Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSC4505

High Voltage NPN Transistor

SOT-23

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

PRODUCT SUMMARY

BV_{CEO}	400V
BV_{CBO}	400V
I_C	300mA
$V_{CE(SAT)}$	0.1V @ I_C / I_B = 10mA / 1mA

Features

- Low $V_{CE(SAT)}$ 0.15V @ I_C / I_B = 10mA / 10mA (Typ.)
- Complementary part with TSA1759

Structure

- Epitaxial Planar Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSC4505CX RFG	SOT-23	3Kpcs / 7" Reel

Note: "G" denotes Halogen Free Product.

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

Parameter		Symbol	Limit	Unit
Collector-Base Voltage		V_{CBO}	400	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current		I_C	300	mA
Collector Power Dissipation	SOT-23	P_D	0.225	W
Operating Junction Temperature		T_J	+150	°C
Operating Junction and Storage Temperature Range		T_{STG}	- 55 to +150	°C

Note: Single pulse, Pw=20ms, Duty≤50%

Electrical Specifications (T_A = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I_C = 50uA, I_E = 0	BV_{CBO}	400	--	--	V
Collector-Emitter Breakdown Voltage	I_C = 1mA, I_B = 0	BV_{CEO}	400	--	--	V
Emitter-Base Breakdown Voltage	I_E = 50uA, I_C = 0	BV_{EBO}	6	--	--	V
Collector Cutoff Current	V_{CB} = 400V, I_E = 0	I_{CBO}	--	--	10	uA
Collector-Emitter Reverse Current	V_{CE} = 300V, R_{EB} = 4kΩ	I_{CER}	--	--	20	nA
Emitter Cutoff Current	V_{EB} = 6V, I_C = 0	I_{EBO}	--	--	10	uA
Collector-Emitter Saturation Voltage	I_C / I_B = 10mA / 1mA	$V_{CE(SAT)}$	--	0.1	0.5	V
Base-Emitter Saturation Voltage	I_C / I_B = 10mA / 1mA	$V_{BE(SAT)}$	--	--	1.5	V
DC Current Transfer Ratio	V_{CE} = 10V, I_C = 10mA	h_{FE}	100	--	270	
Transition Frequency	V_{CE} =10V, I_C=-10mA, f=10MHz	f_T	--	20	--	MHz
Output Capacitance	V_{CB} = 10V, I_E = 0, f=1MHz	Cob	--	7	--	pF

