

SOT-89 Plastic-Encapsulate Transistors

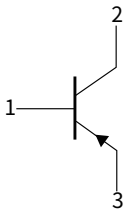
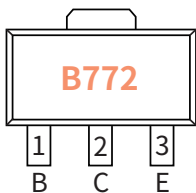
Features

- Low Saturation Voltage
- Power dissipation of 500mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

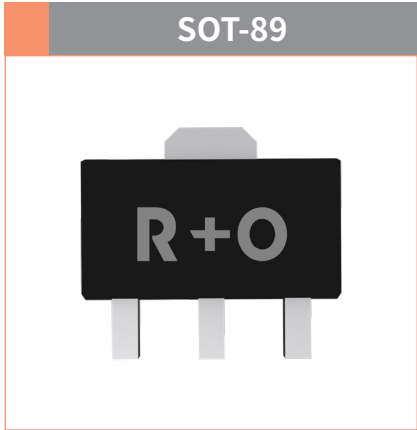
Mechanical Data

- Case: SOT-89
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Collector-Base Voltage
VCBO -40V
Collector Current
-3 Ampere



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	VCBO	V	-40
Collector-Emitter Voltage	VCEO		-30
Emitter-Base Voltage	VEBO		-6.0
Collector Current	IC	A	-3.0
Collector Power Dissipation	PC	mW	500
Storage temperature	Tstg	°C	-55 ~+150
Junction temperature	Tj	°C	-55 ~+150
Typical Thermal Resistance	RθJA	°C /W	250

Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min		Max
Collector-Base Breakdown Voltage	V(BR)CBO	V	IC=-100μA, IE=0	-40	—	—
Collector-Emitter Breakdown Voltage	V(BR)CEO		IC=-10mA, IB=0	-30	—	—
Emitter-Base Breakdown Voltage	V(BR)EBO		IE=-100μA, IC=0	-6.0	—	—
Collector-Emitter cut-off current	ICEO	μA	VCE= -30V, IE=0	—	—	-10
Collector-Base cut-off current	ICBO		VCB= -40V, IE=0	—	—	-1.0
Emitter-Base cut-off current	IEBO		VEB= -6.0V, IC=0	—	—	-1.0
DC Current Gain	hFE	V	IC= -1.0A VCE= -2.0V	60	—	400
Collector-Emitter Saturation Voltage	VCE(sat)	V	IC= -2.0A IB= -0.2A	—	—	-0.5
Base-Emitter Saturation Voltage	VBE(sat)	V	IC= -2.0A IB= -0.2A	—	—	-1.5
Collector Output capacitance	Cob	pF	VCB= -10V, IE=0, f=1.0MHz	—	35	—

