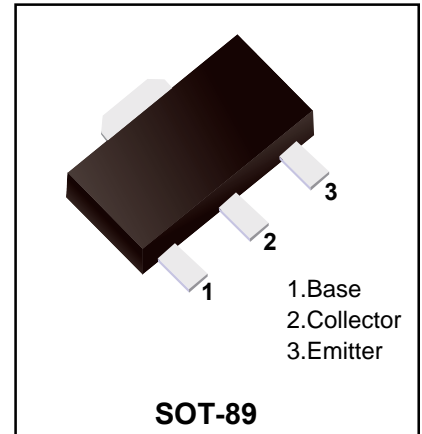


## Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

### Features

- Small Flat Package
- High Breakdown Voltage
- Excellent DC Current Gain Linearity



### Absolute Maximum Rating (Ta=25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	80	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	1	A
P <sub>C</sub>	Collector Power Dissipation	500	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	250	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

### Electrical Characteristics (Ta=25°C)

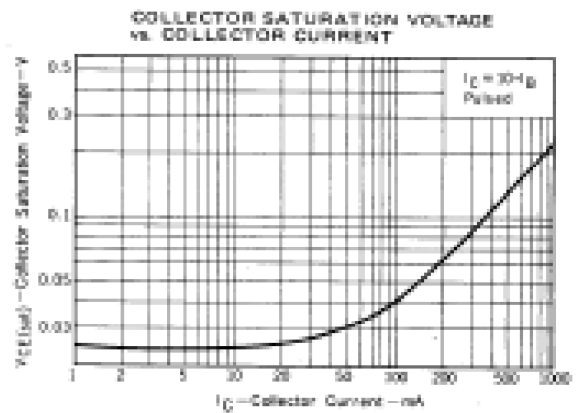
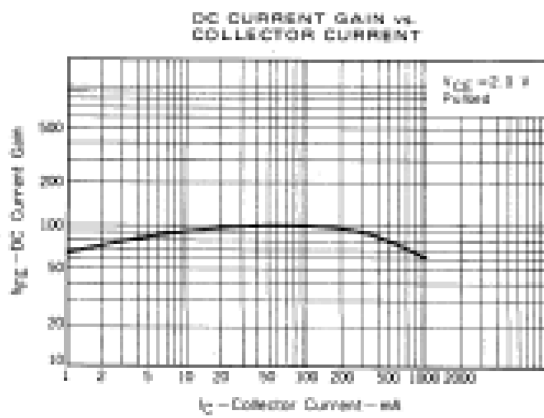
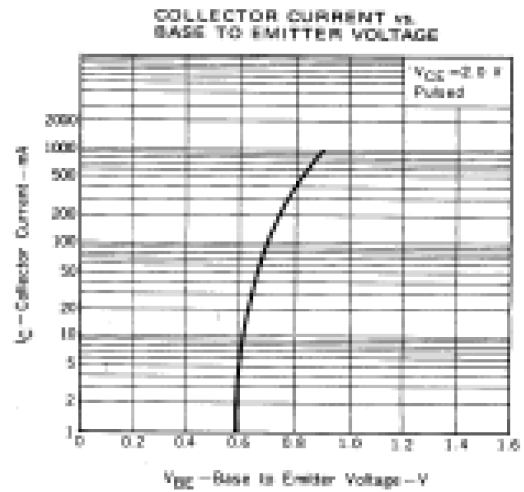
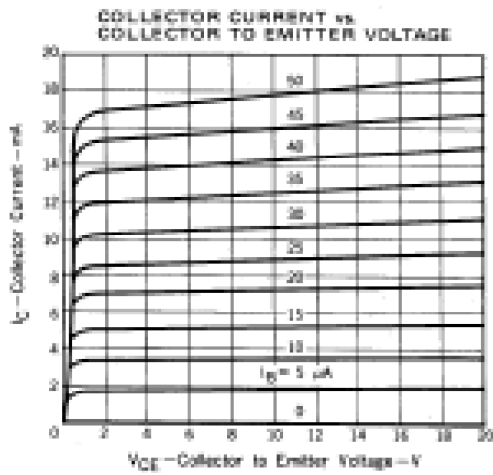
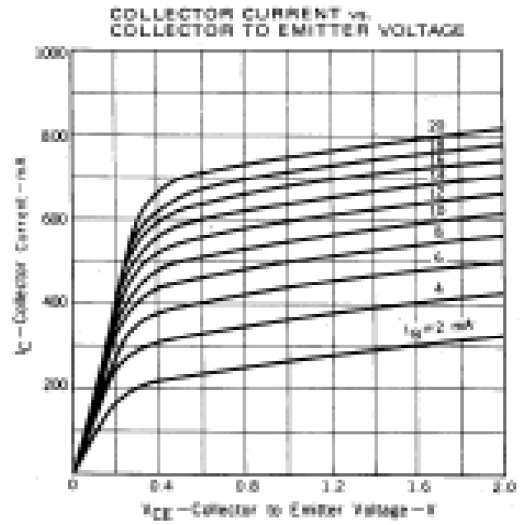
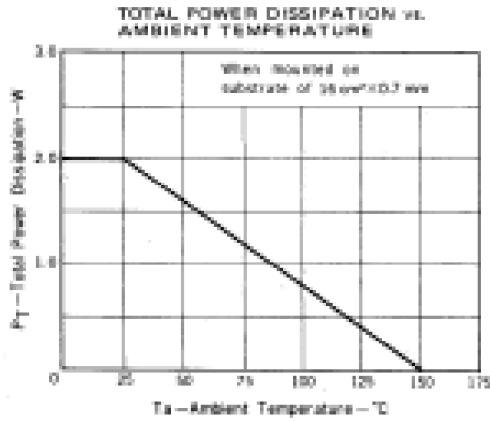
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =0.1mA, I <sub>E</sub> =0	100			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	80			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =0.1mA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =100V, I <sub>E</sub> =0			0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			0.1	μA
DC current gain	h <sub>FE(1)</sub> *	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	90		400	
	h <sub>FE(2)</sub> *	V <sub>CE</sub> =2V, I <sub>C</sub> =500mA	25			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub> *	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			0.5	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub> *	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			1.5	V
Base-emitter voltage	V <sub>BE</sub> *	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA	0.6		0.7	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA		160		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		12		pF

