

SOT-23

Pin Definition:

1. Base
2. Emitter
3. Collector

PRODUCT SUMMARY

BV_{CEO}	40V
BV_{CBO}	75V
I_C	600mA
$V_{CE(SAT)}$	0.5V @ $I_C / I_B = 380mA / 10mA$

Features

- Driver Stage of AF Amplifier
- General Purpose Switching Application

Structure

- Epitaxial Planar Type
- Complementary to TSA1036CX

Ordering Information

Part No.	Package	Packing
TSC2411CX RF	SOT-23	3Kpcs / 7" Reel

Absolute Maximum Rating ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Collector Power Dissipation	P_D	225	mW
Operating Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ\text{C}$

Note: 1. Single pulse, $P_w=20\text{ms}$, $Duty \leq 50\%$

2. When mounted on a 40 x 50 x 0.7mm ceramic board.

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$, $I_E = 0$	BV_{CBO}	75	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$, $I_B = 0$	BV_{CEO}	40	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$, $I_C = 0$	BV_{EBO}	6	--	--	V
Collector Cutoff Current	$V_{CB} = 60\text{V}$, $I_E = 0$	I_{CBO}	--	--	0.1	μA
Emitter Cutoff Current	$V_{EB} = 3\text{V}$, $I_C = 0$	I_{EBO}	--	--	0.1	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = 380\text{mA} / 10\text{mA}$	$V_{CE(SAT)1}$	--	0.2	0.5	V
Collector-Emitter Saturation Voltage	$I_C / I_B = 150\text{mA} / 15\text{mA}$	$V_{CE(SAT)2}$	--	0.2	0.4	V
Collector-Emitter Saturation Voltage	$I_C / I_B = 500\text{mA} / 50\text{mA}$	$V_{CE(SAT)3}$	--	0.45	0.75	V
Base-Emitter Saturation Voltage	$I_C / I_B = 150\text{mA} / 15\text{mA}$	$V_{BE(SAT)1}$	0.75	--	0.95	V
Base-Emitter Saturation Voltage	$I_C / I_B = 500\text{mA} / 50\text{mA}$	$V_{BE(SAT)2}$	--	--	1.2	V
DC Current Transfer Ratio	$V_{CE} = 1\text{V}$, $I_C = 150\text{mA}$	h_{FE}	82	--	390	
Transition Frequency	$V_{CE} = 5\text{V}$, $I_C = 20\text{mA}$, $f = 100\text{MHz}$	f_T	300	--	--	MHz
Output Capacitance	$V_{CB} = 5\text{V}$, $f = 1\text{MHz}$	C_{ob}	--	6	--	pF

