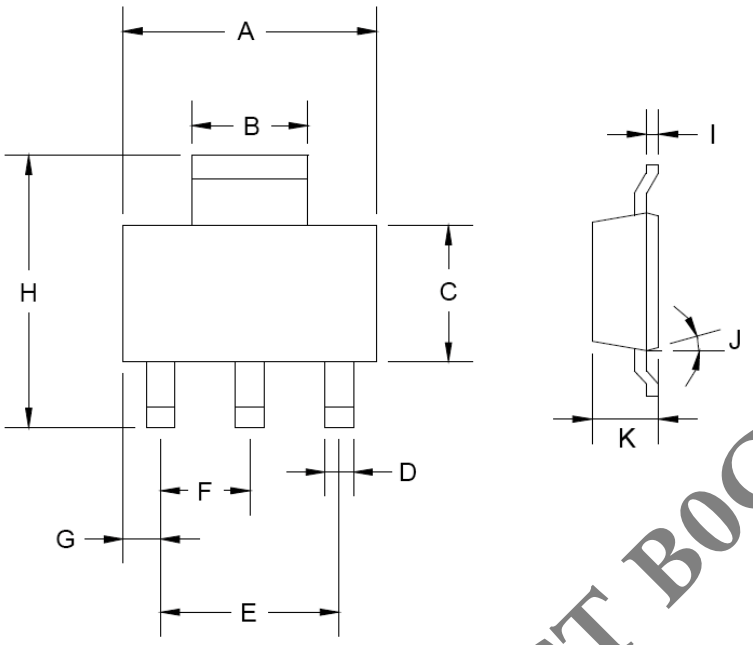
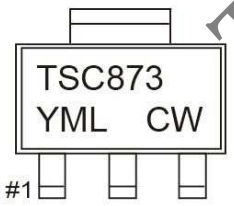
SOT-223 Mechanical Drawing



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



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