\*Pulse test

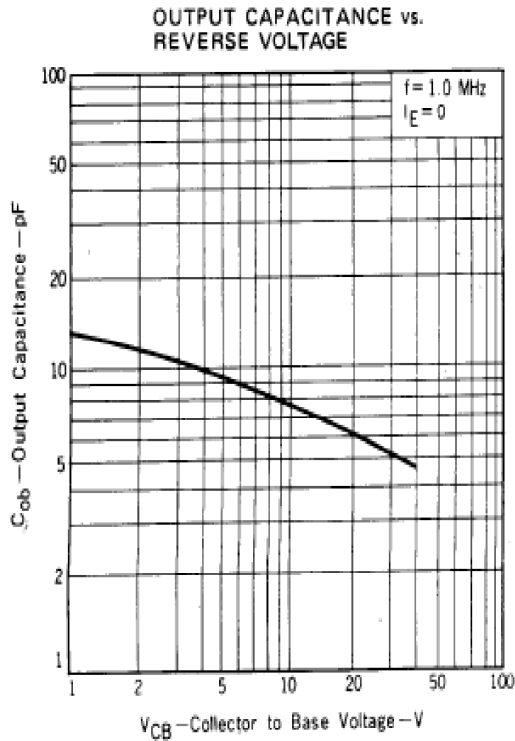
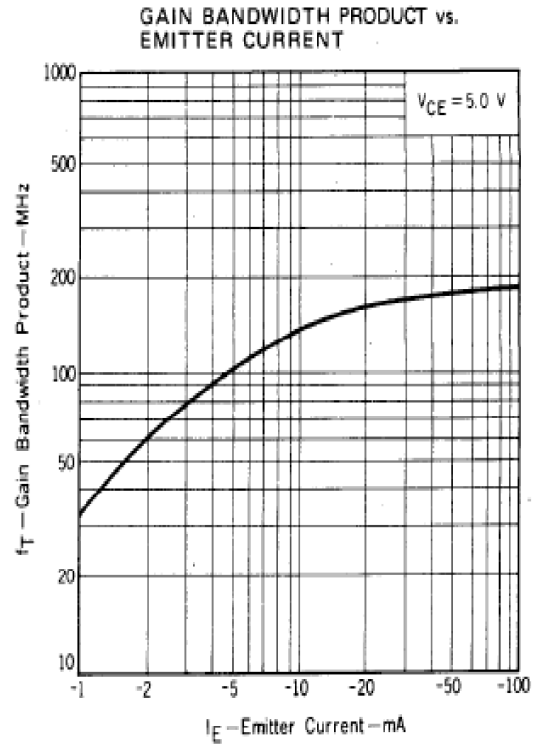
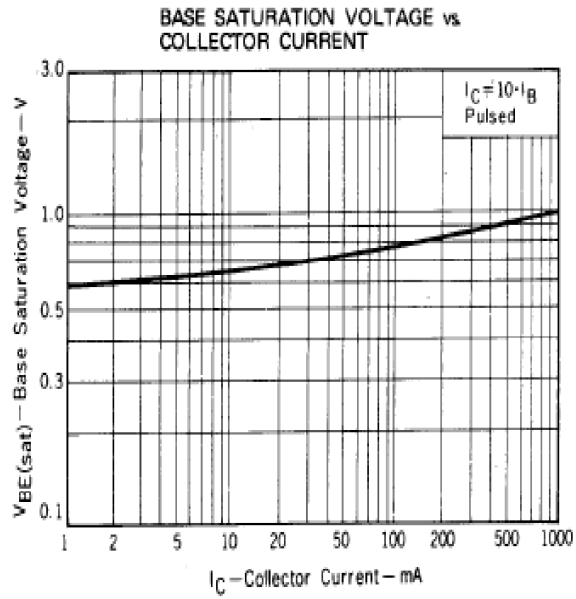
### h<sub>FE</sub> Classification

RANK	W	V	U
RANGE	90 - 180	135 - 270	200 - 400
MARKING	BW	BV	BU

**Typical Characteristics**



**Typical Characteristics**



**Ordering information**

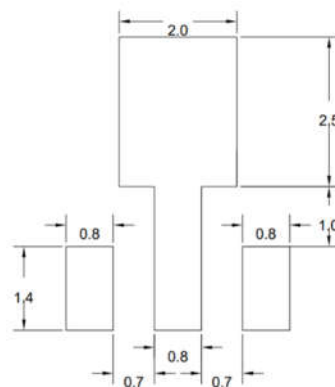
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

**Package Dimensions**

**SOT-89**

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

**The recommended mounting pad size**



UNIT:MM

## Disclaimer

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