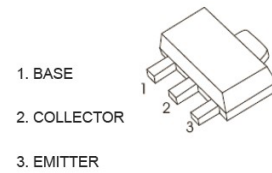


Features

- Switching and amplification in high voltage
Applications such as telephony
- Low current
- High voltage

SOT-89



Mechanical Data

- Case:SOT-89
- Terminals:Plated solderable per MIL-STD-750,method 2026
- Mounting Position: Any
- Marking:5401

Maximum Ratings($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Unit	Value
Collector-Emitter Voltage	V_{CEO}	V	-150
Collector-Base Voltage	V_{CBO}	V	-160
Emitter-Base Voltage	V_{EBO}	V	-5.0
Collector Current, Continuous	I_c	mA	-600
Power Dissipation	P_D	mW	500
Operation Junction Temperature	T_J	$^{\circ}\text{C}$	-55 to +150
Storage Temperature	T_{STG}	$^{\circ}\text{C}$	-55 to +150

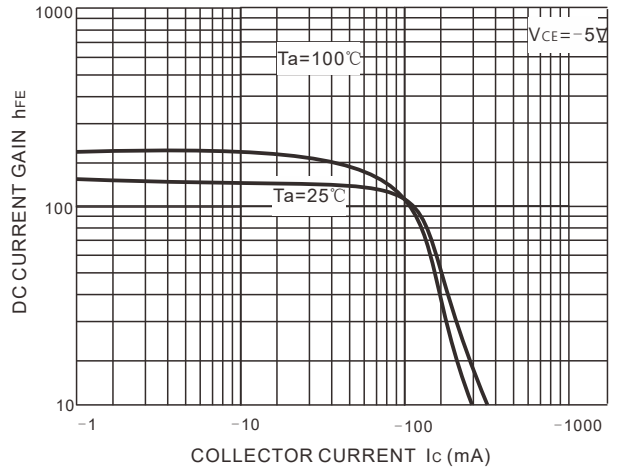
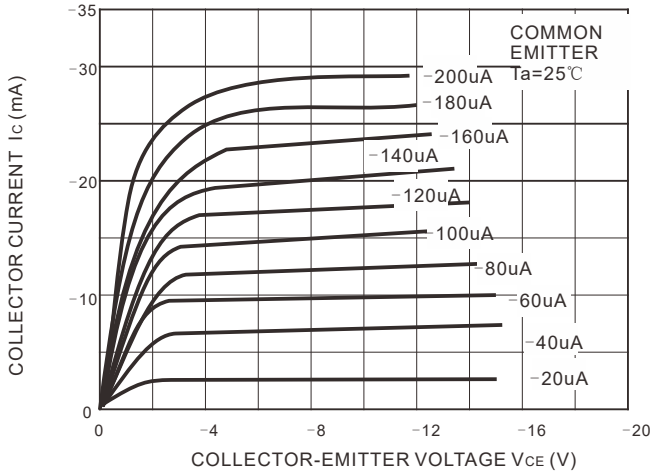
Electrical Characteristics($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	V	$I_C = -1\text{mA}, I_B = 0$	-150	---
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C = -100\mu\text{A}, I_E = 0$	-160	---
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	V	$I_E = -10\mu\text{A}, I_C = 0$	-5.0	---
Collector cut-off Current	I_{CBO}	nA	$V_{CB} = -120\text{V}, I_E = 0$	---	-50
Emitter cut-off Current	I_{EBO}	nA	$V_{EB} = -3\text{V}, I_C = 0$	---	-50
DC Current Gain	$h_{FE(1)}$		$I_C = -1\text{mA}, V_{CE} = -5\text{V}$	50	---
	$h_{FE(2)}$		$I_C = -10\text{mA}, V_{CE} = -5\text{V}$	100	300
	$h_{FE(3)}$		$I_C = -50\text{mA}, V_{CE} = -5\text{V}$	50	---
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C = -10\text{mA}, I_B = -1\text{mA}$	---	-0.20
			$I_C = -50\text{mA}, I_B = -5\text{mA}$	---	-0.50
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = -10\text{mA}, I_B = -1\text{mA}$	---	-1.00
			$I_C = -50\text{mA}, I_B = -5\text{mA}$	---	-1.00
Current Gain-Bandwidth Product	f_T	MHz	$I_C = -10\text{mA}, V_{CE} = -10\text{V}$ $f = 100\text{MHz}$	100	300
Output Capacitance	C_{ob}	pF	$V_{CB} = -10\text{V}, f = 1.0\text{MHz}, I_E = 0$	---	6
Noise Figure	NF	dB	$V_{CE} = -5.0\text{V}, f = 10\text{Hz to } 15.7\text{KHz}$ $I_C = -200\mu\text{A}, R_S = 10\Omega$	---	8

