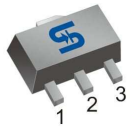
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

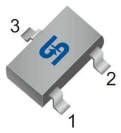
TSB1424

Low Vcesat PNP Transistor

SOT-89



SOT-23



Pin Definition:
1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CBO}	-20V
BV_{CEO}	-20V
I_C	-3A
$V_{CE(SAT)}$	-0.2V @ I_C / I_B = -2A / -100mA

Features

- Low $V_{CE(SAT)}$ -0.2 @ I_C / I_B = -2A / -100mA (Typ.)
- Complementary part with TSD2150

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSB1424CY RM	SOT-89	1Kpcs / 7" Reel
TSB1424CY RMG	SOT-89	1Kpcs / 7" Reel
TSB1424CX RF	SOT-23	3Kpcs / 7" Reel
TSB1424CX RFG	SOT-23	3Kpcs / 7" Reel

Note: "G" denote for Halogen Free Product

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

Parameter		Symbol	Limit		Unit
			SOT-89	SOT-23	
Collector-Base Voltage		V_{CBO}	-20		V
Collector-Emitter Voltage		V_{CEO}	-20		V
Emitter-Base Voltage		V_{EBO}	-6		V
Collector Current	DC	I_C	-3		A
	Pulse		-5 (note1)		
Collector Power Dissipation		P_D	0.6	0.3	W
			2 (note 2)	1 (note 2)	
Operating Junction Temperature		T_J	+150		°C
Operating Junction and Storage Temperature Range		T_{STG}	- 55 to +150		°C

Note: 1. Single pulse, Pw=10ms, 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 = -50uA, I_E = 0	BV_{CBO}	-20	--	--	V
Collector-Emitter Breakdown Voltage	I_C = -10mA, I_B = 0	BV_{CEO}	-20	--	--	V
Emitter-Base Breakdown Voltage	I_E = -50uA, I_C = 0	BV_{EBO}	-6	--	--	V
Collector Cutoff Current	V_{CB} = -20V, I_E = 0	I_{CBO}	--	--	-0.1	uA
Emitter Cutoff Current	V_{EB} = -5V, I_C = 0	I_{EBO}	--	--	-0.1	uA
Collector-Emitter Saturation Voltage	I_C / I_B = -2A / -100mA	$V_{CE(SAT)}$	--	-0.2	-0.5	V
DC Current Transfer Ratio	V_{CE} = -2V, I_C = 100mA	h_{FE}	180	--	390	
Transition Frequency	V_{CE} =-2V, I_E=0.5A, f=100MHz	f_T	--	200	--	MHz
Output Capacitance	V_{CB} = -10V, I_E = 0, f=1MHz	Cob	--	28	--	pF

