

**SOT-23**

**Pin Definition:**

1. Base
2. Emitter
3. Collector

**PRODUCT SUMMARY**

<b><math>BV_{CBO}</math></b>	-60V
<b><math>BV_{CEO}</math></b>	-60V
<b><math>I_C</math></b>	-0.6A
<b><math>V_{CE(SAT)}</math></b>	-0.4V @ $I_C / I_B = -150mA / -15mA$

**Features**

- Low  $V_{CE(SAT)}$  -0.4 @  $I_C / I_B = -150mA / -15mA$
- 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** ( $T_a = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CBO}$	-60	V
Collector-Emitter Voltage	$V_{CEO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-0.6	A
Collector Power Dissipation	$P_D$	225	mW
Thermal Resistance, Junction to Ambient	$R\theta_{JA}$	556	$^\circ\text{C/W}$
Operating Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	$T_{STG}$	- 55 to +150	$^\circ\text{C}$

Note: Single pulse,  $P_w \leq 350\mu\text{s}$ ,  $\text{Duty} \leq 2\%$

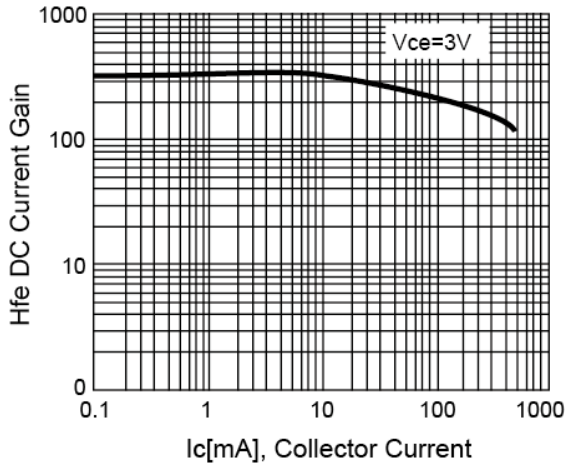
**Electrical Specifications** ( $T_a = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}$ , $I_E = 0$	$BV_{CBO}$	-60	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}$ , $I_B = 0$	$BV_{CEO}$	-60	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}$ , $I_C = 0$	$BV_{EBO}$	-5	--	--	V
Collector Cutoff Current	$V_{CB} = -50\text{V}$ , $I_E = 0$	$I_{CBO}$	--	--	-10	nA
Emitter Cutoff Current	$V_{EB} = -0.5\text{V}$ , $I_C = 0$	$I_{EBO}$	--	--	-50	nA
Collector-Emitter Saturation Voltage	$I_C / I_B = -150\text{mA} / -15\text{mA}$	$*V_{CE(SAT)}$	--	--	-0.4	V
Base-Emitter Saturation Voltage	$I_C / I_B = -500\text{mA} / -50\text{mA}$	$*V_{BE(SAT)}$	--	--	-1.3	V
DC Current Transfer Ratio	$V_{CE} = -10\text{V}$ , $I_C = -0.1\text{A}$	$*h_{FE1}$	75	--	--	
	$V_{CE} = -10\text{V}$ , $I_C = -150\text{mA}$	$*h_{FE2}$	100	--	300	
Transition Frequency	$V_{CE} = -5\text{V}$ , $I_C = -50\text{mA}$ , $f = 100\text{MHz}$	$f_T$	200	--	--	MHz
Output Capacitance	$V_{CB} = -10\text{V}$ , $f = 1\text{MHz}$	$C_{ob}$	--	--	8	pF

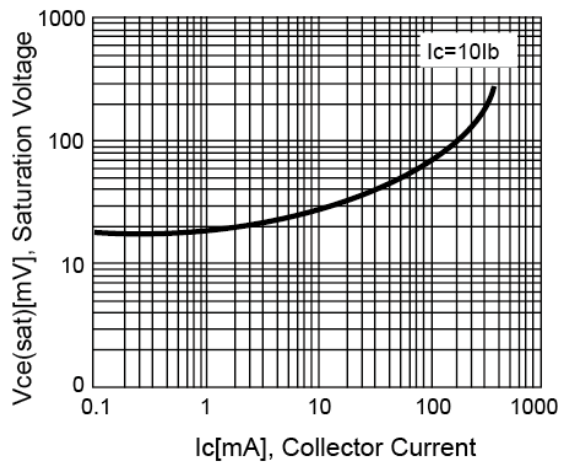
\* Pulse Test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

