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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



**SOT-23**

**Pin Definition:**

1. Base
2. Emitter
3. Collector

**PRODUCT SUMMARY**

<b>BV<sub>CBO</sub></b>	-60V
<b>BV<sub>CEO</sub></b>	-60V
<b>I<sub>C</sub></b>	-0.6A
<b>V<sub>CE(SAT)</sub></b>	-0.4V @ I <sub>C</sub> / I <sub>B</sub> = -150mA / -15mA

**Features**

- Low V<sub>CE(SAT)</sub> -0.4 @ I<sub>C</sub> / I<sub>B</sub> = -150mA / -15mA
- Complementary part with TSC2411

**Structure**

- Epitaxial Planar Type
- PNP Silicon Transistor

**Ordering Information**

Part No.	Package	Packing
TSA1036CX 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 <sub>CBO</sub>	-60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-0.6	A
Collector Power Dissipation	P <sub>D</sub>	225	mW
Thermal Resistance, Junction to Ambient	Rθ <sub>JA</sub>	556	°C/W
Operating Junction Temperature	T <sub>J</sub>	+150	°C
Operating Junction and Storage Temperature Range	T <sub>STG</sub>	- 55 to +150	°C

Note: Single pulse, Pw≤350us, Duty≤2%

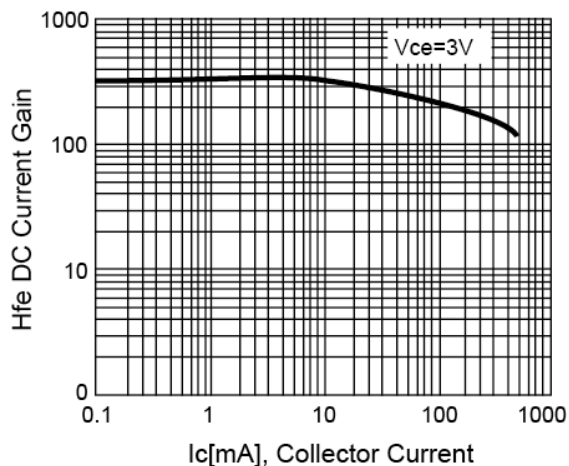
**Electrical Specifications** (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I <sub>C</sub> = -10uA, I <sub>E</sub> = 0	BV <sub>CBO</sub>	-60	--	--	V
Collector-Emitter Breakdown Voltage	I <sub>C</sub> = -10mA, I <sub>B</sub> = 0	BV <sub>CEO</sub>	-60	--	--	V
Emitter-Base Breakdown Voltage	I <sub>E</sub> = -10uA, I <sub>C</sub> = 0	BV <sub>EBO</sub>	-5	--	--	V
Collector Cutoff Current	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0	I <sub>CBO</sub>	--	--	-10	nA
Emitter Cutoff Current	V <sub>EB</sub> = -0.5V, I <sub>C</sub> = 0	I <sub>EBO</sub>	--	--	-50	nA
Collector-Emitter Saturation Voltage	I <sub>C</sub> / I <sub>B</sub> = -150mA / -15mA	*V <sub>CE(SAT)</sub>	--	--	-0.4	V
Base-Emitter Saturation Voltage	I <sub>C</sub> / I <sub>B</sub> = -500mA / -50mA	*V <sub>BE(SAT)</sub>	--	--	-1.3	V
DC Current Transfer Ratio	V <sub>CE</sub> = -10V, I <sub>C</sub> = -0.1A	*h <sub>FE</sub> 1	75	--	--	
	V <sub>CE</sub> = -10V, I <sub>C</sub> = -150mA	*h <sub>FE</sub> 2	100	--	300	
Transition Frequency	V <sub>CE</sub> = -5V, I <sub>C</sub> = -50mA, f = 100MHz	f <sub>T</sub>	200	--	--	MHz
Output Capacitance	V <sub>CB</sub> = -10V, f = 1MHz	Cob	--	--	8	pF

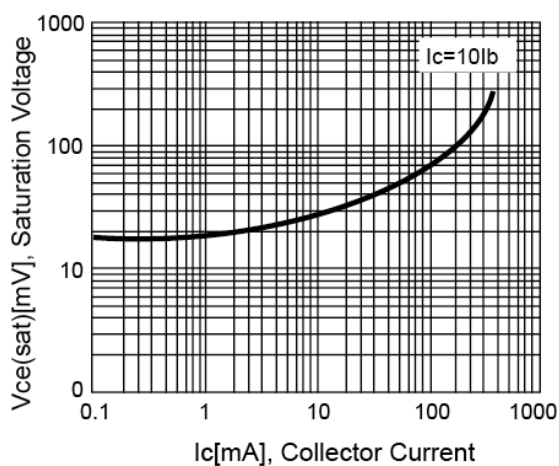
\* Pulse Test: Pulse Width ≤380uS, Duty Cycle ≤2%

