NPN Silicon Planar High Voltage Transistor

FEATURES

- High BV_{CEO}, BV_{CBO}
- High current gain
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-Free according to IEC 61249-2-21

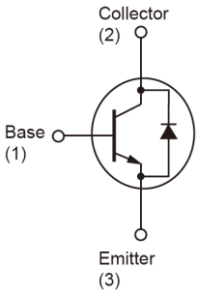
APPLICATION

- Lighting
- Switch mode power supply

KEY PERFORMANCE PARAMETERS			
PARAMETER		**VALUE**	**UNIT**
BV_{CEO}		400	V
BV_{CBO}		600	V
I_C		1	A
$V_{CE(SAT)}$	I_C=0.5A, I_B=0.1A	0.5	V

Pb-Free RoHS COMPLIANT HALOGEN FREE

SOT-223



Notes: MSL 3 (Moisture Sensitivity Level) per J-STD-020

ABSOLUTE MAXIMUM RATINGS (T_A = 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	A
Power Total Dissipation @ T_A=25ºC		P_{DTOT}	1.2	W
Maximum Operating Junction Temperature		T_J	+150	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C

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ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER	**CONDITIONS**	**SYMBOL**	**MIN**	**TYP**	**MAX**	**UNIT**
Static (Note 1)						
Collector-Base voltage	I_C =100μA	BV_{CBO}	600	--	--	V
Collector-Emitter breakdown voltage	I_C =1mA	BV_{CEO}	400	--	--	V
Emitter-Base breakdown voltage	I_E =100μA	BV_{EBO}	9	--	--	V
Emitter cut-off current	V_{EB} =8V	I_{EBO}	--	--	100	μA
Collector cut-off current	V_{CB} =600V	I_{CBO}	--	--	100	μA
Collector-Emitter Cutoff Current	V_{CE} = 400V	I_{CEO}	--	--	1	mA
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 Gain	V_{CE} =10V, I_C =250mA	h_{FE}1	80	--	--	
Resistive Load Switching Time (Note 2)						
Turn-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_f	--	0.7	--	μs

Notes:

1. Pulse test: ≤ 380μs, duty cycle ≤ 2%
2. For DESIGN AID ONLY, not subject to production testing.

ORDERING INFORMATION

PART NO.	PACKAGE	PACKING
TSC873CW RPG	SOT-223	2,500pcs / 13”Reel

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Electrical Characteristics Curve

(Ta = 25°C, unless otherwise noted)

