

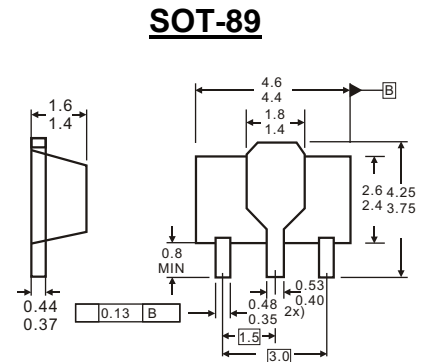
1. BASE
2. COLLECTOR
3. EMITTER

### Features

- ✧ Excellent DC current gain characteristics
- ✧ Complements the 2SB1386

### MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	50	V
V <sub>CEO</sub>	Collector-Emitter Voltage	20	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	5	A
P <sub>C</sub>	Collector Power Dissipation	500	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



Dimensions in inches and (millimeters)

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =50μA, I <sub>E</sub> =0	50			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	20			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =50μA, I <sub>B</sub> =0	6			V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> =40V, I <sub>E</sub> =0			0.5	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			0.5	μA
DC current gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =0.5A	120		390	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =4A, I <sub>B</sub> =100mA			1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =50mA, f=100MHz		150		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz		30		pF

### CLASSIFICATION OF h<sub>FE</sub>

Rank	Q	R
Range	120-270	180-390
Marking	AHQ	AHR



### Typical Characteristics

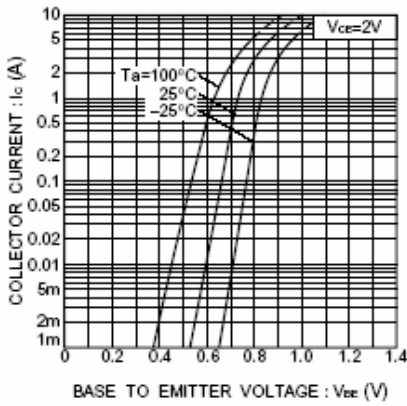


Fig.1 Grounded emitter propagation characteristics

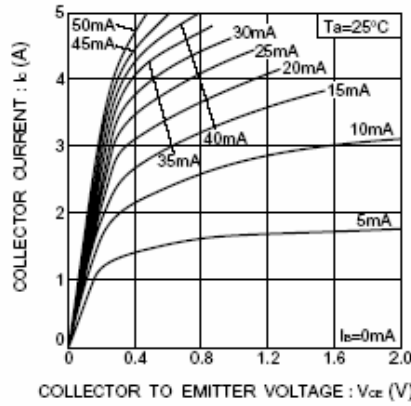


Fig.2 Grounded emitter output characteristics

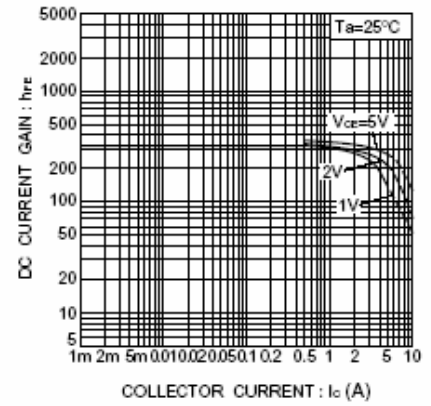


Fig.3 DC current gain vs. collector current ( I )

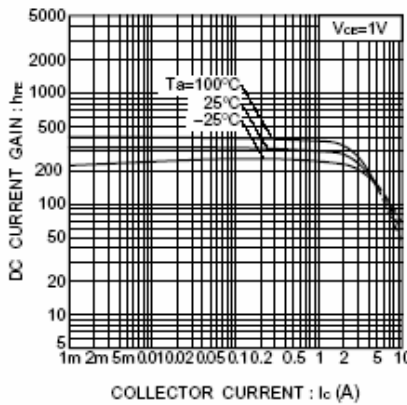


Fig.4 DC current gain vs. collector current ( II )

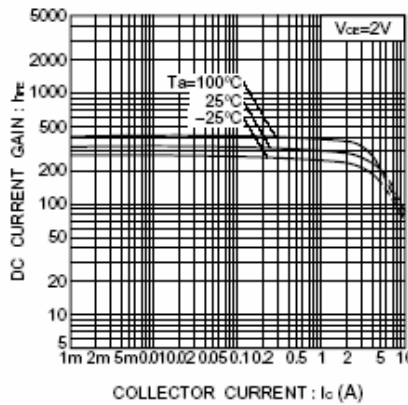


Fig.5 DC current gain vs. collector current ( III )

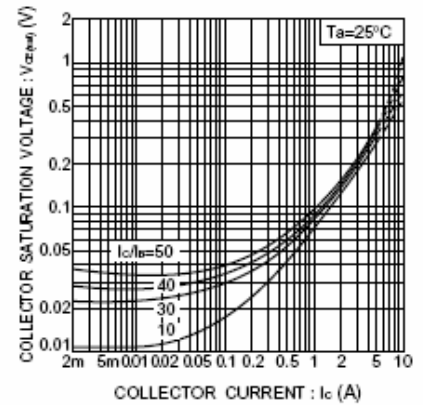


Fig.6 Collector-emitter saturation voltage vs. collector current ( I )