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

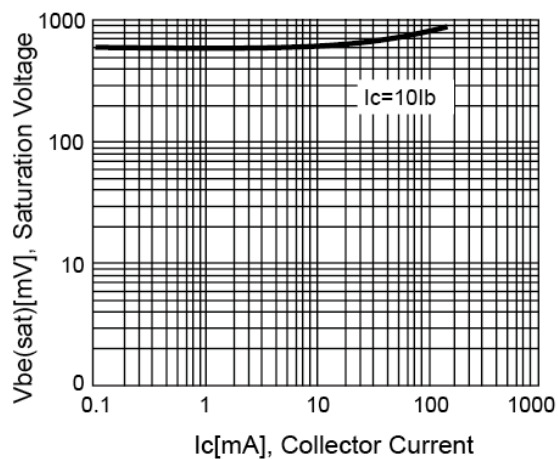
**Figure 1. DC Current Gain**



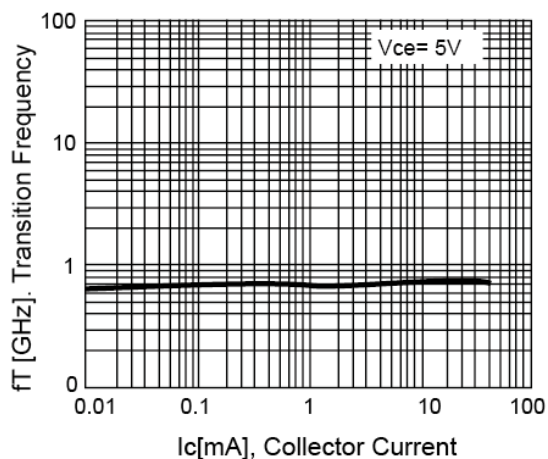
**Figure 2.  $V_{CE(SAT)}$  v.s.  $I_c$**



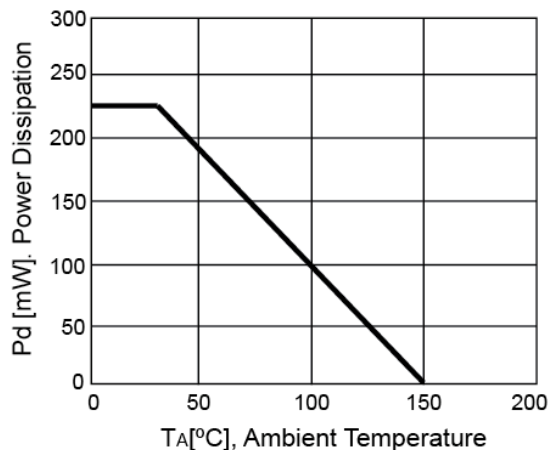
**Figure 3.  $V_{BE(SAT)}$  v.s.  $I_c$**



**Figure 4. Cutoff Frequency vs.  $I_c$**

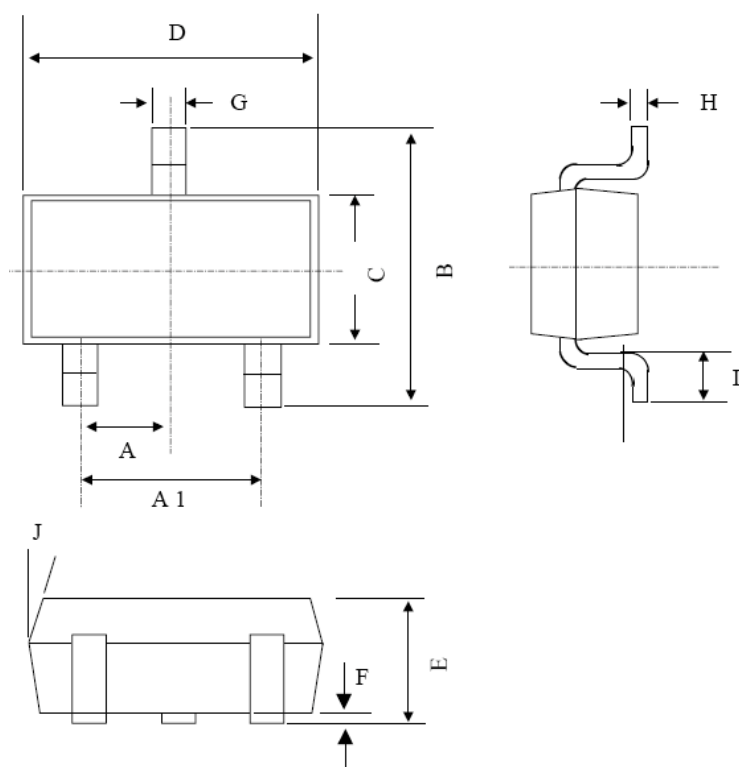


**Figure 5. Power Derating Curve**





## 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°

# **TSA1036**

## General Purpose PNP Transistor

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