

■ Features

- Low VCE(sat).
 $V_{CE(sat)} = -0.35V$ (Typ.)
 $(I_C/I_B = -4A / -0.1A)$
- Excellent DC current gain
- Epitaxial planar type
- PNP silicon transistor


SOT-89

1.BASE

2.COLLECTOR

3.EMITTER

■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	-30	V
Collector-emitter voltage	V _{CEO}	-20	V
Emitter-base voltage	V _{EBO}	-6	V
Collector current	I _C	-5	A
Collector current(Pulse)	I _{CP} *	-10	A
Collector power dissipation	P _C	0.5	W
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* Single pulse, Pw=10ms

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV _{CB0}	I _C =-50 u A	-30			V
Collector-emitter breakdown voltage	BV _{CEO}	I _C =-1mA	-20			V
Emitter-base breakdown voltage	BV _{EBO}	I _E =-50 u A	-6			V
Collector cutoff current	I _{CB0}	V _{CB} =-20V			-0.5	u A
Emitter cutoff current	I _{EBO}	V _{EB} =-5V			-0.5	u A
DC current transfer ratio	V _{CE(sat)}	I _C =-4A, I _B =-0.1A		-0.35	-1	V
Collector-emitter saturation voltage	hFE	V _{CE} =-2V, I _C =-0.5A	82		390	
Transition frequency	f _T	V _{CE} =-6V, I _E =50mA, f=30MHz		120		MHz
Output capacitance	C _{ob}	V _{CB} =-20V, I _E =0A, f=1MHz		60		pF

■ hFE Classification

Type	2SB1386-P	2SB1386-Q	2SB1386-R
Range	82-180	120-270	180-390

■ Typical Characteristics

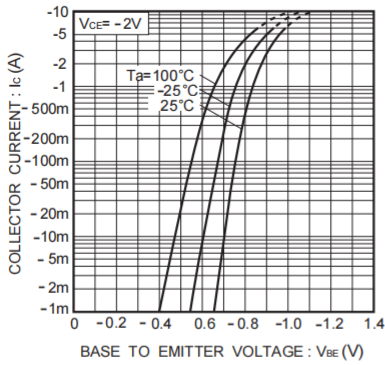


Fig.1 Grounded emitter propagation characteristics

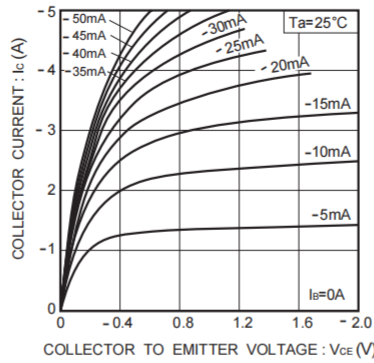


Fig.2 Grounded emitter output characteristics

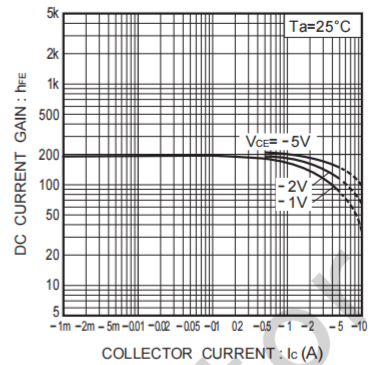


Fig.3 DC current gain vs. collector current (I)

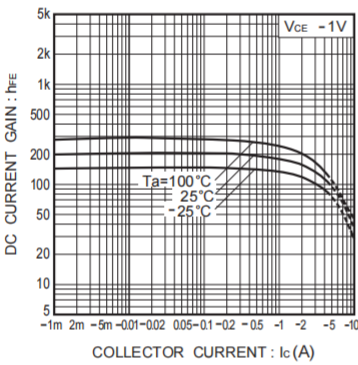


Fig.4 DC current gain vs. collector current (II)

