



TSB1386

Low Frequency PNP Transistor

TO-252



SOT-89



Pin assignment:

1. Base
2. Collector
3. Emitter

$BV_{CEO} = - 20V$

$I_C = - 5A$

$V_{CE(SAT)} = - 0.35V(\text{typ.}) @I_C / I_B = - 4A / - 0.1A$

Features

- ◇ Low $V_{CE(SAT)}$.
- ◇ Excellent DC current gain characteristics

Structure

- ◇ Epitaxial planar type.
- ◇ PNP silicon transistor

Ordering Information

Part No.	Packing	Package
TSB1386CP	Tape & Reel	TO-252
TSB1386CY		SOT-89

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

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	- 30V	V
Collector-Emitter Voltage	V_{CEO}	- 20V	V
Emitter-Base Voltage	V_{EBO}	- 6	V
Collector Current	DC	- 5	A
	Pulse	- 10	
Collector Power Dissipation	TO-252	1	W
	SOT-89	0.5	
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%

Electrical Characteristics

Ta = 25 °C unless otherwise noted

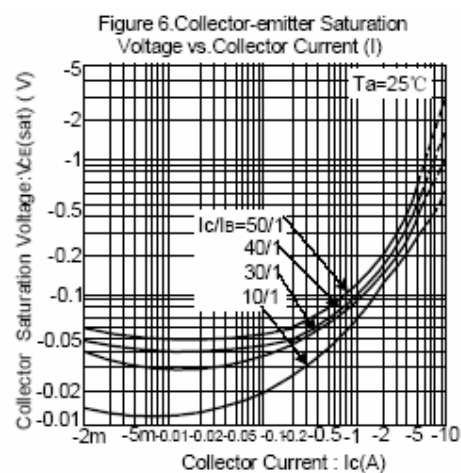
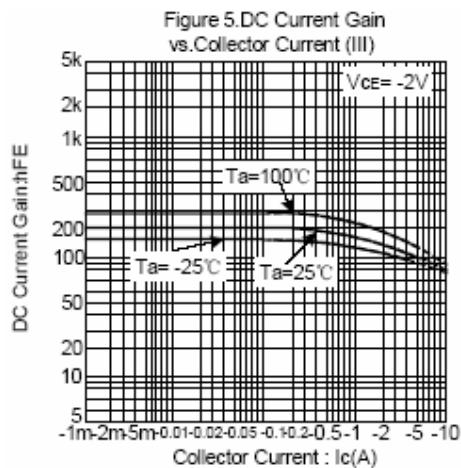
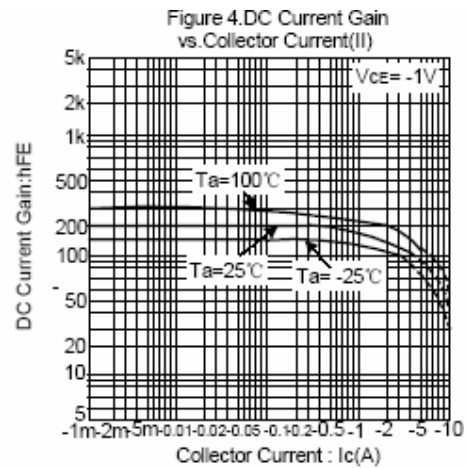
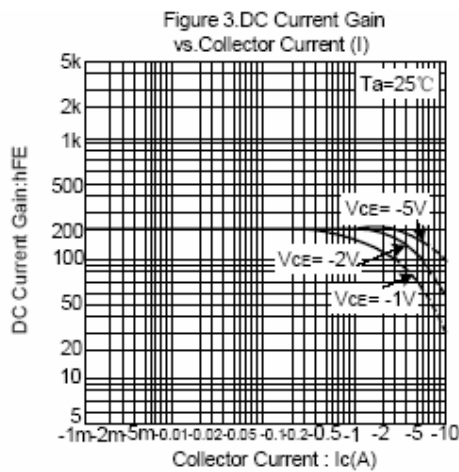
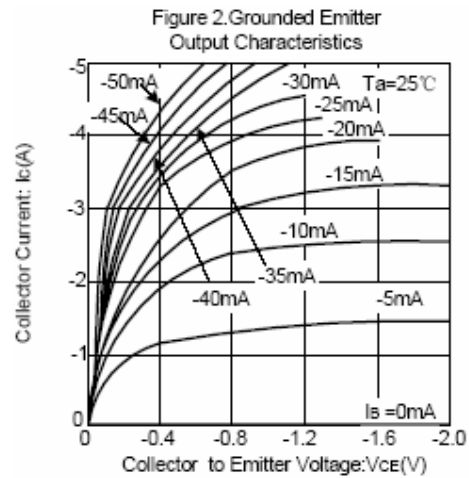
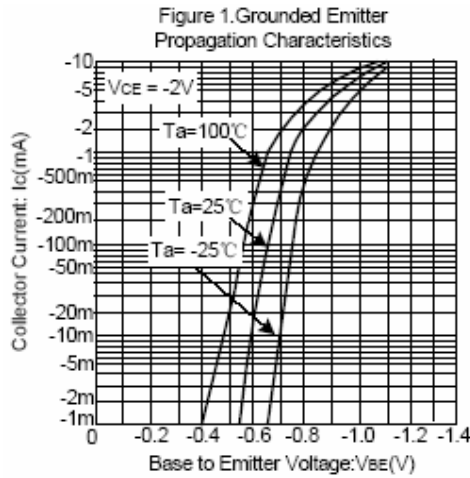
Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	$I_C = - 50\mu A$	BV_{CBO}	- 30			V
Collector-Emitter Breakdown Voltage	$I_C = - 1mA$	BV_{CEO}	- 20			V
Emitter-Base Breakdown Voltage	$I_E = - 50\mu A$	BV_{EBO}	- 6			V
Collector Cutoff Current	$V_{CB} = - 20V$	I_{CBO}			- 0.5	μA
Emitter Cutoff Current	$V_{EB} = - 5V$	I_{EBO}			-0.5	μA
Collector-Emitter Saturation Voltage	$I_C / I_B = - 4A / - 0.1A$	$V_{CE(SAT)}$			- 1.0	V
DC Current Transfer Ratio	$V_{CE} = - 2V, I_C = - 0.5A$	h_{FE}	82		390	
Transition Frequency	$V_{CE} = - 6V, I_E = - 50mA,$ $f = 30MHz$	f_T		120		MHz
Output Capacitance	$V_{CB} = - 5V, I_E = 0A, f = 1MHz$	Cob		60		pF

