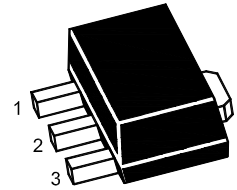


Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

FEATURES

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



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

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

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

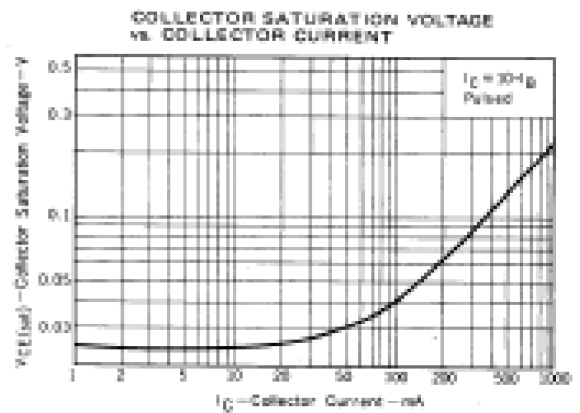
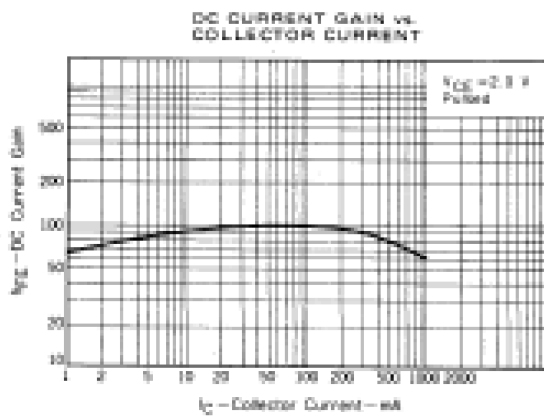
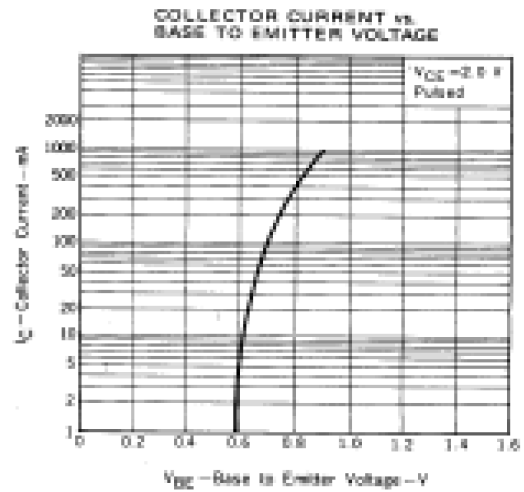
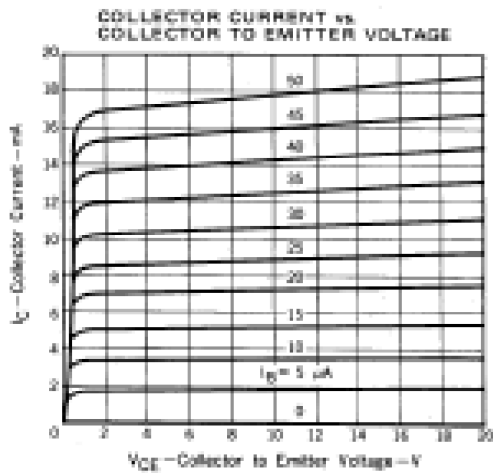
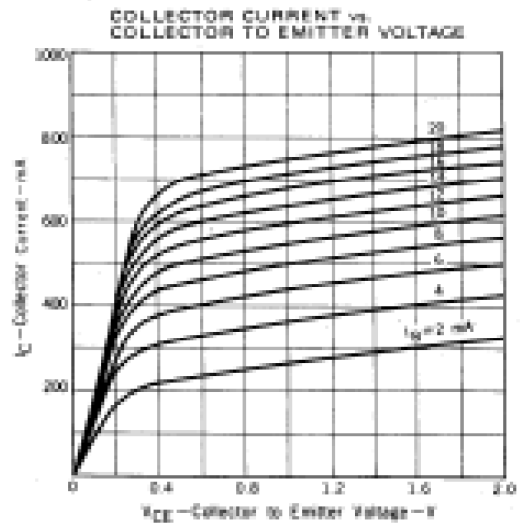
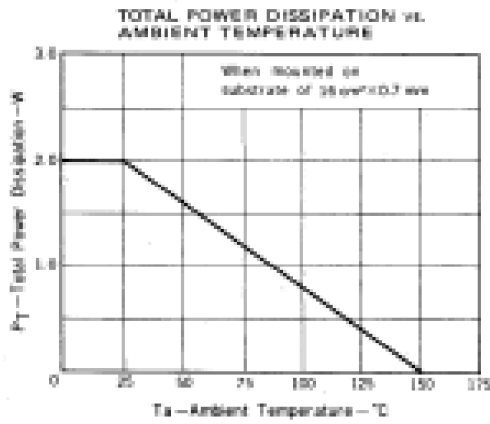
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =0.1mA, I _E =0	100			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	80			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =0.1mA, I _C =0	5			V
Collector cut-off current	I _{CBO}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