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

Figure 1. DC Current Gain

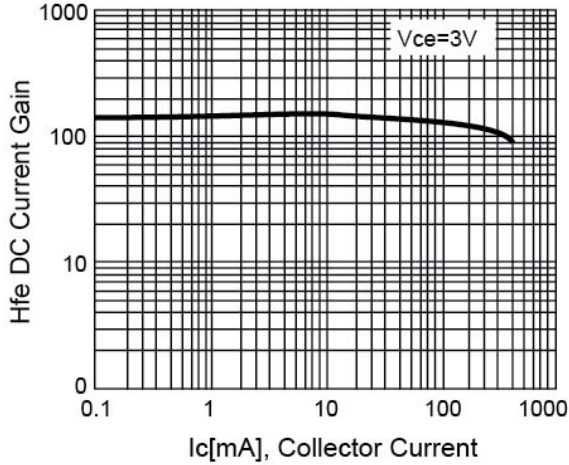


Figure 2. $V_{CE(SAT)}$ v.s. I_c

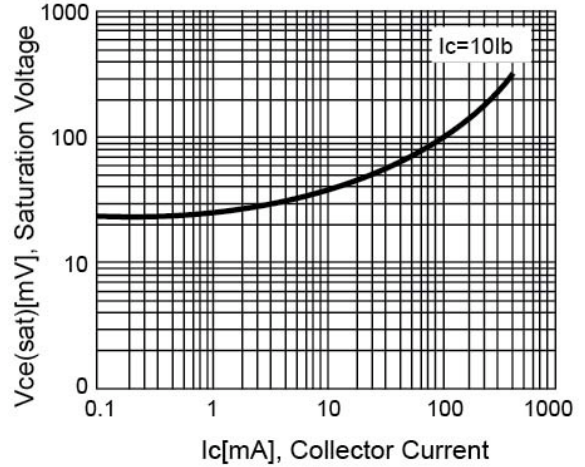


Figure 3. $V_{BE(SAT)}$ v.s. I_c

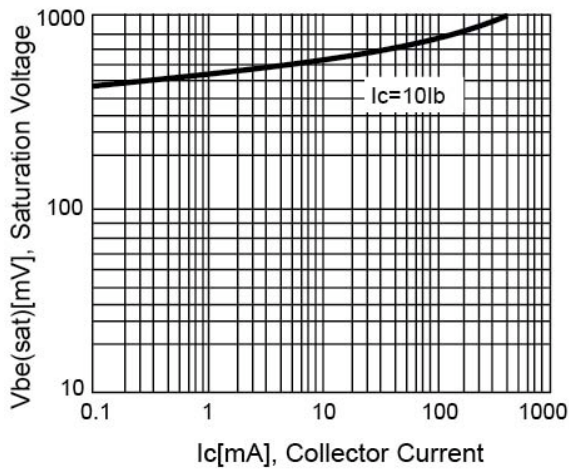


Figure 4. Cutoff Frequency vs. I_c

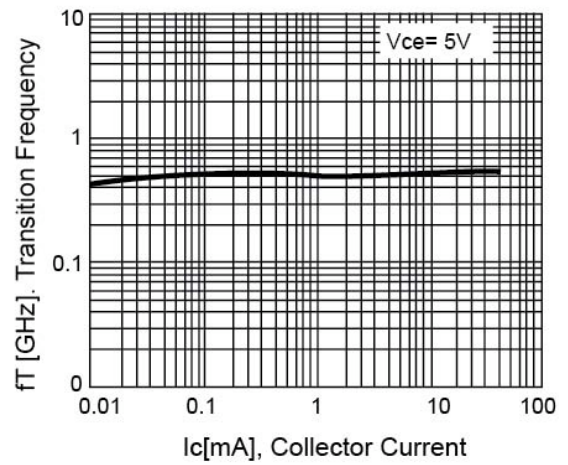
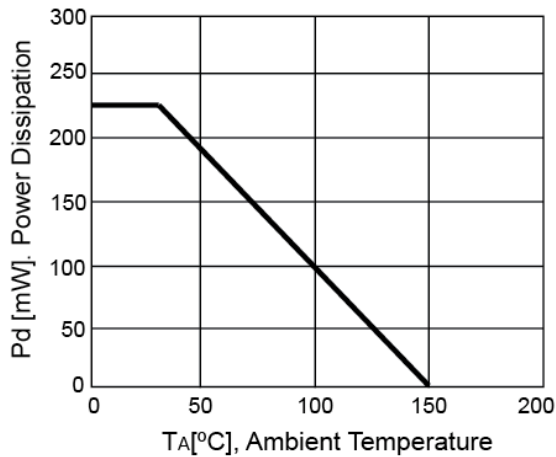
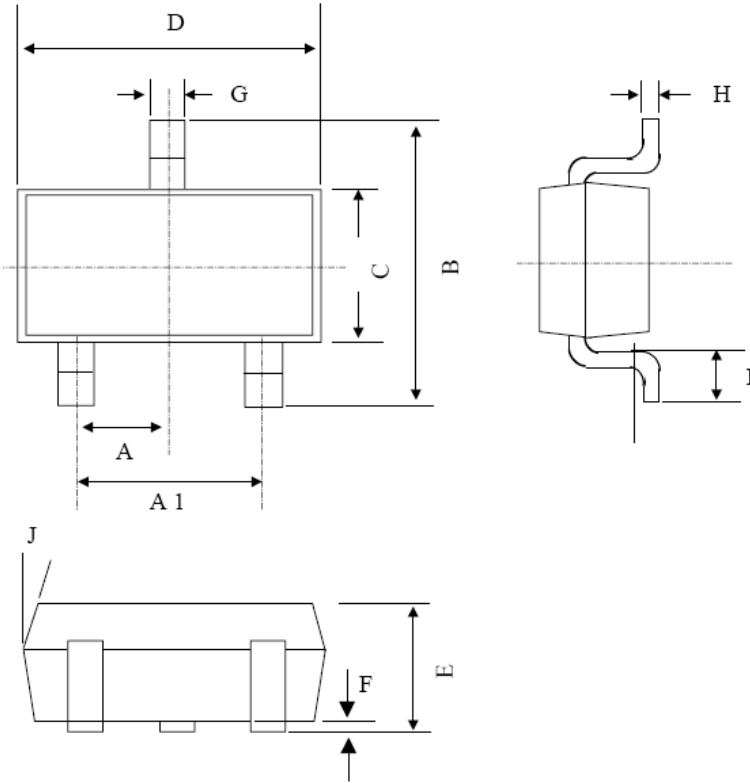


Figure 5. Power Derating Curve



SOT-23 Mechanical Drawing



SOT-23 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX.
A	0.95 BSC		0.037 BSC	
A1	1.9 BSC		0.074 BSC	
B	2.60	3.00	0.102	0.118
C	1.40	1.70	0.055	0.067
D	2.80	3.10	0.110	0.122
E	1.00	1.30	0.039	0.051
F	0.00	0.10	0.000	0.004
G	0.35	0.50	0.014	0.020
H	0.10	0.20	0.004	0.008
I	0.30	0.60	0.012	0.024
J	5°	10°	5°	10°

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