

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 RF	SOT-23	3Kpcs / 7" Reel
TSC4505CX RFG	SOT-23	3Kpcs / 7" Reel

Note: "G" denotes Halogen Free Product.

Absolute Maximum Rating ($T_A = 25^\circ C$ 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	P_D	0.225	W
Operating Junction Temperature	T_J	+150	$^\circ C$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ C$

Note: Single pulse, $P_w=20ms$, $Duty \leq 50\%$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = 50\mu A$, $I_E = 0$	BV_{CBO}	400	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 1mA$, $I_B = 0$	BV_{CEO}	400	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 50\mu A$, $I_C = 0$	BV_{EBO}	6	--	--	V
Collector Cutoff Current	$V_{CB} = 400V$, $I_E = 0$	I_{CBO}	--	--	10	μA
Collector-Emitter Reverse Current	$V_{CE} = 300V$, $R_{EB} = 4k\Omega$	I_{CER}	--	--	20	nA
Emitter Cutoff Current	$V_{EB} = 6V$, $I_C = 0$	I_{EBO}	--	--	10	μA
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	$V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$	C_{ob}	--	7	--	pF

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

Figure 1. DC Current Gain

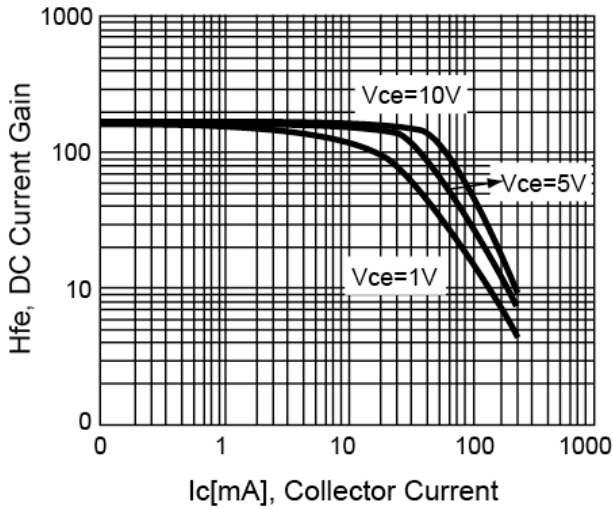


Figure 2. $V_{CE(SAT)}$ v.s. I_c

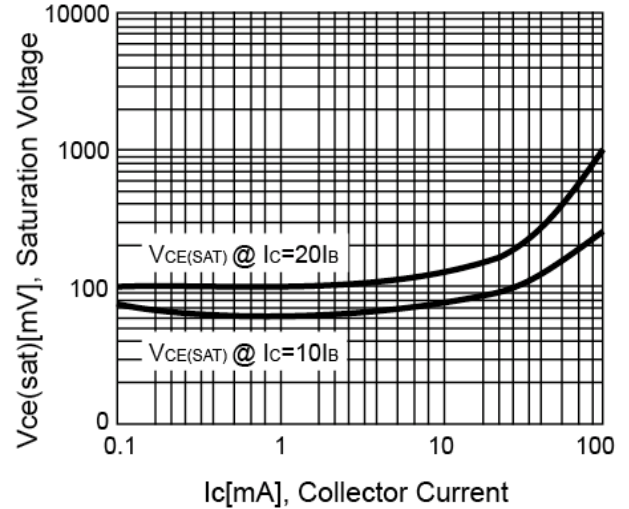


Figure 3. $V_{BE(SAT)}$ v.s. I_c

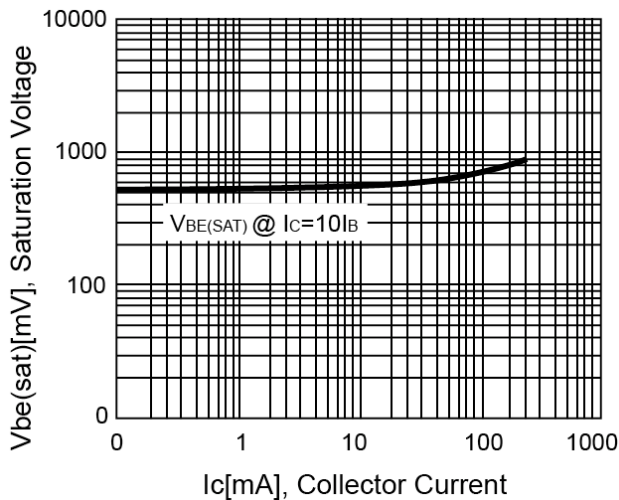
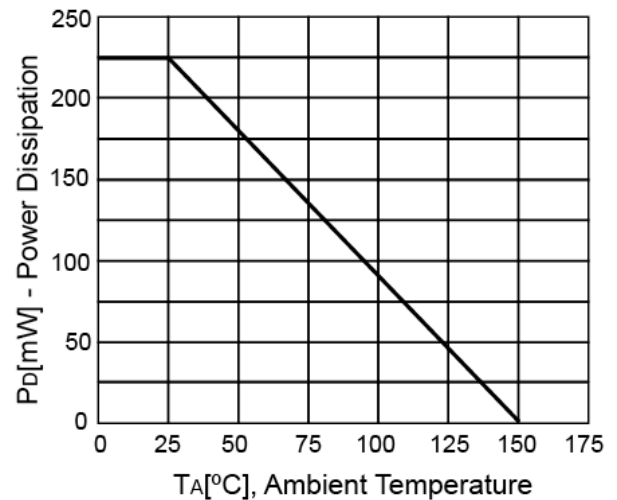
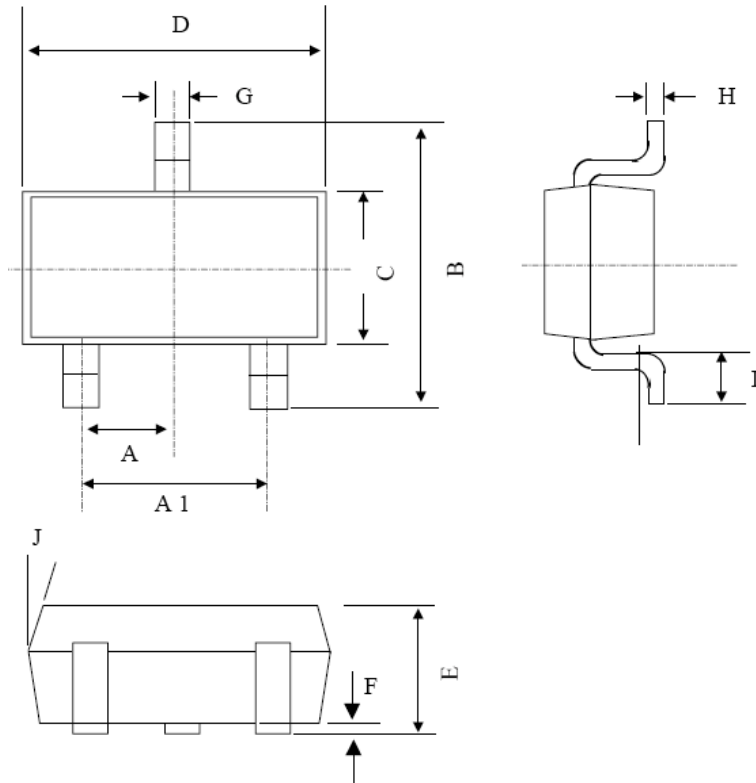


Figure 4. Power Derating Curve



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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