

SOT-89



Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CBO}	-30V
BV_{CEO}	-20V
I_C	-5A
$V_{CE(SAT)}$	-0.35V @ $I_C / I_B = -4A / -100mA$

Features

- Low $V_{CE(SAT)}$ -0.35 @ $I_C / I_B = -4A / -100mA$ (Typ.)
- Excellent DC current gain characteristics

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSB1386CY RM	SOT-89	1Kpcs / 7" Reel

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-30	V
Collector-Emitter Voltage	V_{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	DC	-5
		Pulse	-10 (note1)
Collector Power Dissipation	P_D	0.5	W
Operating Junction Temperature	T_J	+150	°C
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	°C

Note: 1. Single pulse, $P_w=10ms$, $Duty \leq 50\%$

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	$I_C = -50\mu A, I_E = 0$	BV_{CBO}	-30	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = -1mA, I_B = 0$	BV_{CEO}	-20	--	--	V
Emitter-Base Breakdown Voltage	$I_E = -50\mu A, I_C = 0$	BV_{EBO}	-6	--	--	V
Collector Cutoff Current	$V_{CB} = -20V, I_E = 0$	I_{CBO}	--	--	-0.5	μA
Emitter Cutoff Current	$V_{EB} = -5V, I_C = 0$	I_{EBO}	--	--	-0.5	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = -4A / -100mA$	$V_{CE(SAT)}$	--	-0.35	-0.6	V
Base-Emitter Saturation Voltage	$I_C / I_B = -3A / -60mA$	$V_{BE(SAT)}$	--	-1.2	-1.5	V
DC Current Transfer Ratio	$V_{CE} = -2V, I_C = -500mA$	h_{FE}	180	--	390	
Transition Frequency	$V_{CE} = -6V, I_E = -50mA, f = 30MHz$	f_T	--	120	--	MHz
Output Capacitance	$V_{CB} = -5V, I_E = 0, f = 1MHz$	C_{ob}	--	60	--	pF

