

SOT-89 Plastic-Encapsulate Transistors

Features

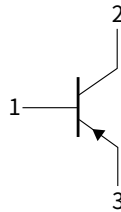
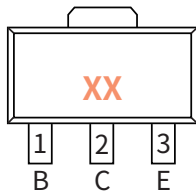
- Complementary to 2SC2873
- Power dissipation of 500mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

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

XX = Device Code
NO = 2SA1213-O
NY = 2SA1213-Y



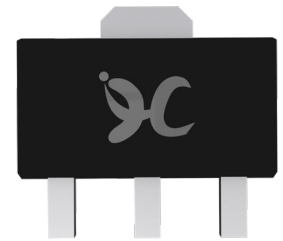
Collector-Base Voltage

VCBO -50V

Collector Current

-2.0 Ampere

SOT-89



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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	-50
Collector-Emitter Voltage	V_{CEO}		-50
Emitter-Base Voltage	V_{EBO}		-5.0
Collector Current	I_C	A	-2.0
Collector Power Dissipation	P_C	mW	500
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°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	$I_C = -100\mu A, I_E = 0$	-50	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C = -10mA, I_B = 0$	-50	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E = -100\mu A, I_C = 0$	-5.0	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB} = -50V, I_E = 0$	—	-100
Emitter-Base cut-off current	I_{EBO}		$V_{EB} = -5.0V, I_C = 0$	—	-100
DC Current Gain	$h_{FE(1)}$	—	$I_C = -500mA, V_{CE} = -2.0V$	70	240
	$h_{FE(2)}$		$I_C = -2A, V_{CE} = -2.0V$	20	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C = -1A, I_B = -50mA$	—	-0.5
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = -1A, I_B = -50mA$	—	-1.2

