

NPN Silicon Planar High Voltage Transistor

TO-92



Pin Definition:

1. Emitter
2. Collector
3. Base

SOT-223



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1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

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

Features

- High BV_{ceo} , BV_{cbo}
- 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 R0G	SOT-223	2,500pcs / 13" Reel

Note: "G" denote for Halogen Free Product

Absolute Maximum Rating ($T_A = 25^\circ C$ 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_{EB}	9	V
Collector Current	DC	1	A
	Pulse	2	
Total Power Dissipation @ $T_A = 25^\circ C$	TO-92	1	W
	SOT-223	1.2	
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ C$

Electrical Specifications ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = 100\mu A$	BV_{CBO}	600	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 1mA$	BV_{CEO}	400	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 100\mu A$	BV_{EBO}	9	--	--	V
Collector-Base Cutoff Current	$V_{CB} = 600V$	I_{CBO}	--	--	100	μA
Collector-Emitter Cutoff Current	$V_{CE} = 400V$	I_{CEO}	--	--	1	mA
Emitter-Base Cutoff Current	$V_{EB} = 8V$	I_{EBO}	--	--	100	μA
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	$V_{CC} = 125V, I_C = 1A, I_{B1} = I_{B2} = 200mA$	T_{ON}	--	1	--	μS
Storage Time		T_{STG}	--	4	--	μS
Fall Time		T_{OFF}	--	0.7	--	μS