Figure 1. Static Characteristics

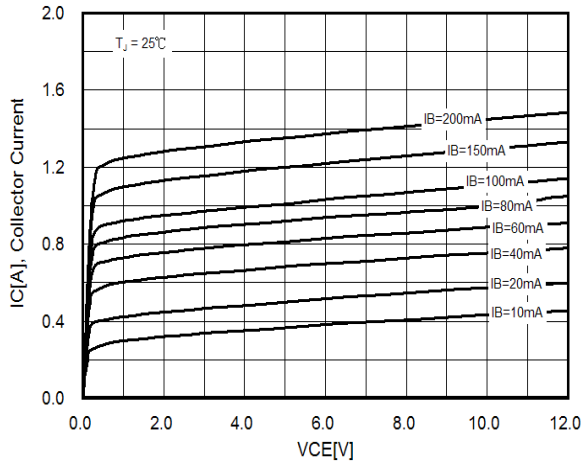


Figure 2. DC Current Gain

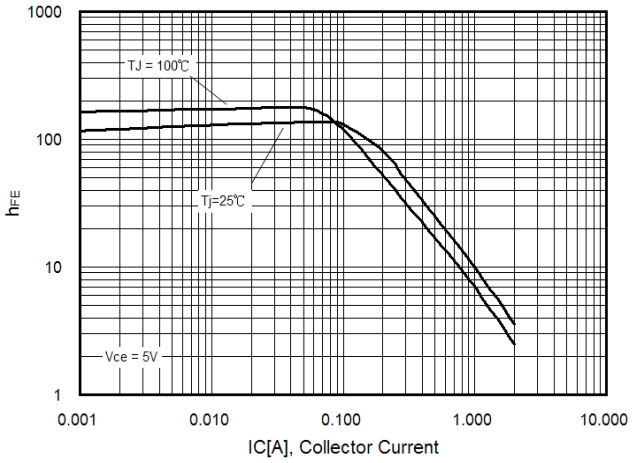


Figure 3. VCE(SAT) v.s. IC

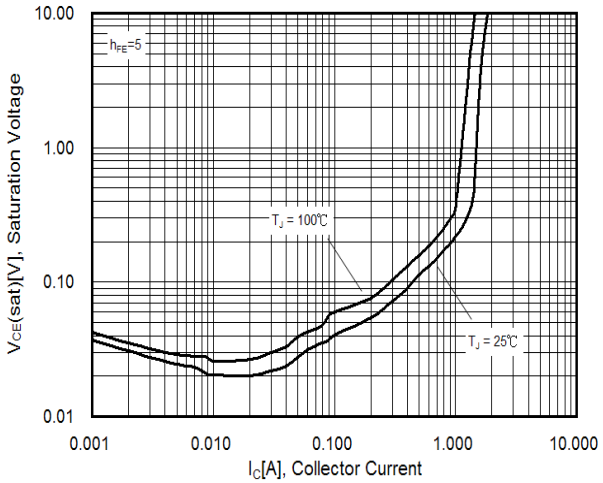


Figure 4. VBE(sat) vs Ic

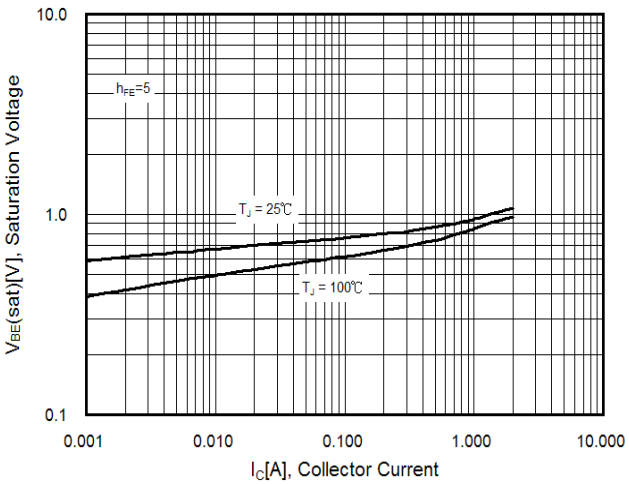


Figure 5. VBE(on) vs Ic

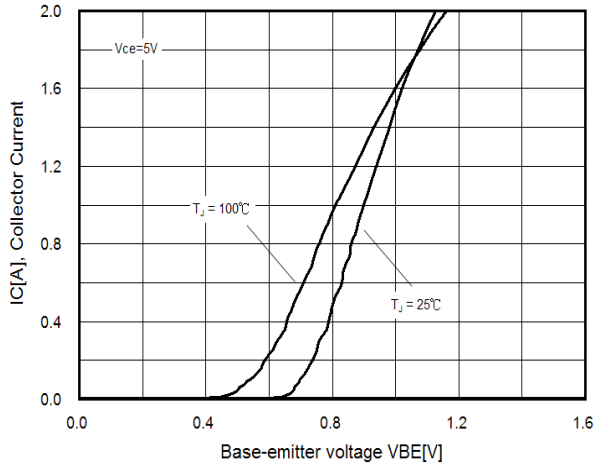
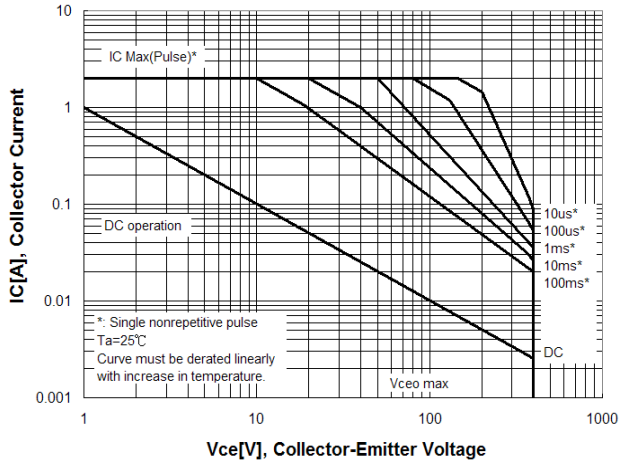


Figure 6. Safety Operation Area



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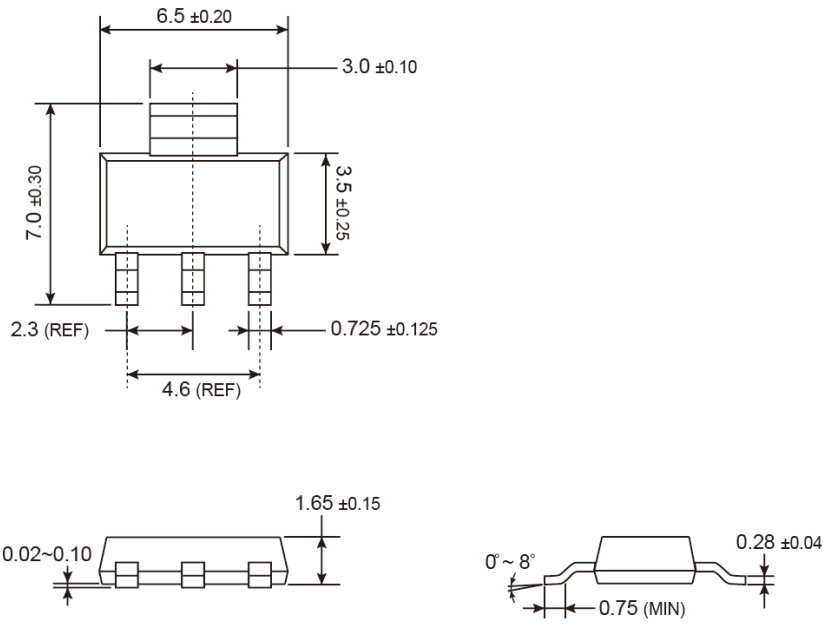
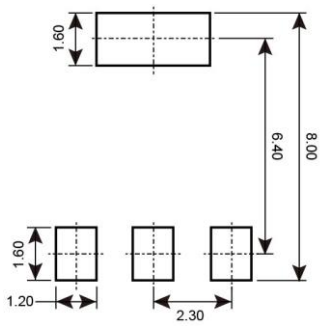
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

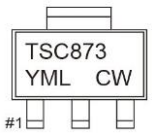
SOT-223



SUGGESTED PAD LAYOUT (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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