

SOT-23

Pin Definition:

1. Base
2. Emitter
3. Collector

PRODUCT SUMMARY

BV_{CBO}	40V
BV_{CEO}	25V
I_C	800mA
V_{CE(SAT)}	40mV @ I _C / I _B = 50 / 2.5mA

Features

- Low V_{CE(SAT)}
- Excellent DC Current Gain Characteristics

Structure

- Epitaxial Planar Type
- Complementary to TSB1590CX

Ordering Information

Part No.	Package	Packing
TSD2444CX RF	SOT-23	3Kpcs / 7" Reel

Absolute Maximum Rating (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	25	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	800	mA
Total Power Dissipation	P _{tot}	225	mW
Operating Junction Temperature	T _J	+150	°C
Operating Junction and Storage Temperature Range	T _{STG}	- 55 to +150	°C

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	I _C = 100uA, I _E = 0	BV _{CBO}	40	--	--	V
Collector-Emitter Breakdown Voltage	I _C = 2mA, I _B = 0	BV _{CEO}	25	--	--	V
Emitter-Base Breakdown Voltage	I _E = 100uA, I _C = 0	BV _{EBO}	6	--	--	V
Collector Cutoff Current	V _{CB} = 30V, I _E = 0	I _{CBO}	--	--	0.5	uA
Emitter Cutoff Current	V _{EB} = 6V, I _C = 0	I _{EBO}	--	--	0.5	uA
Collector-Emitter Saturation Voltage	I _C = 50mA, I _B = 2.5mA	*V _{CE(SAT)} 1		0.04	0.06	V
	I _C = 400mA, I _B = 20mA	*V _{CE(SAT)} 2	--	0.15	0.3	
	I _C = 800mA, I _B = 80mA	*V _{CE(SAT)} 3	--	0.25	0.6	
Base-Emitter on Voltage	V _{CE} = 1V, I _C = 10mA	V _{BE(ON)}	--	--	1.0	V
DC Current Transfer Ratio	V _{CE} = 1V, I _C = 100mA	h _{FE} 1	180	--	560	
	V _{CE} = 1V, I _C = 600mA	h _{FE} 2	40	--	--	
Transition Frequency	V _{CE} = 5V, I _C = -100mA	f _T	--	150	--	MHz
Output Capacitance	V _{CB} = 10V, f = 1MHz	Cob	--	15	--	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