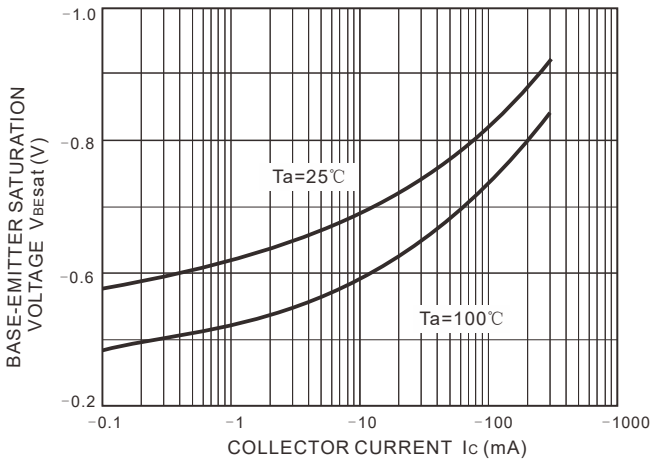
Pulse test:pulse width $\leq 300\mu\text{s}$,duty cycle $\leq 2.0\%$

Characteristics(Typical)

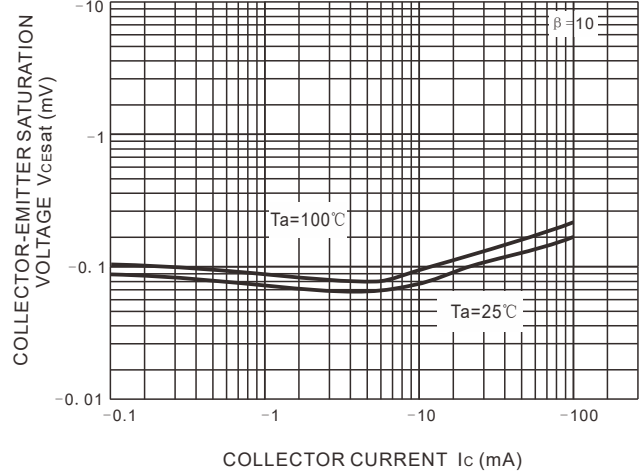
Static Characteristic



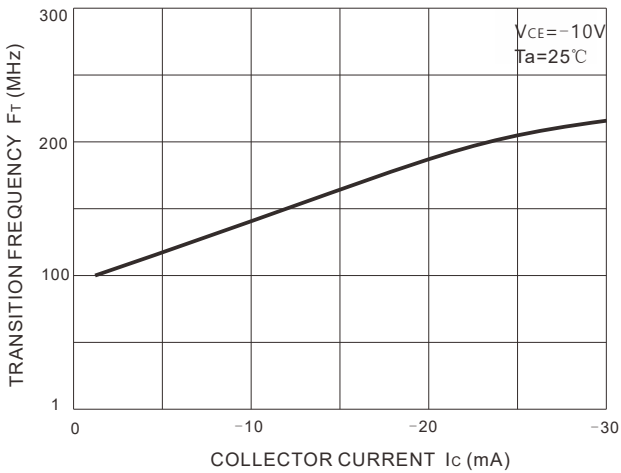
$V_{BEsat} - I_c$



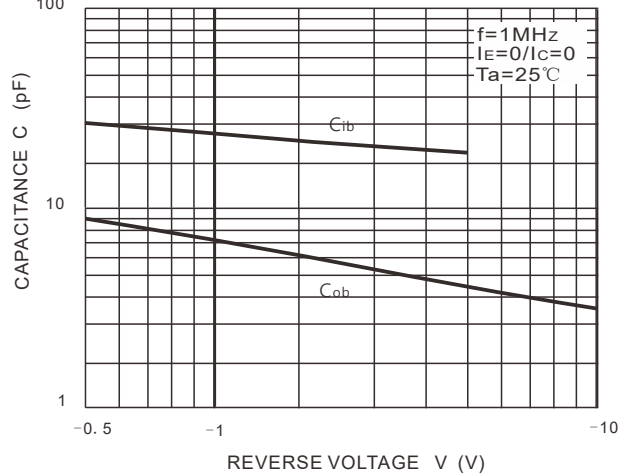
$V_{CEsat} - I_c$

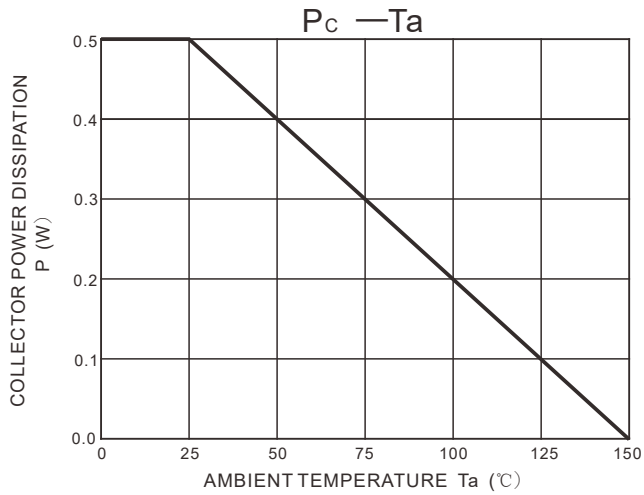


$f_T - I_c$

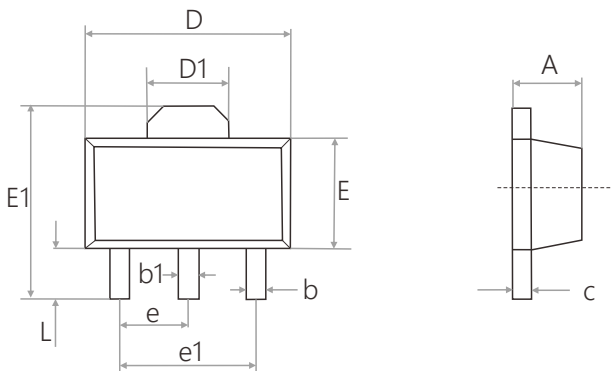


$C_{ob}/C_{ib} - V_{CB}/V_{EB}$





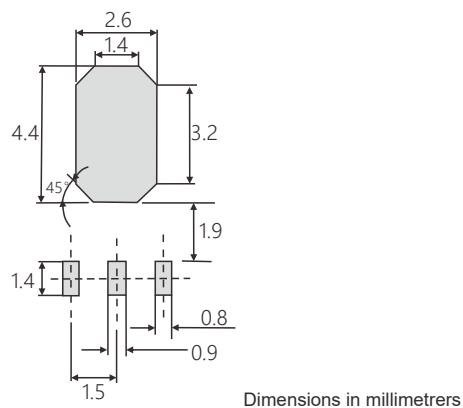
Outline Dimensions



SOT-89		
Dim	Min	Max
A	1.40	1.60
b	0.32	0.52
b1	0.40	0.58
c	0.35	0.44
D	4.40	4.60
D1	1.55REF	
E	2.30	2.60
E1	3.94	4.25
e	1.50TYP	
e1	3.00TYP	
L	0.90	1.20

Dimensions in millimeters

Suggested pad layout



Friendship Reminder

- JiNan JingHeng (hereinafter referred to as JH) reserves the right to make changes to this document and its products and specifications at anytime without notice.
- Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
- JH makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does JH assume any liability for application assistance or customer product design.
- JH does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.
- No license is granted by implication or otherwise under any intellectual property rights of JH.
- JH's products are not authorized for use as critical components in life support devices or systems without express written approval of JH.