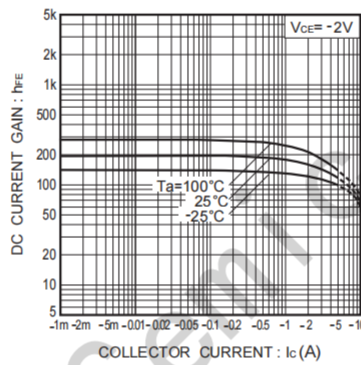


Fig.5 DC current gain vs. collector current (III)

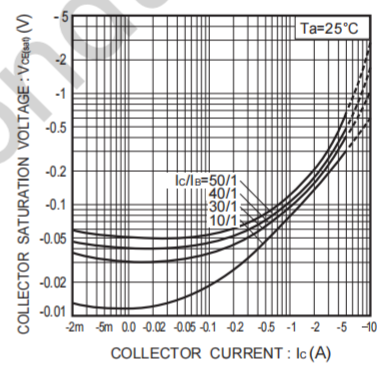


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

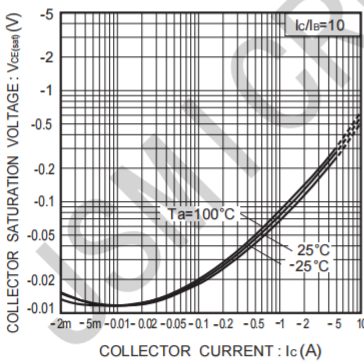


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

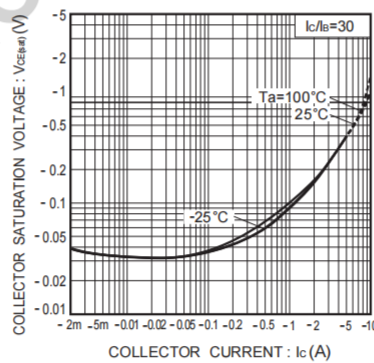


Fig.8 Collector-emitter saturation voltage vs. collector current (III)

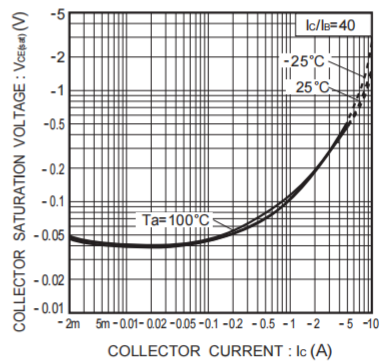


Fig.9 Collector-emitter saturation voltage vs. collector current (IV)

■ Typical Characteristics

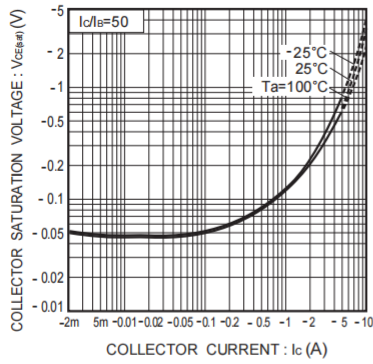


Fig.10 Collector-emitter saturation voltage vs. collector current (V)