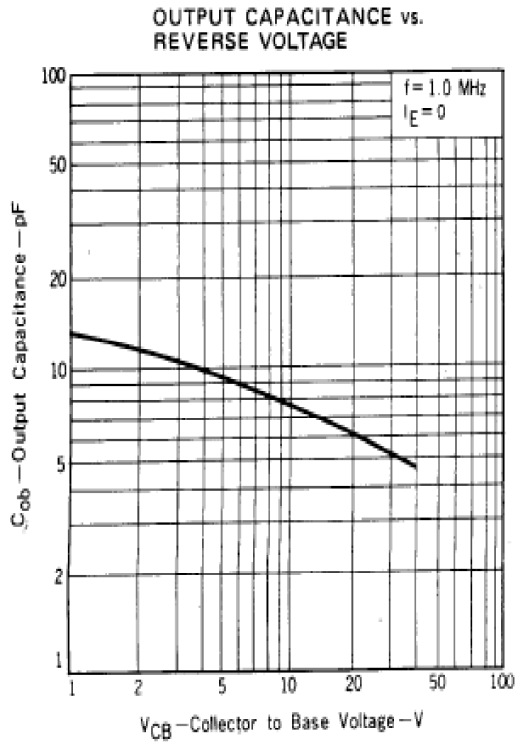
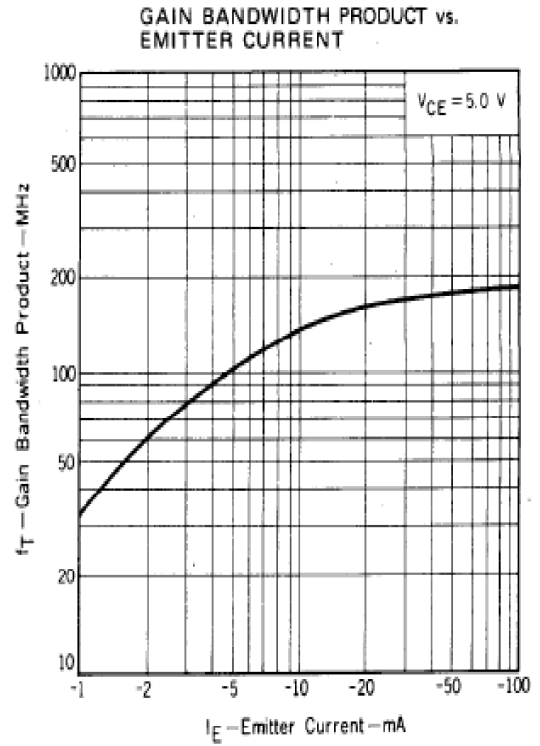
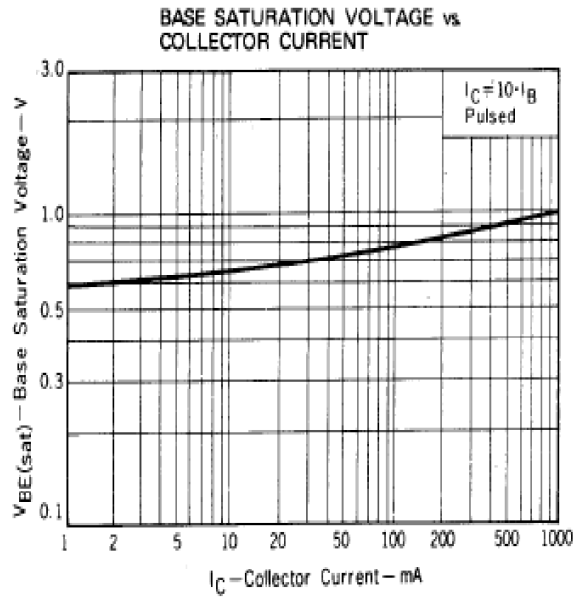
*Pulse test