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

Figure 1. Static Characteristics

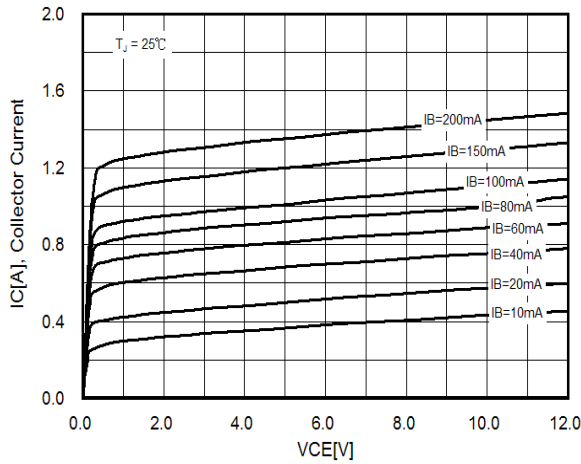


Figure 2. DC Current Gain

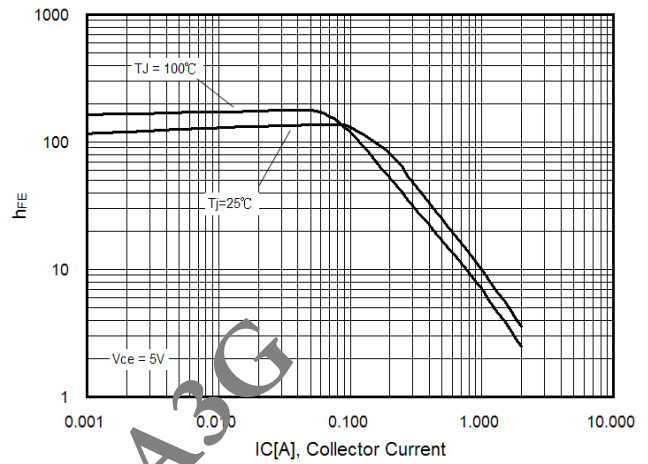


Figure 3. VCE(sat) v.s. IC

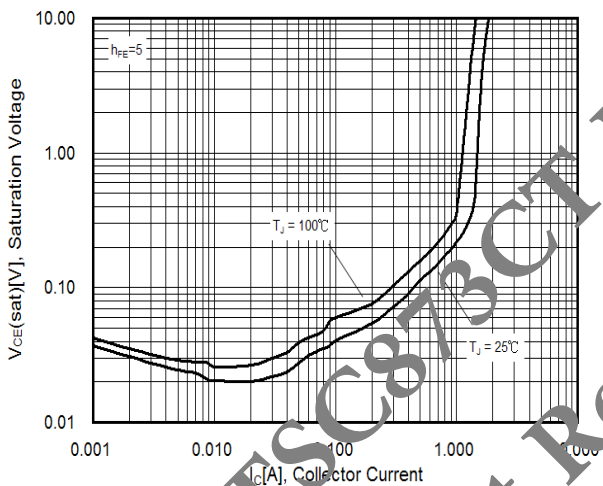


Figure 4. VBE(sat) vs IC

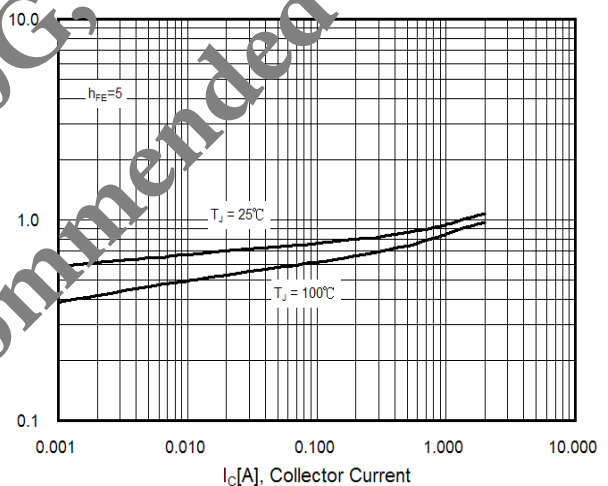


Figure 5. VBE(on) vs IC

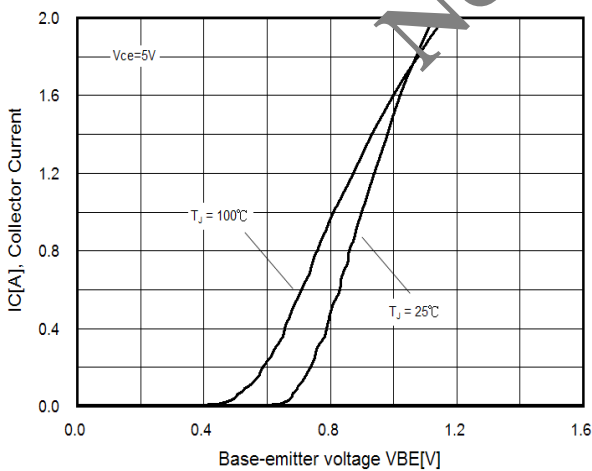
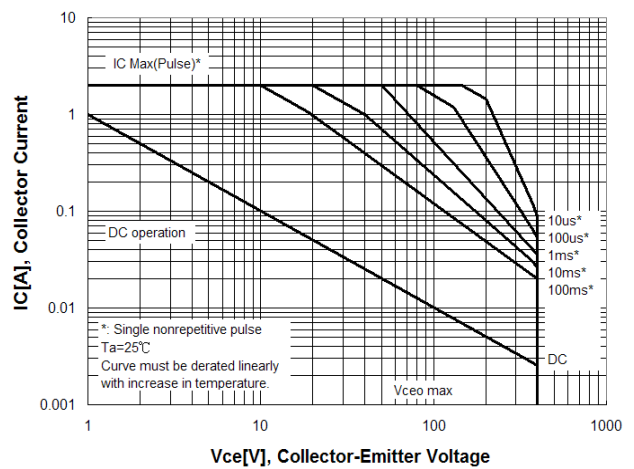
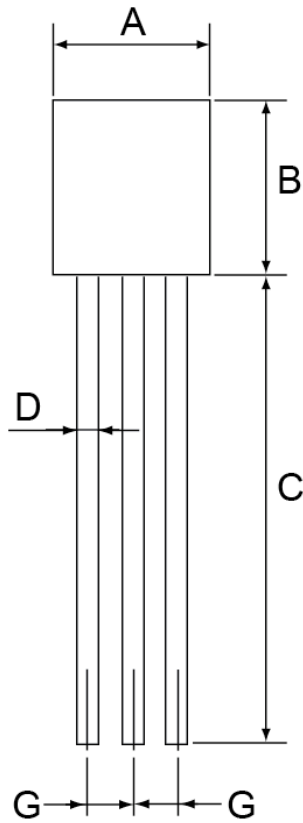


Figure 6. Safety Operation Area

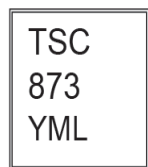


TO-92 Mechanical Drawing



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

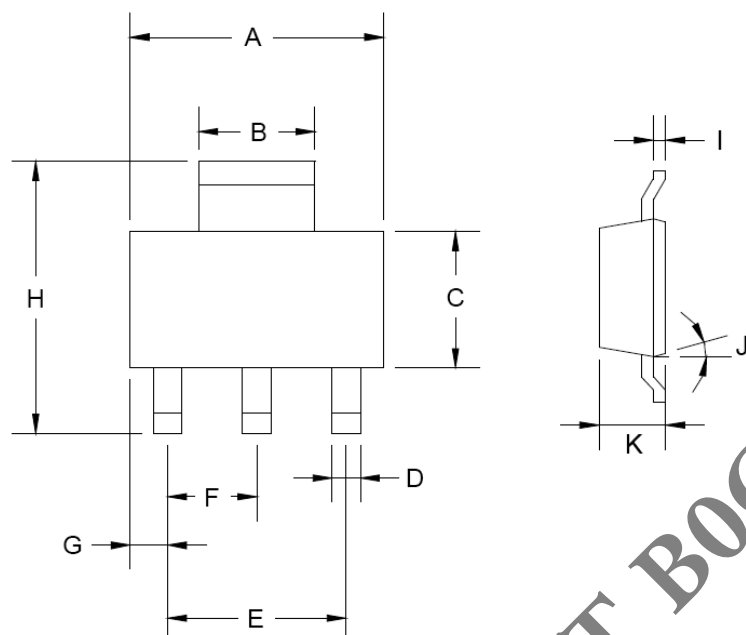
S =May **T** =Jun **U** =Jul **V** =Aug

W =Sep **X** =Oct **Y** =Nov **Z** =Dec

L = Lot Code

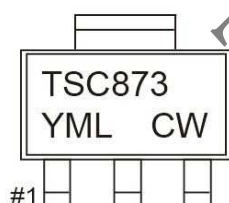
#1

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	0.635	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

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TSC873CT B0G, A3G
Not Recommended

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