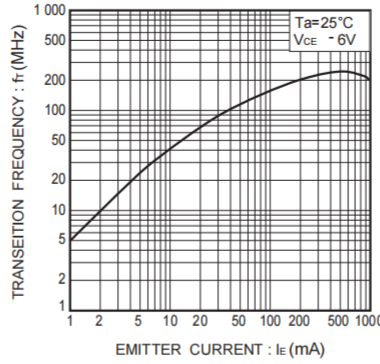


Fig.11 Gain bandwidth product vs. emitter current

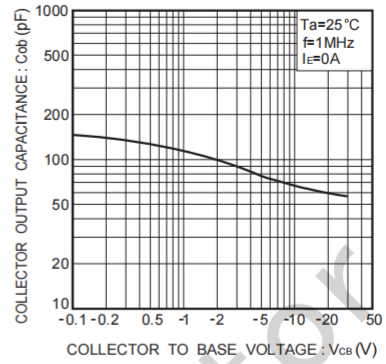


Fig.12 Collector output capacitance vs. collector-base voltage

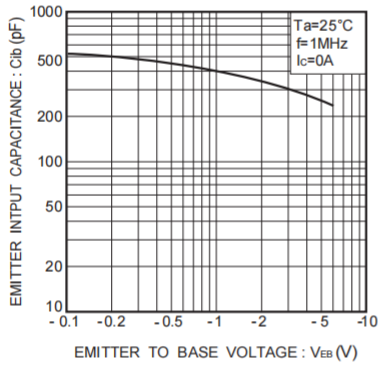


Fig.13 Emitter input capacitance vs. emitter-base voltage

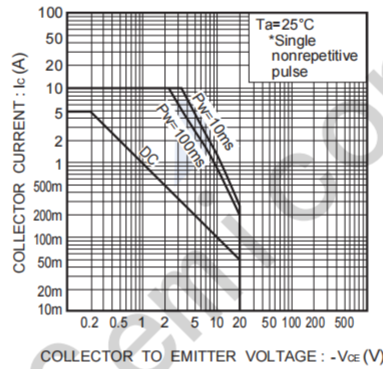
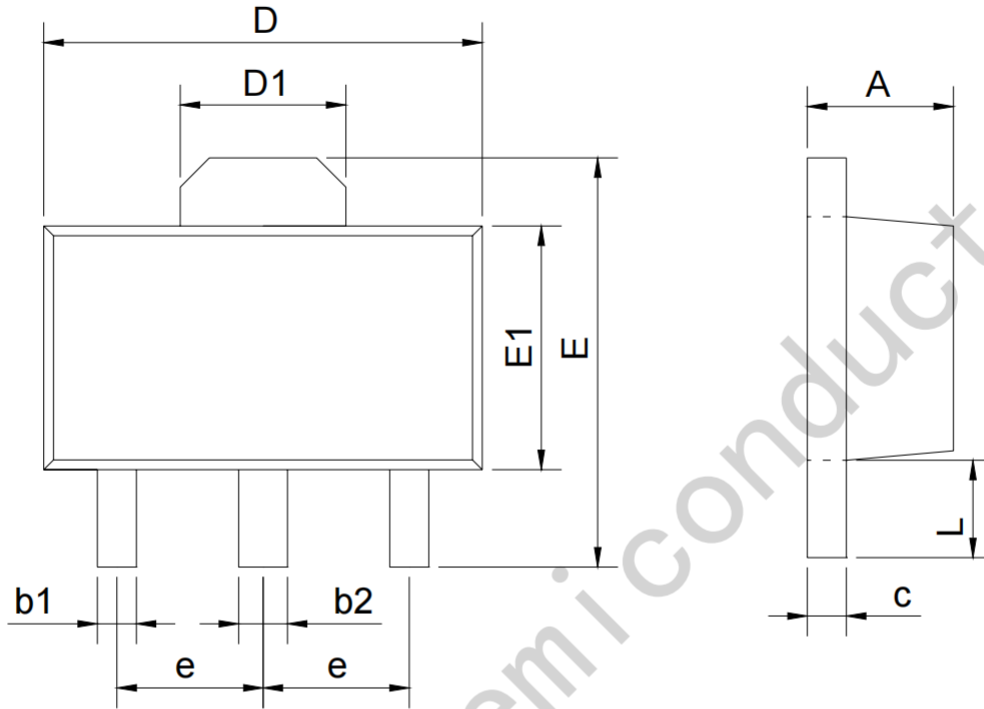


Fig.14 Safe operation area

Package Information

SOT-89



SYMBOL	mm	
	min	max
A	1.40	1.60
b1	0.35	0.50
b2	0.45	0.60
c	0.36	0.46
D	4.30	4.70
D1	1.40	1.80
E	4.00	4.40
E1	2.30	2.70
e	1.50BSC	
L	0.80	1.20

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