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

Figure 1. DC Current Gain

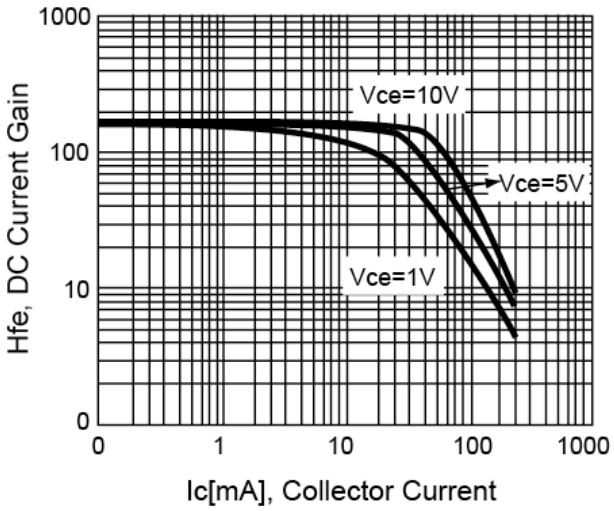


Figure 2. $V_{CE(SAT)}$ v.s. Ic

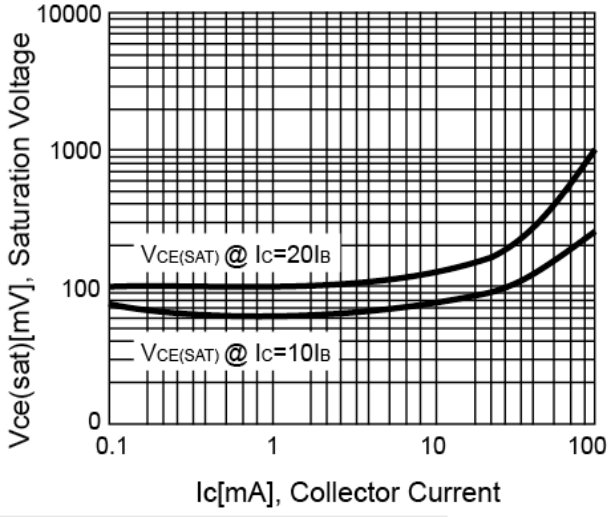


Figure 3. $V_{BE(SAT)}$ v.s. Ic

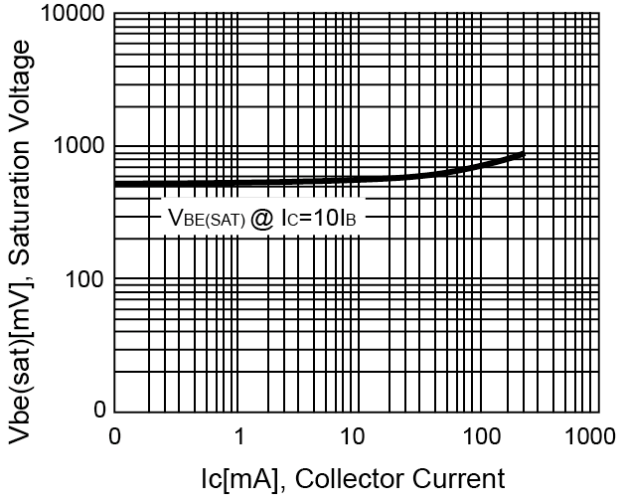
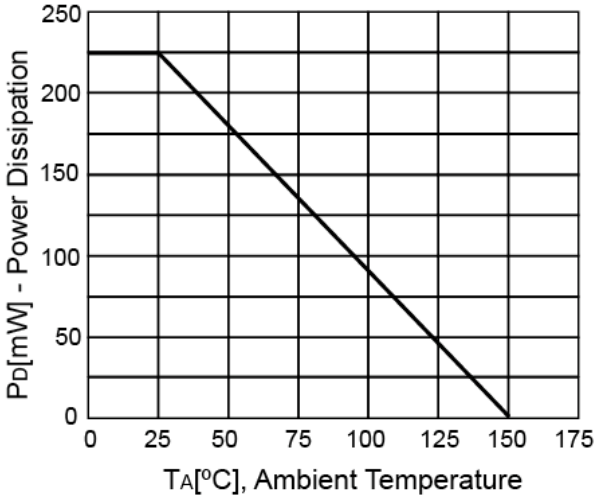
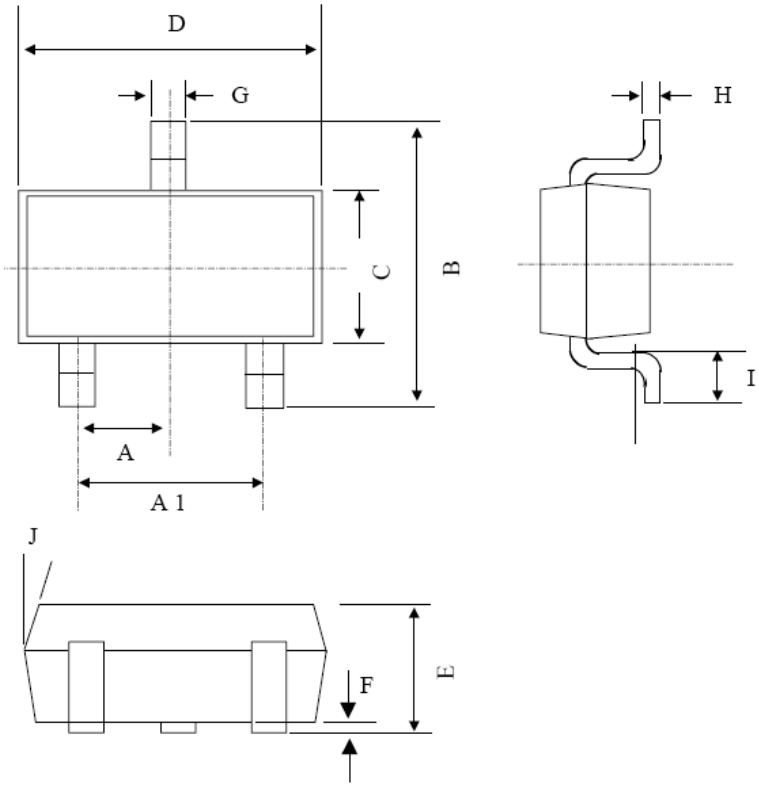


Figure 4. Power Derating Curve



SOT-23 Mechanical Drawing



SOT-23 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX.
A	1.00 BSC		0.039 BSC	
A1	2.00 BSC		0.079 BSC	
B	2.10	2.75	0.083	0.108
C	1.20	1.60	0.047	0.063
D	2.80	3.04	0.110	0.120
E	0.89	1.30	0.035	0.051
F	0.01	0.10	0.000	0.004
G	0.30	0.50	0.012	0.020
H	0.08	0.18	0.003	0.007
I	0.30	0.60	0.012	0.024

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