TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

TSC2411

General Purpose NPN Transistor

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 RFG	SOT-23	3Kpcs / 7" Reel

Note: "G" denotes for Halogen Free

Absolute Maximum Rating (Ta = 25°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	°C
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	°C

Note: 1. Single pulse, Pw=20ms, Duty≤50%
2. When mounted on a 40 x 50 x 0.7mm ceramic board.

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

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

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

Figure 1. DC Current Gain

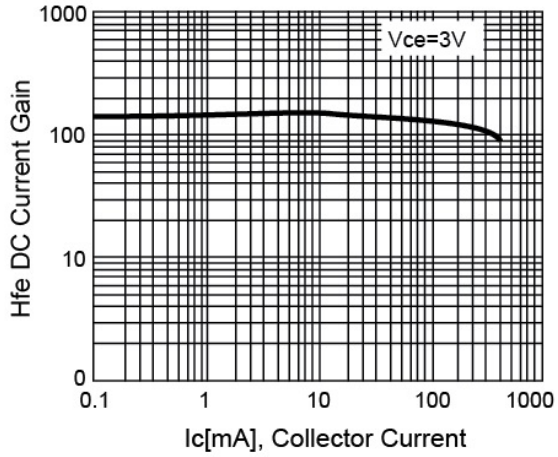


Figure 2. $V_{CE(SAT)}$ vs. Ic

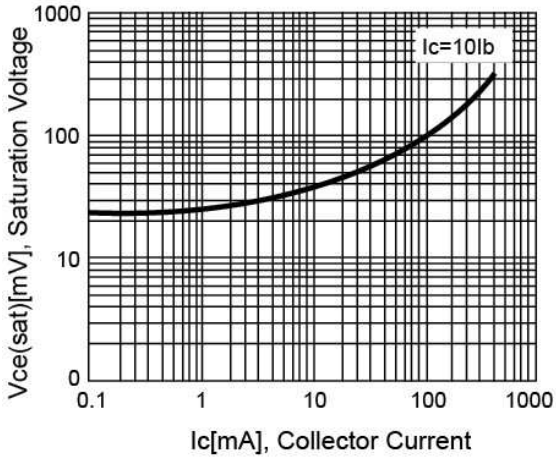


Figure 3. $V_{BE(SAT)}$ vs. Ic

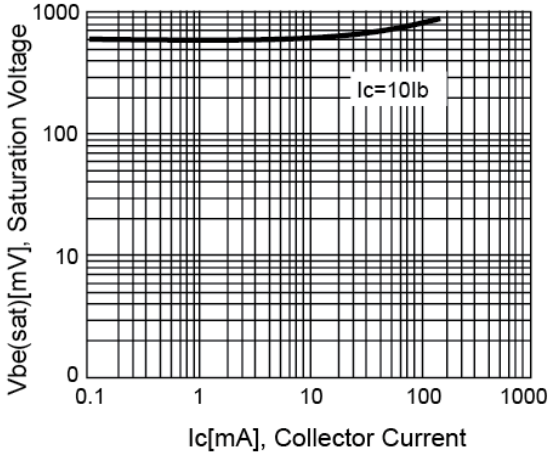


Figure 4. Cutoff Frequency vs. Ic

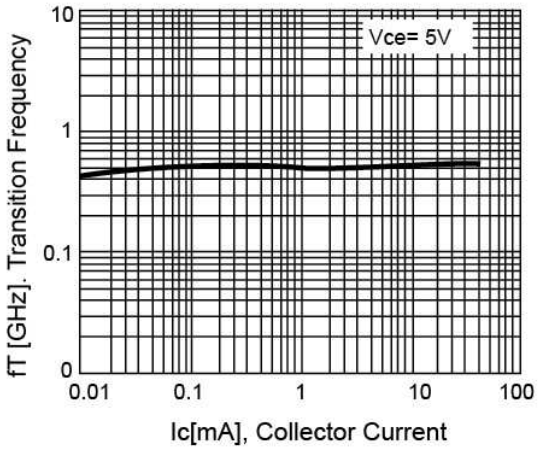
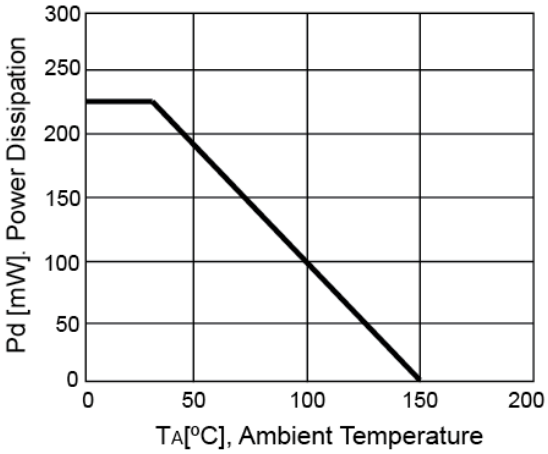


Figure 5. Power Derating Curve



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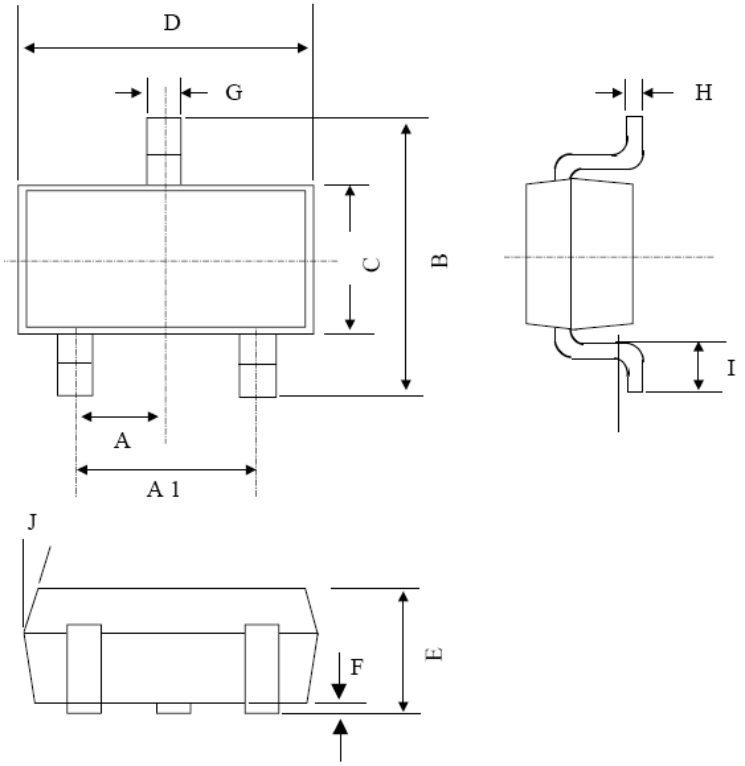
SOT-23 Mechanical Drawing



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	5º	10º	5º	10º

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