● **Classification Of h_{FE}**

RANK	O	Y
Range	70-140	120-240

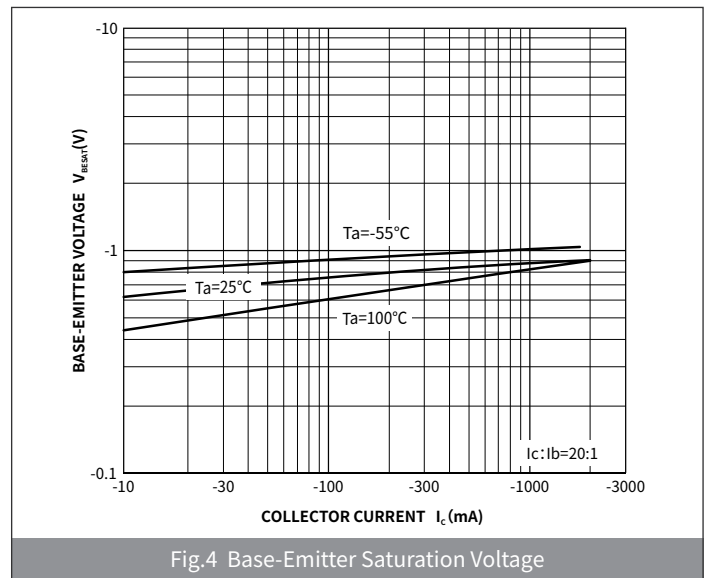
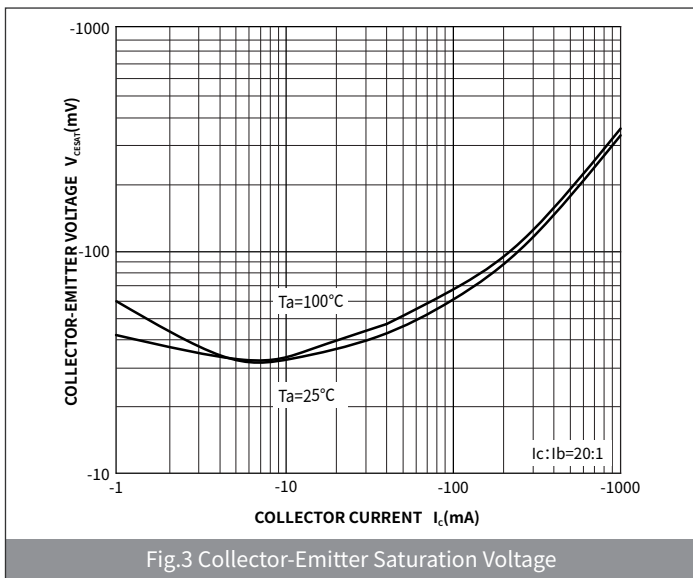
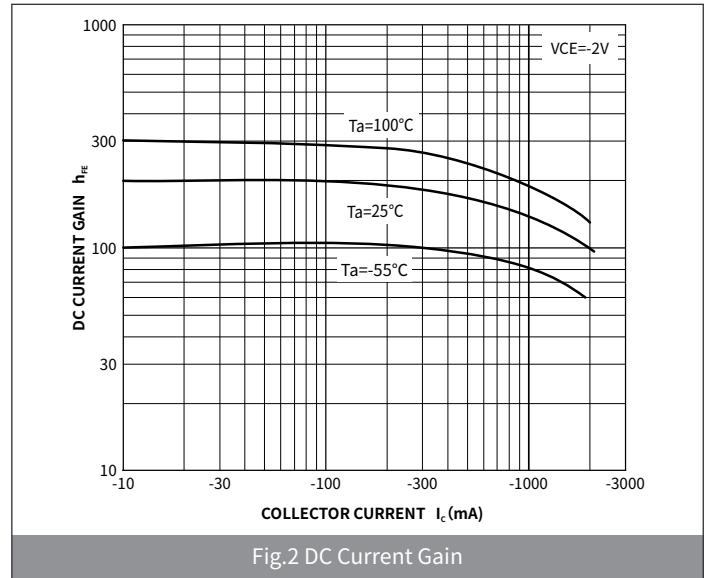
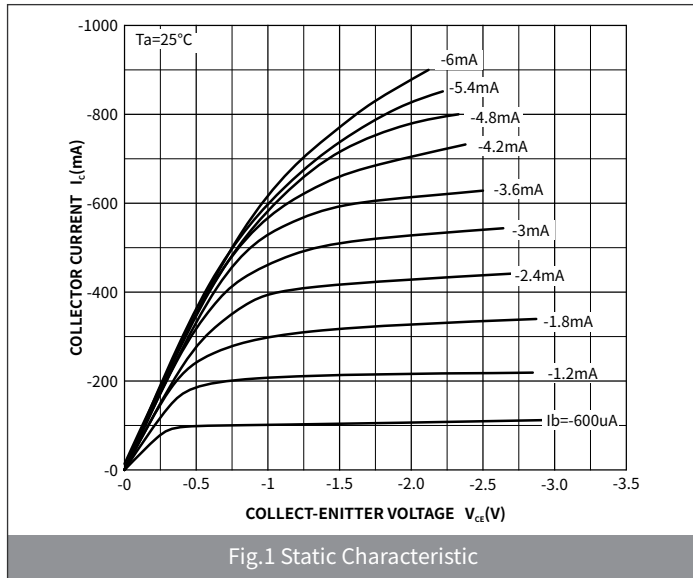
● **Small-signal Characteristics**

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_c = -0.5A, V_{CE} = -2V$	MHZ	120	—