Note : pulse test: pulse width <=350uS, duty cycle <=2%

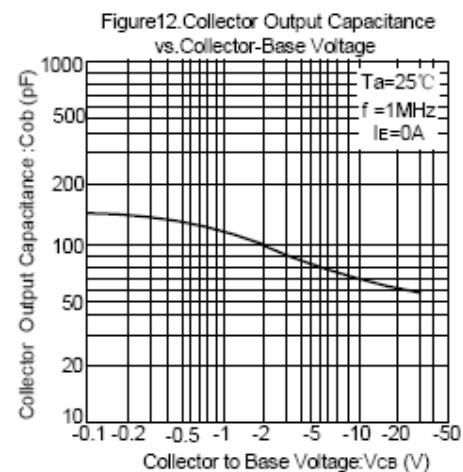
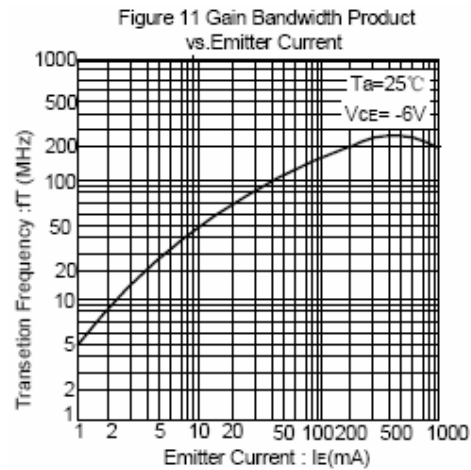
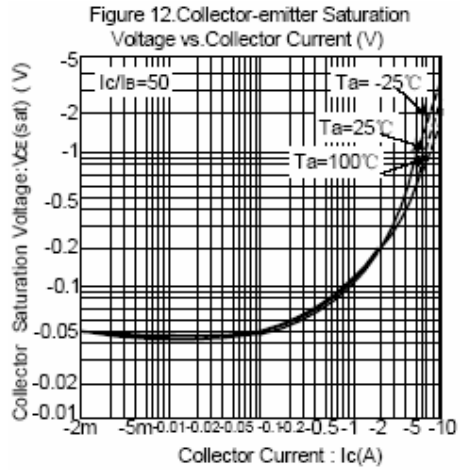
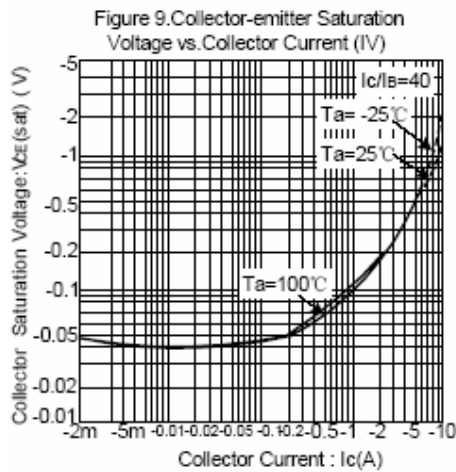
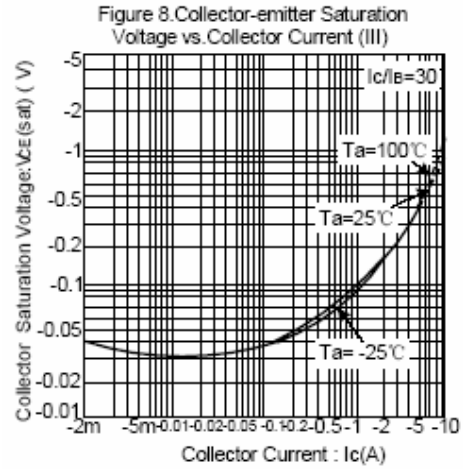
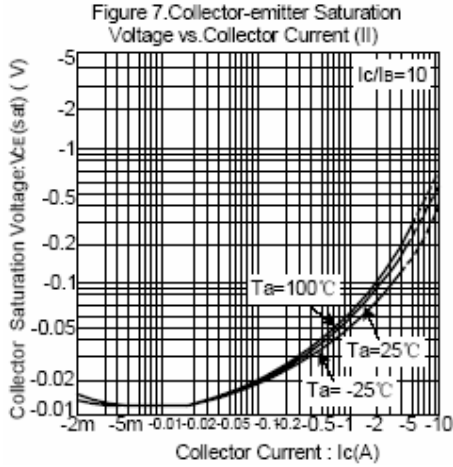
Classification Of h_{FE}