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

Figure 1. DC Current Gain

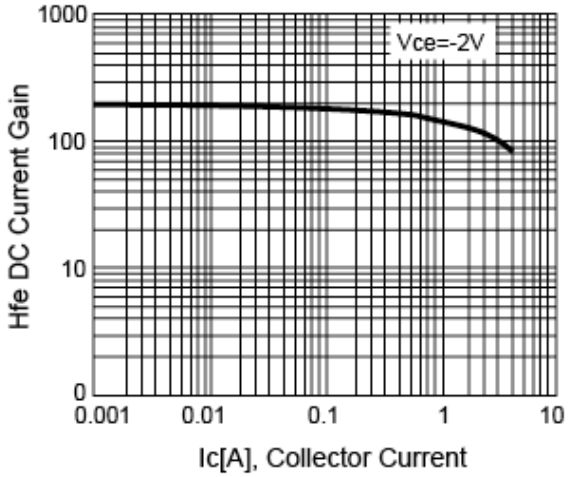


Figure 2. $V_{CE(SAT)}$ v.s. Ic

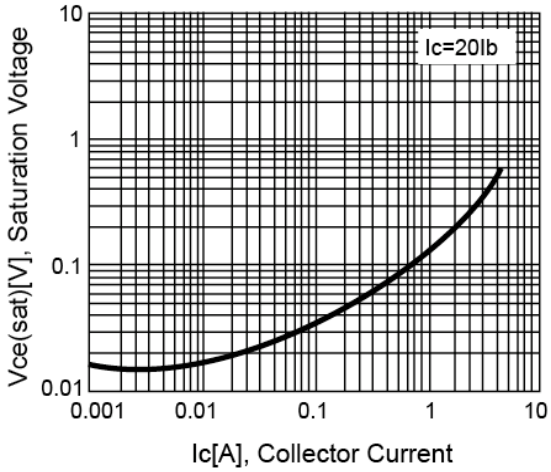


Figure 3. $V_{BE(SAT)}$ v.s. Ic

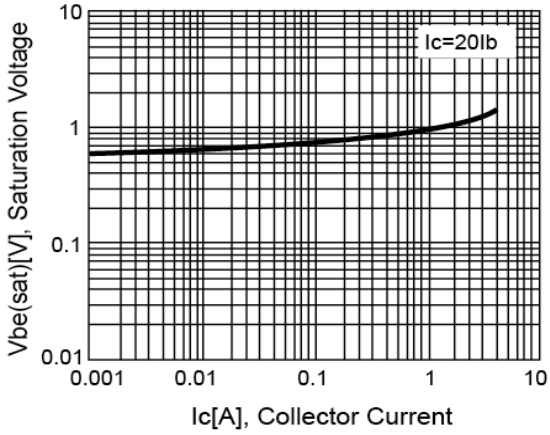


Figure 4. Transition Frequency v.s. I_E

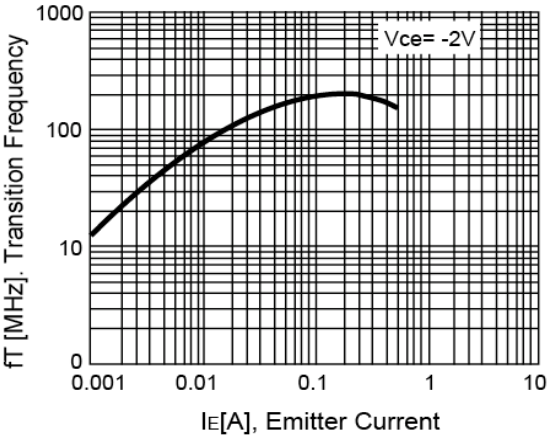


Figure 5. Collector Output Capacitance vs. Vcb

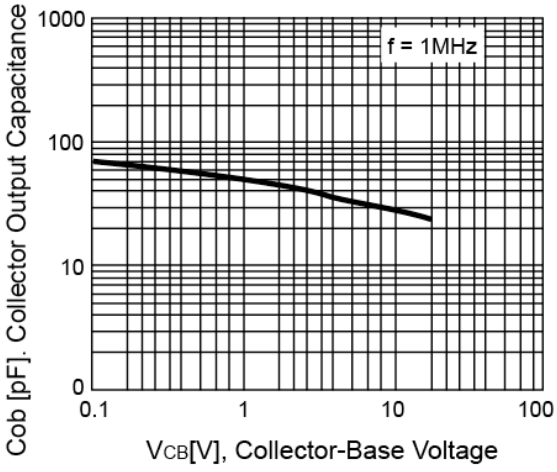
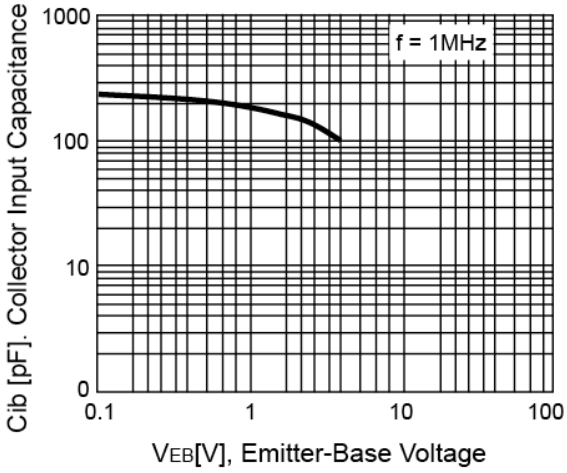