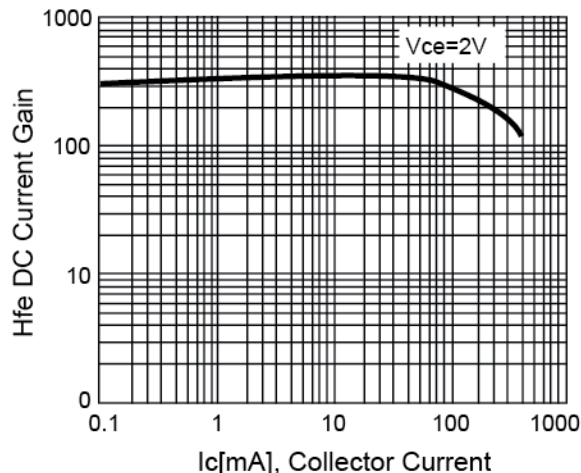


Figure 2. $V_{CE(SAT)}$ v.s. Collector Current

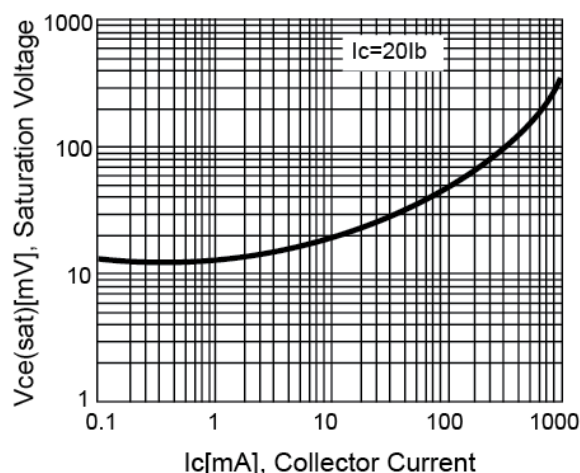


Figure 3. $V_{BE(SAT)}$ v.s. Collector Current

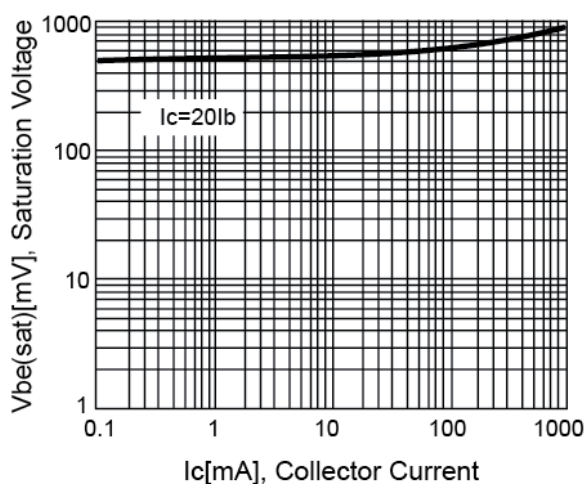


Figure 4. Power Derating Curve

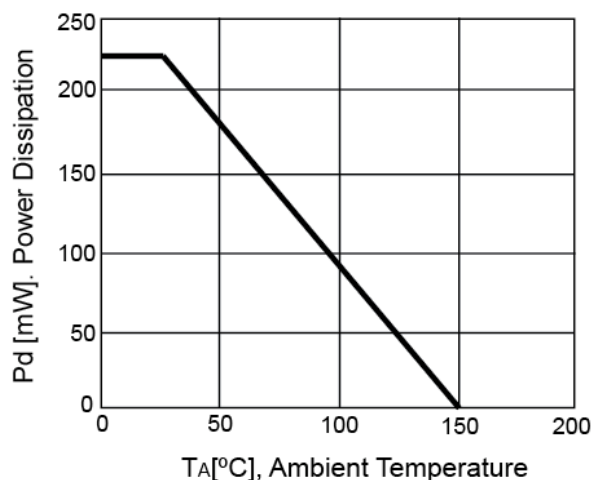
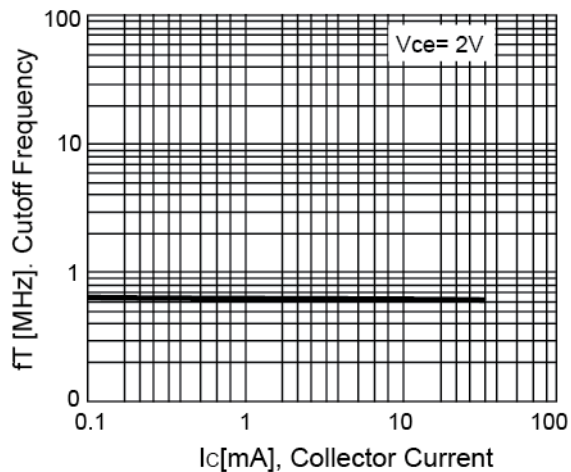
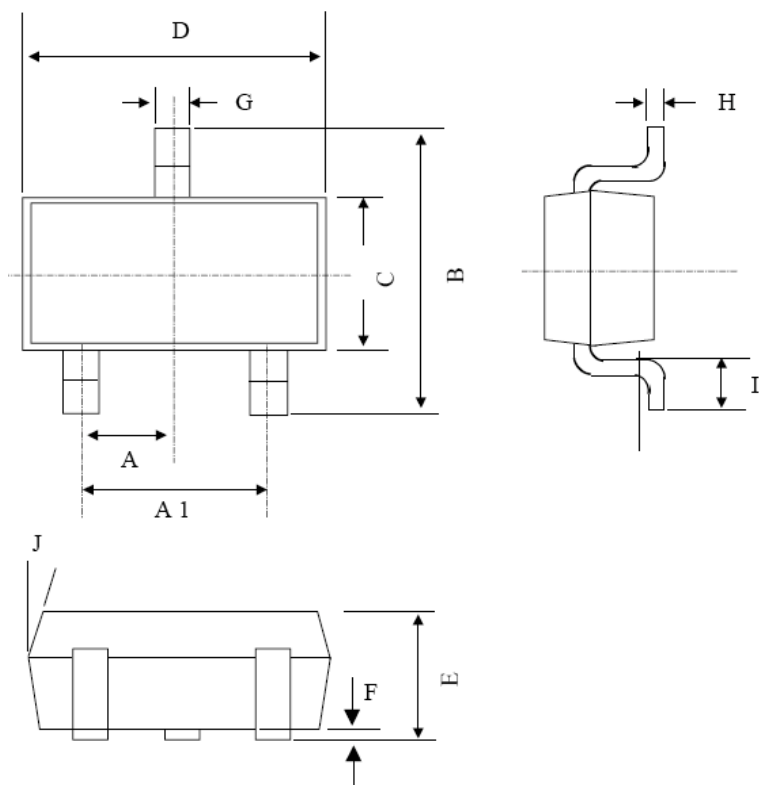


Figure 5. Cutoff Frequency v.s. Collector Current



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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