Rank	P	Q	R
Range	82 - 180	120 - 270	180 - 390

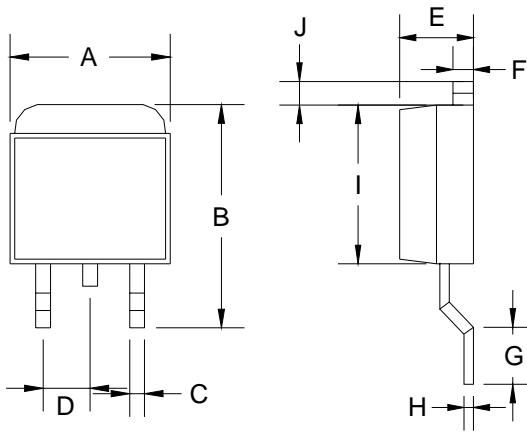
Electrical Characteristics Curve



Electrical Characteristics Curve

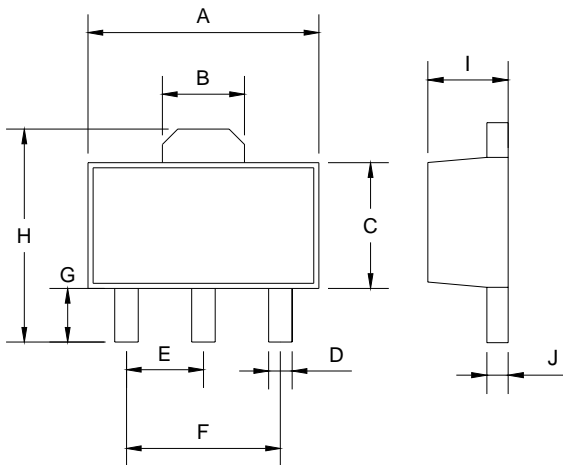


TO-252 Mechanical Drawing



TO-252 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.570	6.840	0.259	0.269
B	9.250	10.400	0.364	0.409
C	0.550	0.700	0.022	0.028
D	2.560	2.670	0.101	0.105
E	2.300	2.390	0.090	0.094
F	0.490	0.570	0.019	0.022
G	1.460	1.580	0.057	0.062
H	0.520	0.570	0.020	0.022
I	5.340	5.550	0.210	0.219
J	1.460	1.640	0.057	0.065

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