Note: Pulse test; $P_w \leq 350\mu s$, $Duty \leq 2\%$

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

Figure 1. DC Current Gain

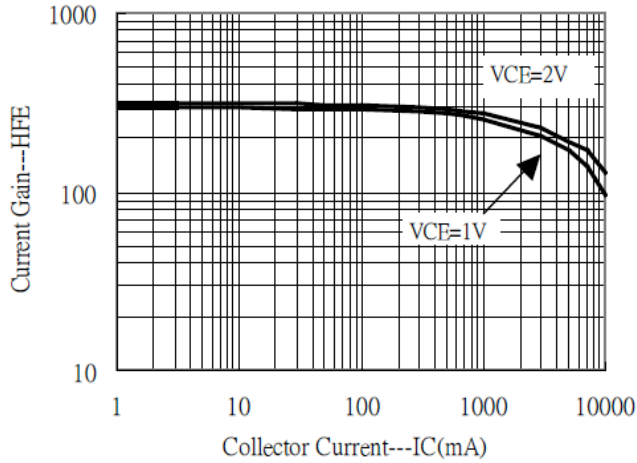


Figure 2. VCE(SAT) v.s. IC

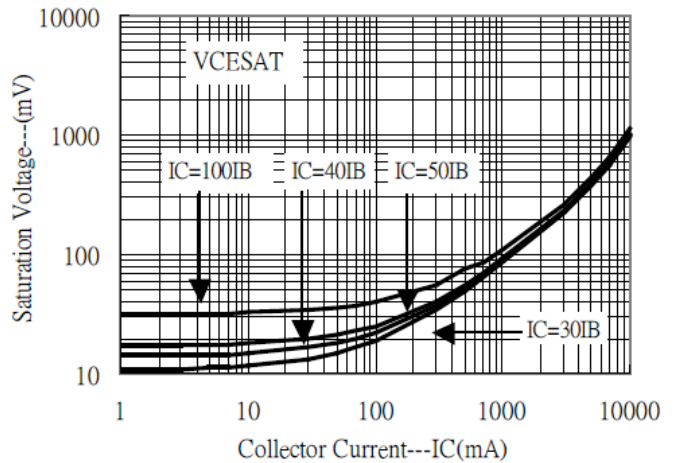


Figure 3. VBE(SAT) v.s. IC

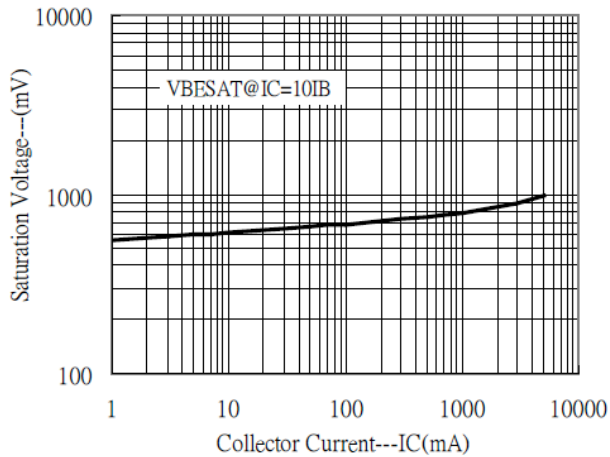


Figure 4. Output Characteristics

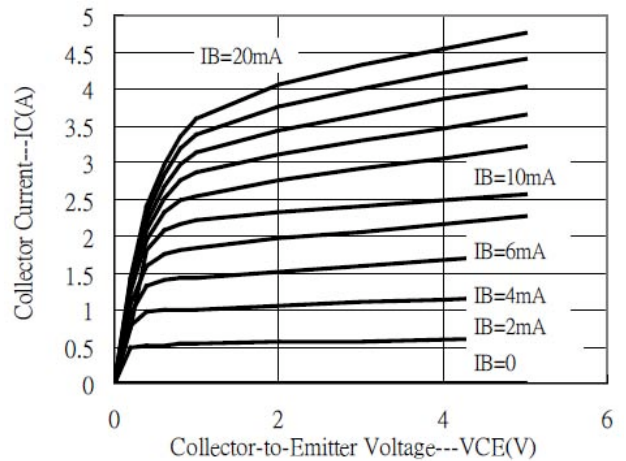


Figure 5. Output Characteristics

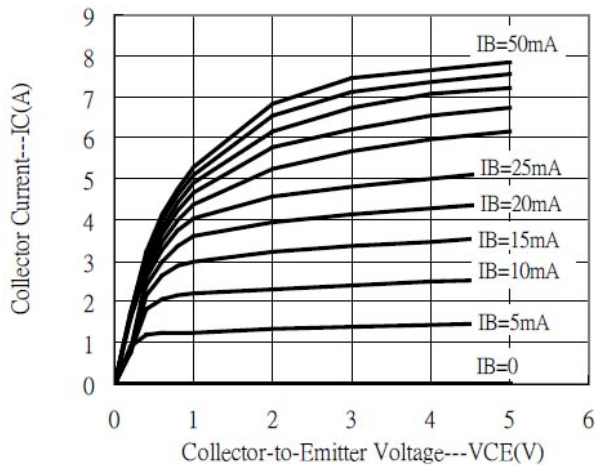
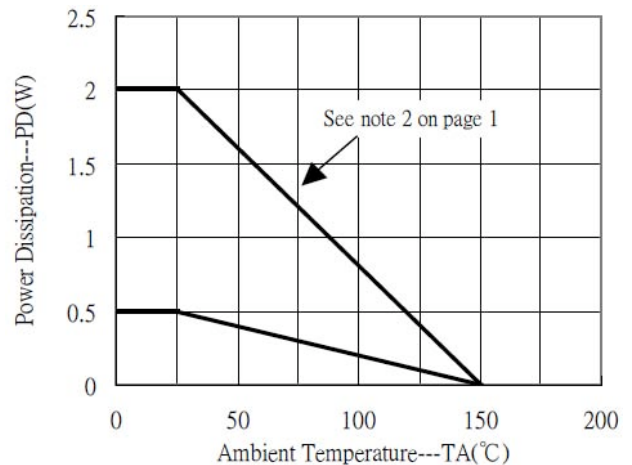
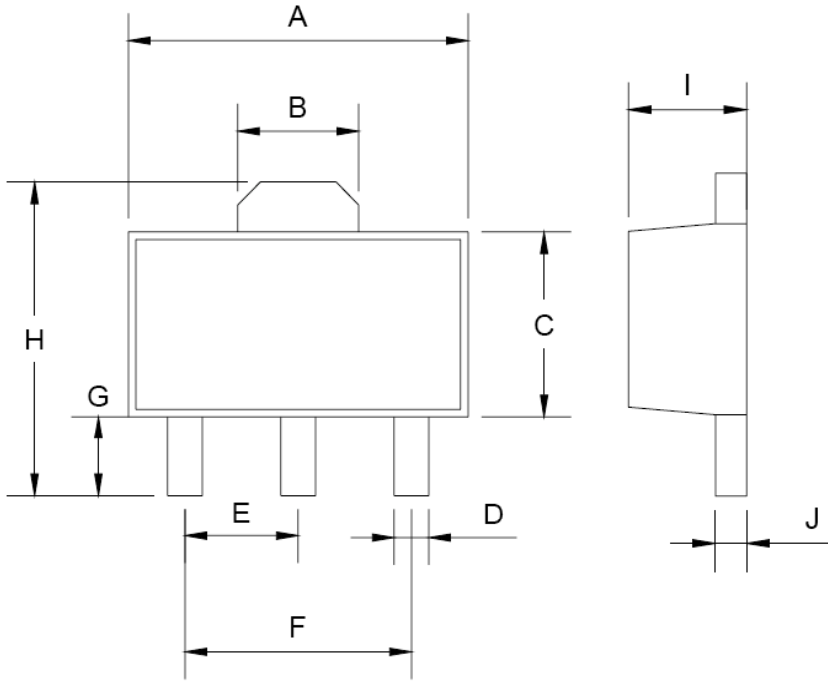


Figure 6. Collector Input Capacitance vs. Veb

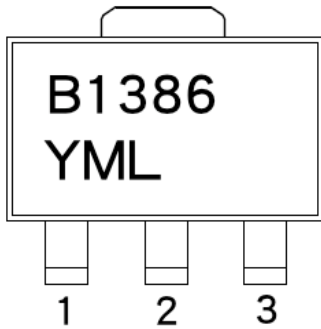


SOT-89 Mechanical Drawing



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)
- L** = Lot Code
- X** = hFE rank code

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