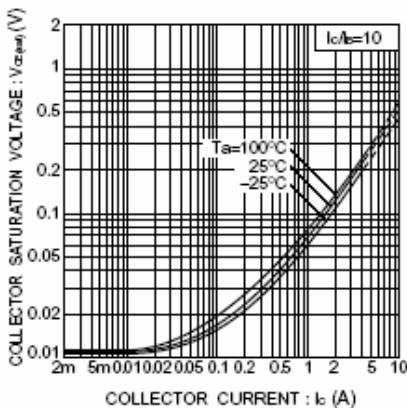


Fig.7 Collector-emitter saturation voltage vs. collector current ( II )

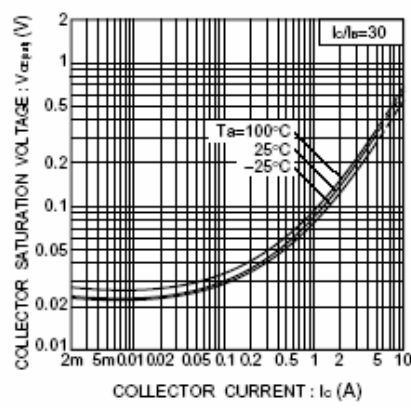


Fig.8 Collector-emitter saturation voltage vs. collector current ( III )

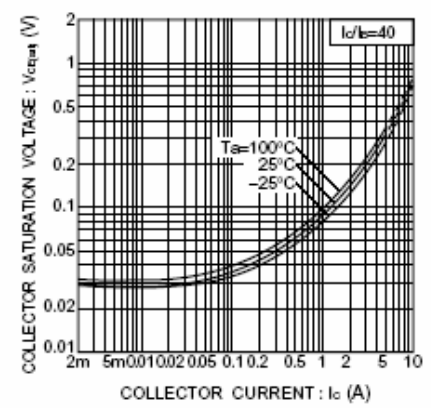


Fig.9 Collector-emitter saturation voltage vs. collector current ( IV )



### Typical Characteristics

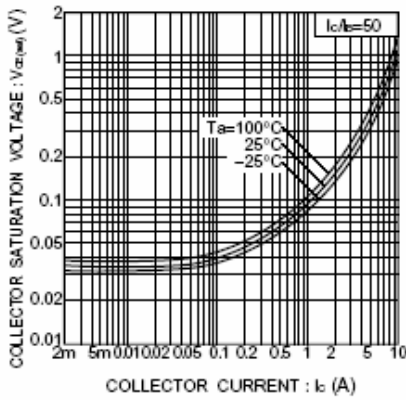


Fig.10 Collector-emitter saturation voltage vs. collector current (V)

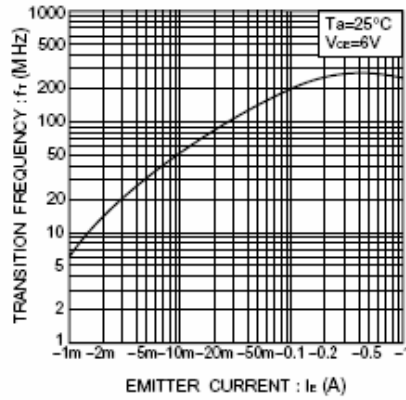


Fig.11 Gain bandwidth product vs. emitter current

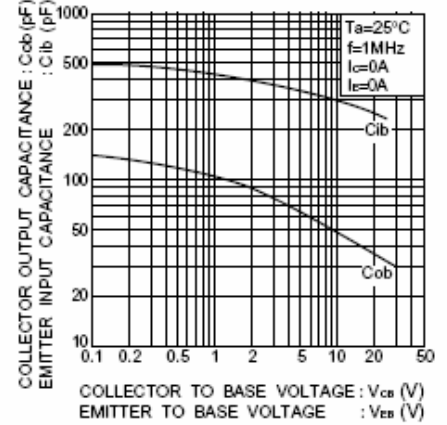


Fig.12 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

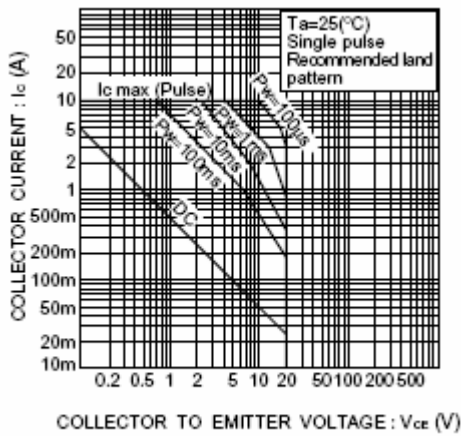


Fig.13 Safe operating area

Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOT -89	1000pcs	7inch	10,000pcs	203×203×195	40,000pcs	438×438×220