



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	$I_C = 100\mu A, I_E = 0$	BV_{CBO}	40	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 2mA, I_B = 0$	BV_{CEO}	25	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 100\mu A, I_C = 0$	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_{FE1}	180	--	560	
	$V_{CE} = 1V, I_C = 600mA$	h_{FE2}	40	--	--	
Transition Frequency	$V_{CE} = 5V, I_C = 100mA$	f_T	--	150	--	MHz
Output Capacitance	$V_{CB} = 10V, f = 1MHz$	C_{ob}	--	15	--	pF

* Pulse Test: Pulse width $\leq 380\mu s$, Duty cycle $\leq 2\%$

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

Figure 1. DC Current Gain

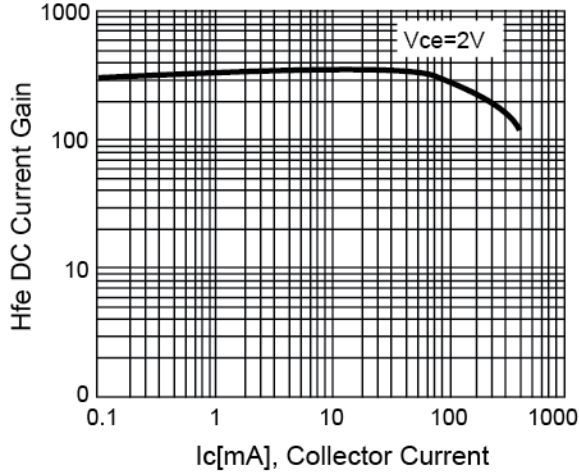


Figure 2. VCE(SAT) v.s. Collector Current

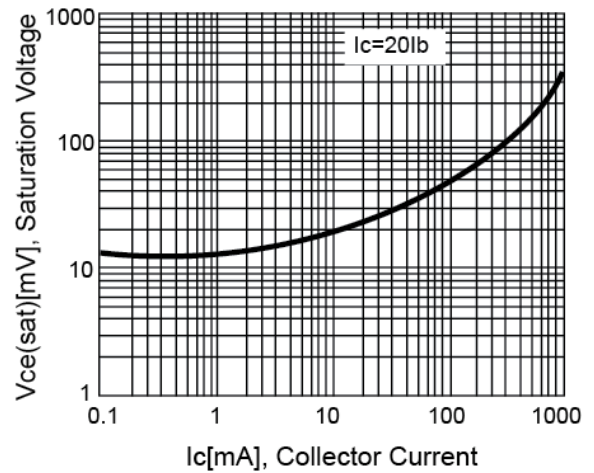


Figure 3. VBE(SAT) v.s. Collector Current

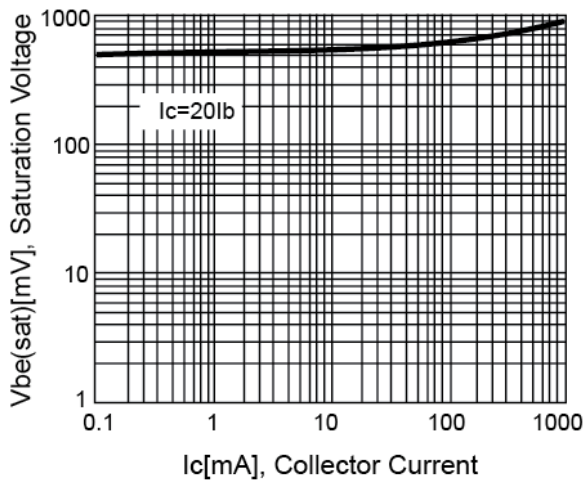


Figure 4. Power Derating Curve

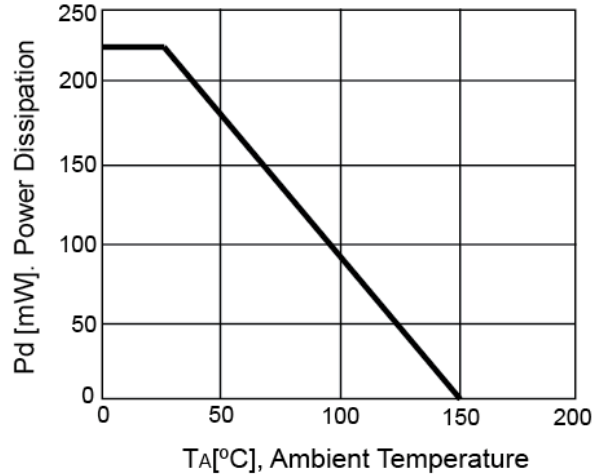
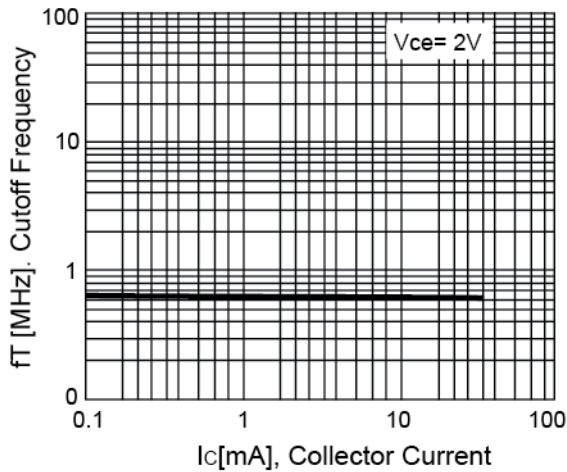
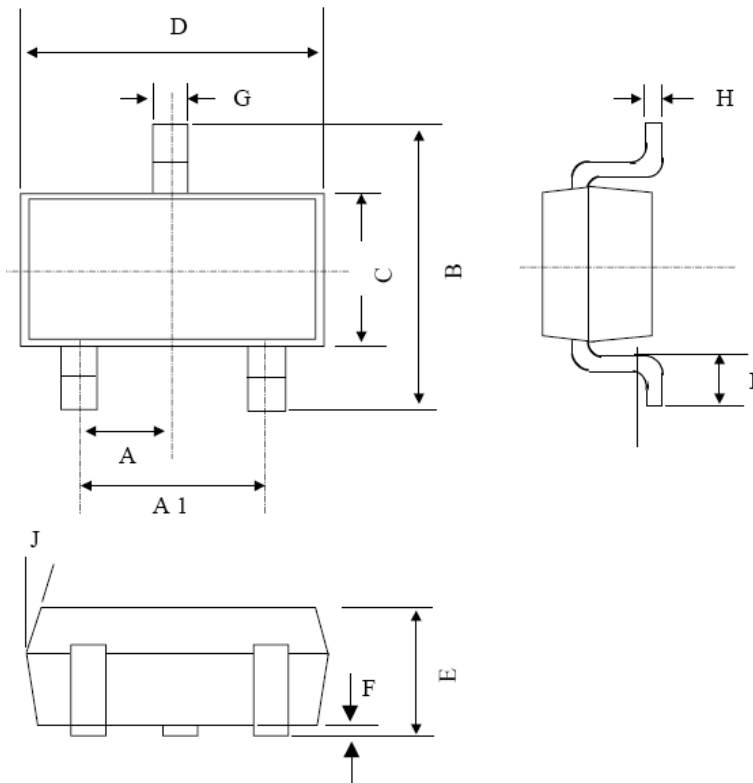


Figure 5. Cutoff Frequency v.s. Collector Current



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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