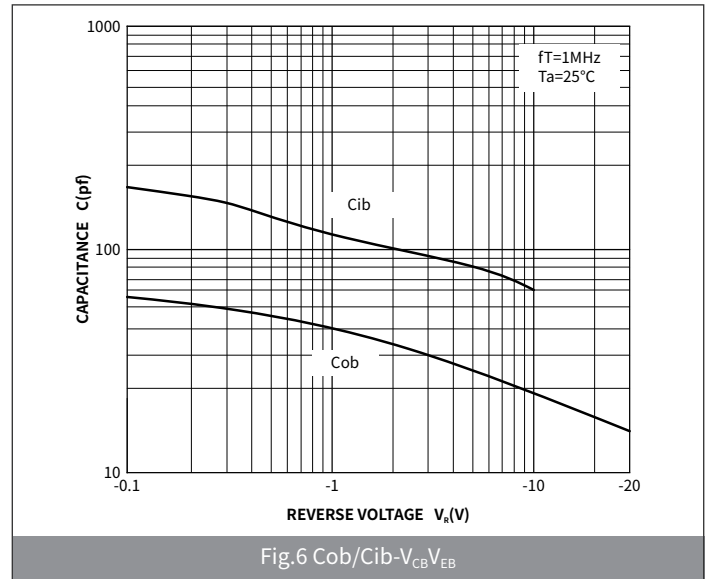
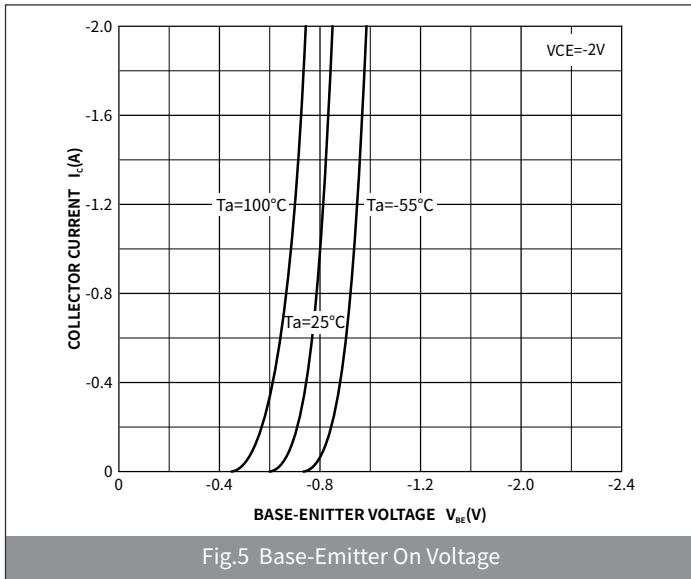
● **Ordering Information**

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

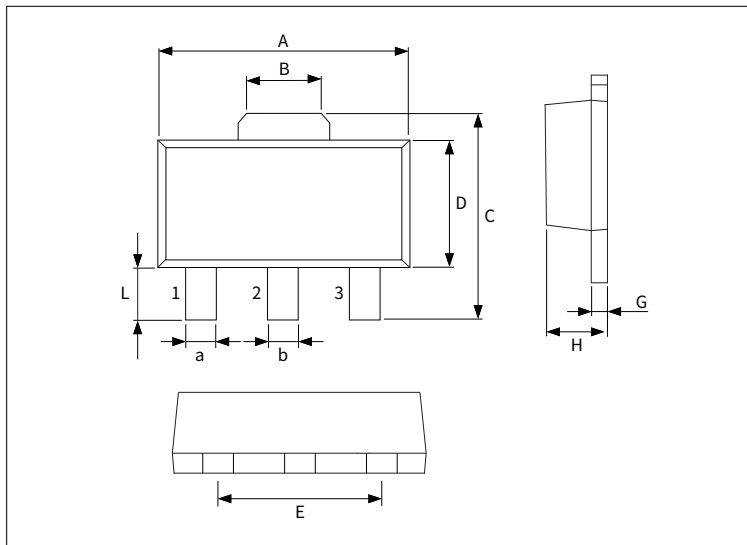
● **Ratings And Characteristics Curves** ($T_a = 25^\circ C$ Unless otherwise specified)



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

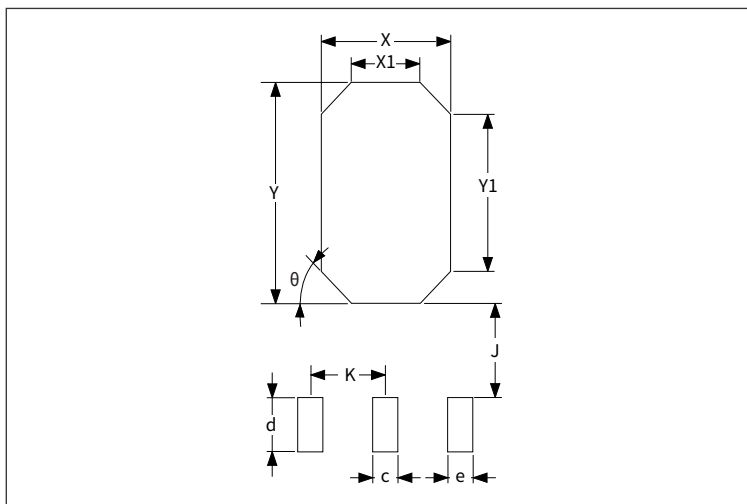


● Package Outline Dimensions (SOT-89)



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°