Figure 6. Collector Input Capacitance vs. Veb



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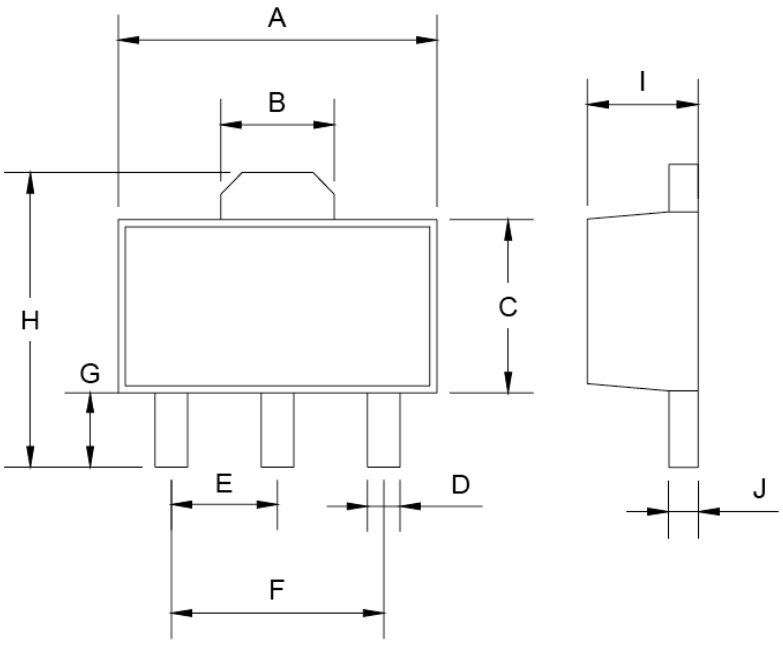
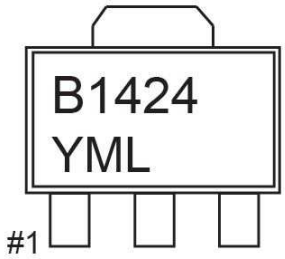
SOT-89 Mechanical Drawing



SOT-89 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.40	4.60	0.173	0.181
B	1.50	1.7	0.059	0.070
C	2.30	2.60	0.090	0.102
D	0.40	0.52	0.016	0.020
E	1.50	1.50	0.059	0.059
F	3.00	3.00	0.118	0.118
G	0.89	1.20	0.035	0.047
H	4.05	4.25	0.159	0.167
I	1.4	1.6	0.055	0.068
J	0.35	0.44	0.014	0.017

Marking Diagram



Y = Year Code

M = Month Code
(**A**=Jan, **B**=Feb, **C**=Mar, **D**=Apl, **E**=May, **F**=Jun, **G**=Jul, **H**=Aug, **I**=Sep, **J**=Oct, **K**=Nov, **L**=Dec)
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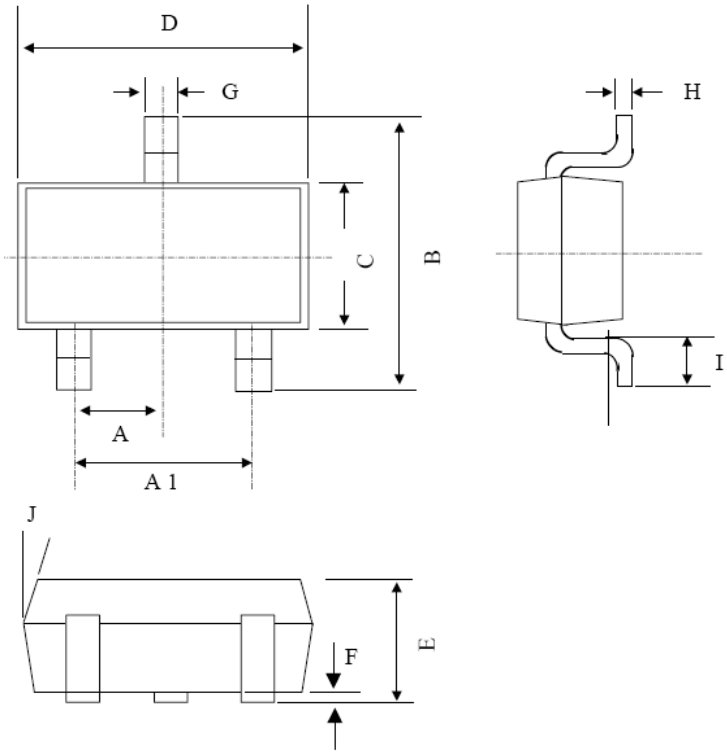
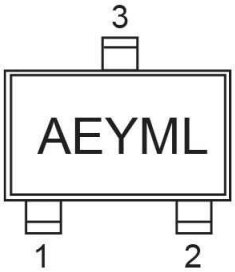
SOT-23 Mechanical Drawing



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

Marking Diagram



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