● Classification Of h_{FE}

RANK	R	O	Y	GR
Range	60-120	100-200	160-320	200-400

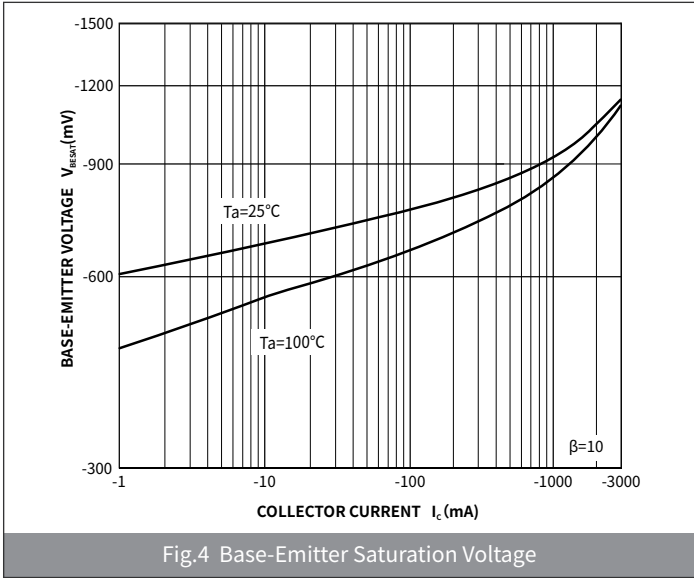
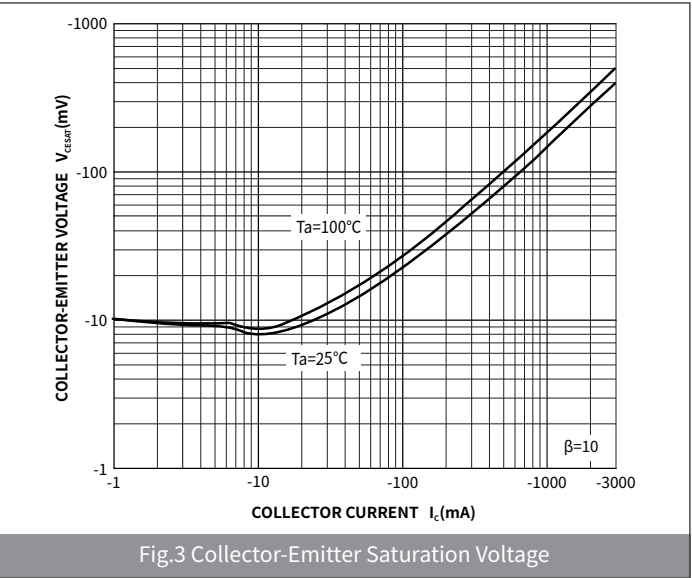
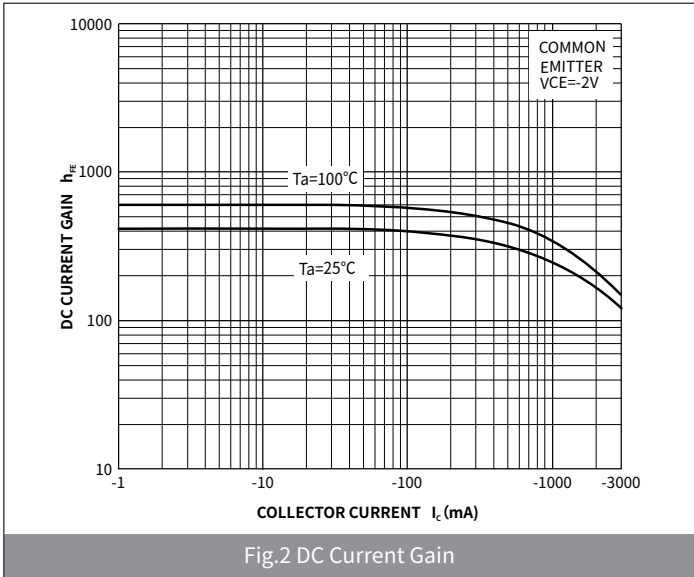
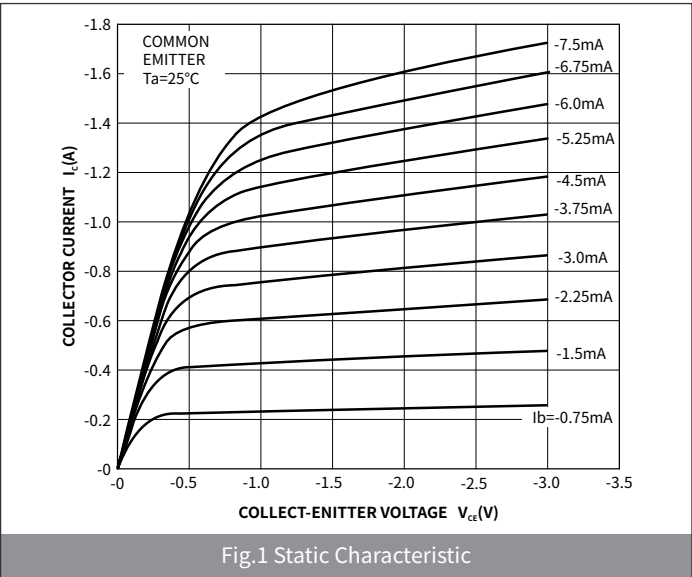
● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Tye	Max
Transition frequency	f_T	$I_C = -100\text{mA}$, $V_{CE} = -5.0\text{V}$	MHz	—	80	—

● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-89	R1	0.055	1000	7000	21000	7"

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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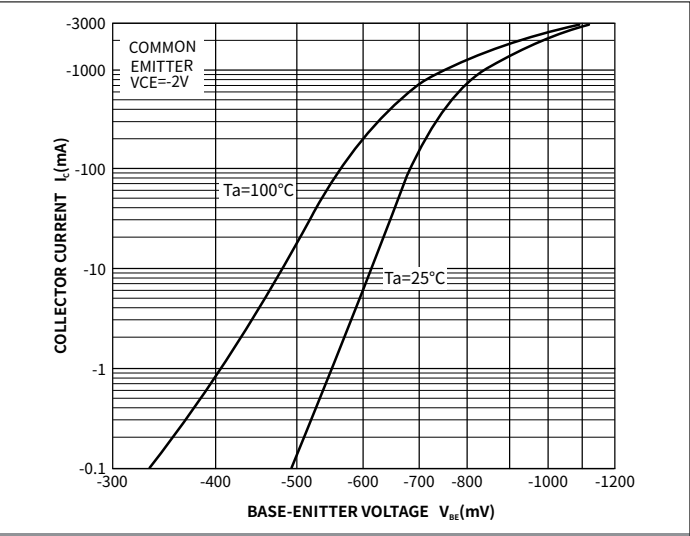