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

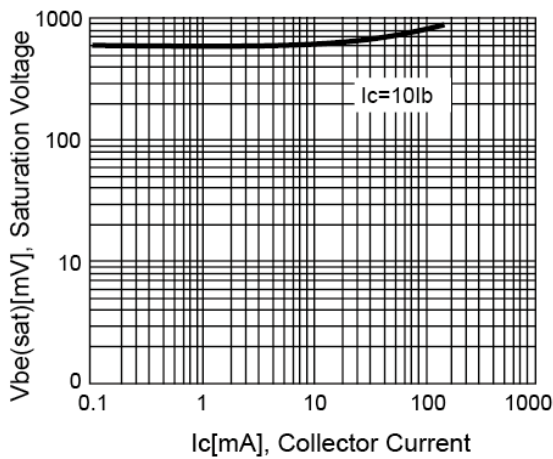
**Figure 1. DC Current Gain**



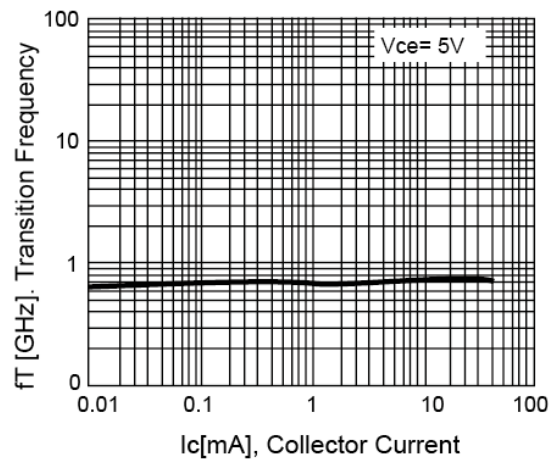
**Figure 2. V<sub>CE(SAT)</sub> v.s. Ic**



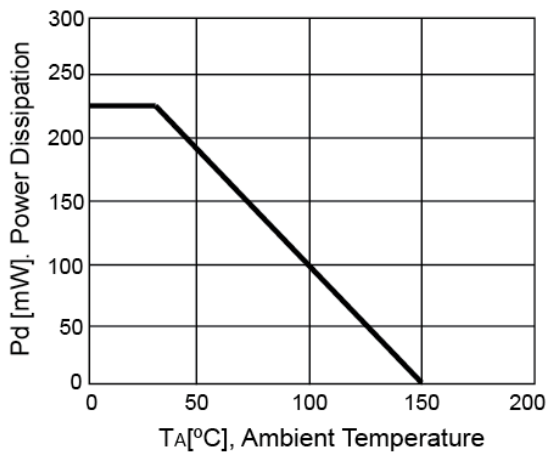
**Figure 3. V<sub>BE(SAT)</sub> v.s. Ic**



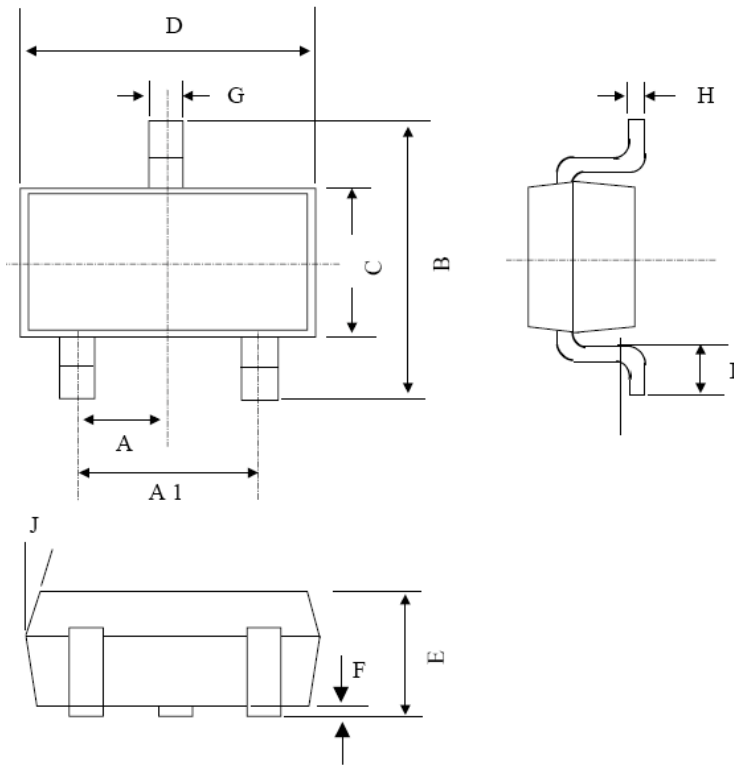
**Figure 4. Cutoff Frequency vs. Ic**



**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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