CLASSIFICATION OF h_{FE(1)}

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

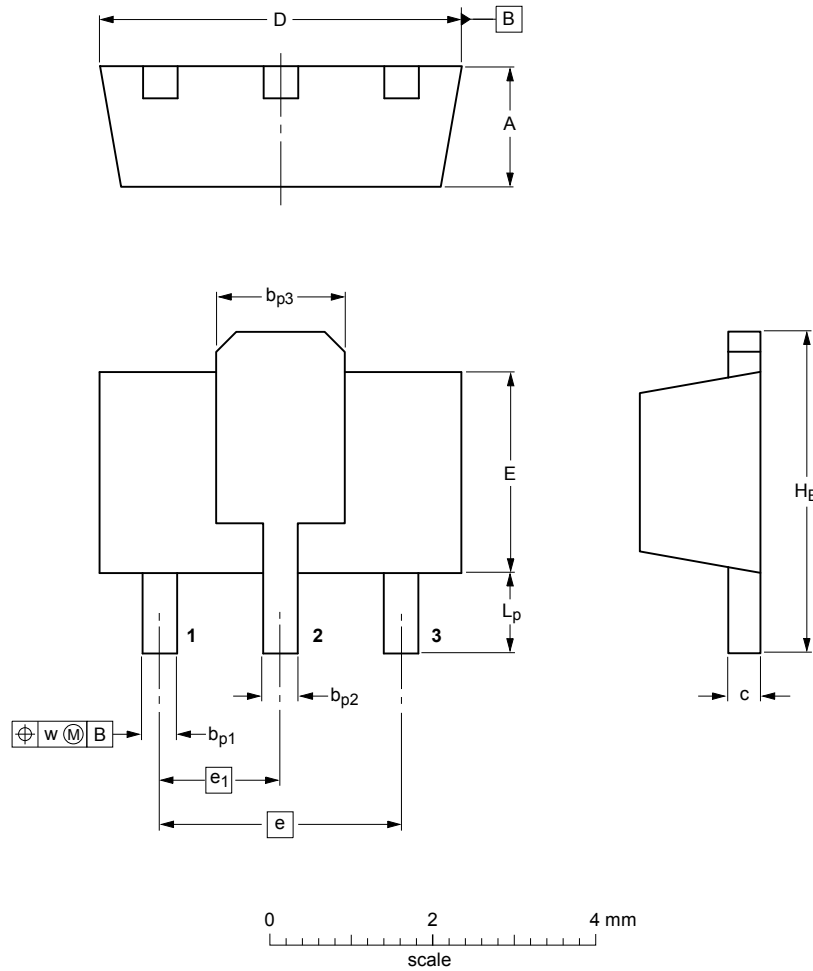
TYPICAL CHARACTERISTICS (T_a = 25 °C)





Package Outline

SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _{p1}	b _{p2}	b _{p3}	c	D	E	e	e ₁	H _E	L _p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-89	Tape/Reel, 7" reel	1000	EIA-481-1