Fig.5 Base-Emitter On Voltage

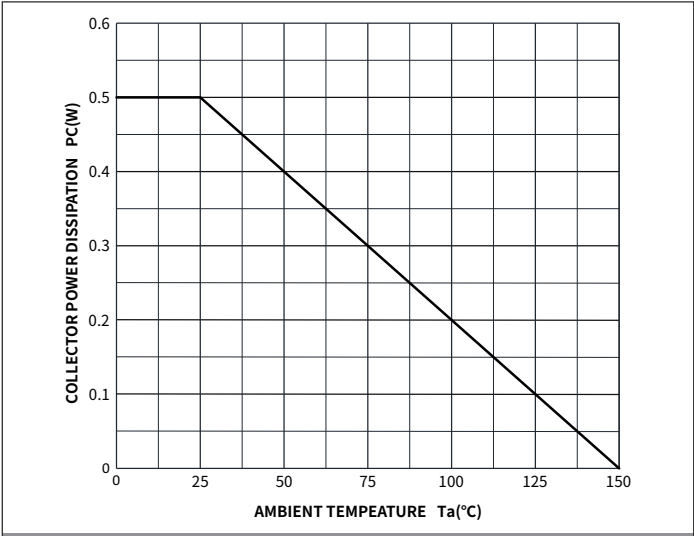
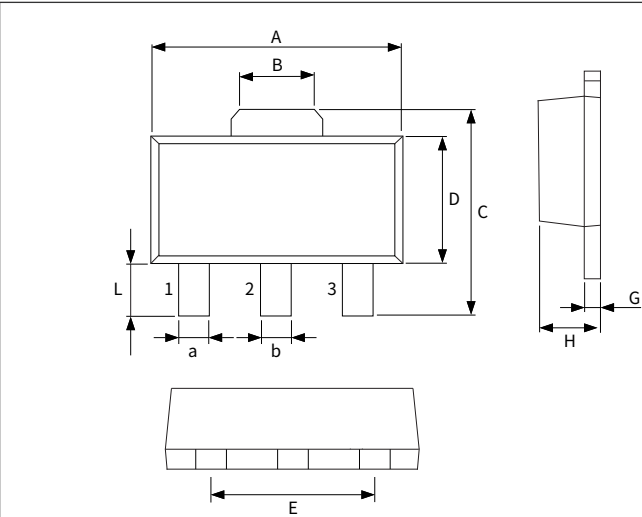


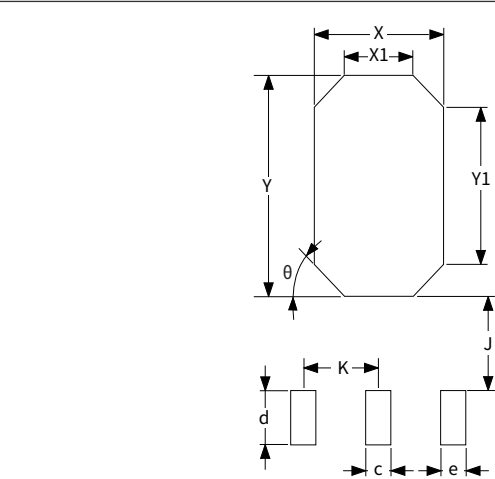
Fig.6 Power Derating Curve

● Package Outline Dimensions (SOT-89)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.176	0.184
B	1.6	1.8	0.064	0.072
C	3.9	4.1	0.156	0.164
D	2.4	2.6	0.096	0.104
E	2.9	3.1	0.116	0.124
a	0.41	0.43	0.0164	0.018
b	0.35	0.45	0.014	0.018
L	0.95	1.05	0.037	0.041
G	0.3	0.5	0.012	0.020
H	1.4	1.5	0.055	0.059

● Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
c	0.80	1.00	0.032	0.04
d	1.30	1.50	0.052	0.060
e	0.70	0.90	0.028	0.036
J	1.80	2.00	0.072	0.080
K	1.40	1.60	0.056	0.064
X	2.50	2.70	0.100	0.108
X1	1.30	1.50	0.052	0.060
Y	4.30	4.50	0.172	0.180
Y1	3.10	3.30	0.124	0.132
θ	-	45°	-	45°