

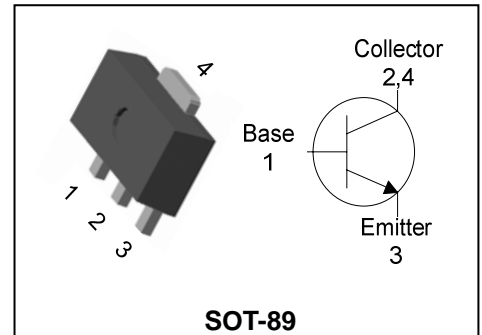
## Description

- Medium power amplifier application

## Features

- $P_C$ (Collector power dissipation) = 1W  
(Ceramic substrate of 250 mm<sup>2</sup> × 0.8t used)
- Low collector saturation voltage :  
 $V_{CE(sat)} = 0.15V$ (Typ.)
- Complementary pair with STB1132

## PIN Connection



## Ordering Information

Type NO.	Marking	Package Code
STD1664	A2 □YWW	SOT-89

A2: DEVICE CODE, □ : h<sub>FE</sub> rank, YWW(Y : Year code, WW : Weekly code)

## Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Collector-Base voltage	$V_{CBO}$	40	V
Collector-Emitter voltage	$V_{CEO}$	32	V
Emitter-Base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	1	A(DC)
	$I_{CP}^*$	2	A(Pulse)
Collector power dissipation	$P_C$	0.5	W
	$P_C^*$	1	
Junction temperature	$T_J$	150	°C
Storage temperature	$T_{stg}$	-55 ~ 150	°C

\* : Single pulse, tp= 300 μs

\*\* : When mounted on ceramic substrate(250 mm<sup>2</sup> × 0.8t)

## Electrical Characteristics

(Ta=25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base breakdown voltage	$BV_{CBO}$	$I_C=50\ \mu A, I_E=0$	40	-	-	V
Collector-Emitter breakdown voltage	$BV_{CEO}$	$I_C=1\ mA, I_B=0$	32	-	-	V
Emitter-Base breakdown voltage	$BV_{EBO}$	$I_E=50\ \mu A, I_C=0$	5	-	-	V
Collector cut-off current	$I_{CBO}$	$V_{CB}=20V, I_E=0$	-	-	0.5	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$	-	-	0.5	$\mu A$
DC current gain	$h_{FE}^*$	$V_{CE}=3V, I_C=0.1A$	100	-	320	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\ mA, I_B=50\ mA$	-	0.15	0.4	V
Transition frequency	$f_T$	$V_{CE}=5V, I_C=50\ mA$	-	150	-	MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1\ MHz$	-	15	-	pF

\* :  $h_{FE}$  rank / O : 100 ~ 200, Y : 160 ~ 320

## Electrical Characteristic Curves

Fig. 1  $P_C - T_a$

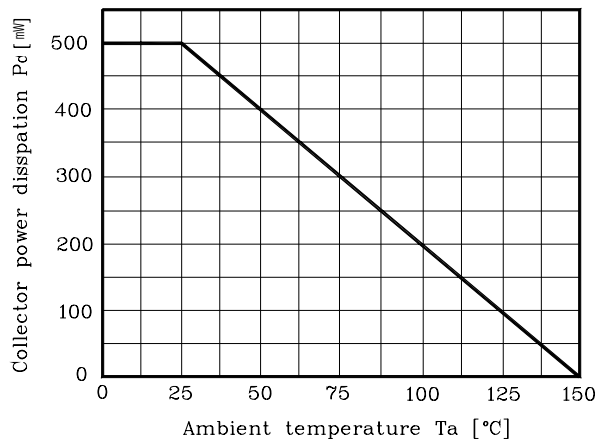


Fig. 2  $I_C - V_{BE}$

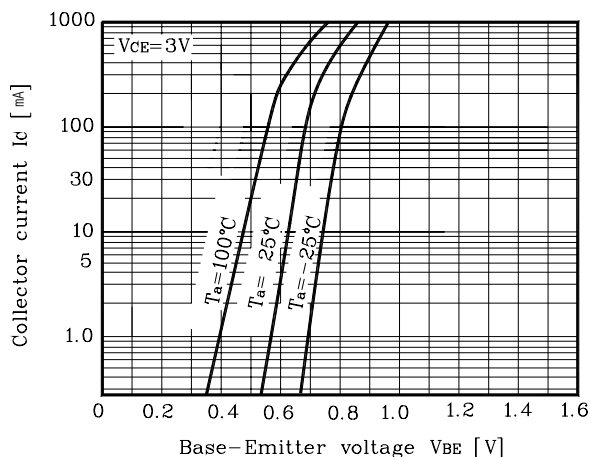


Fig. 3  $I_C - V_{CE}$

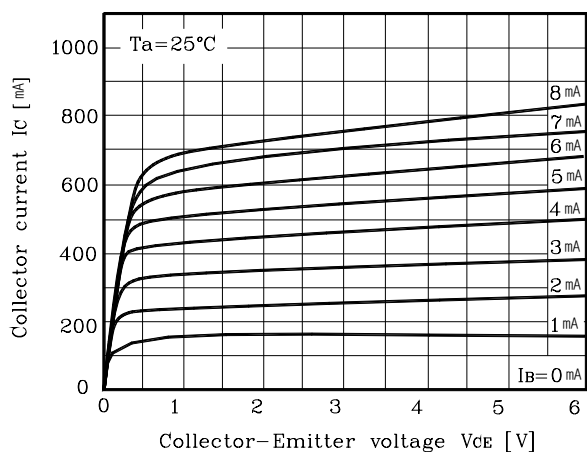


Fig. 4  $V_{CE(sat)} - I_C$

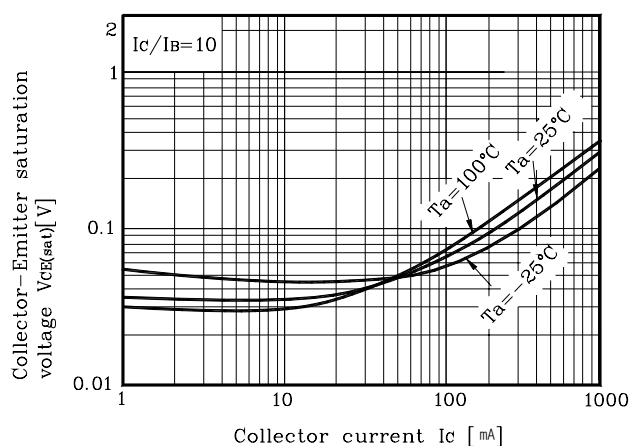
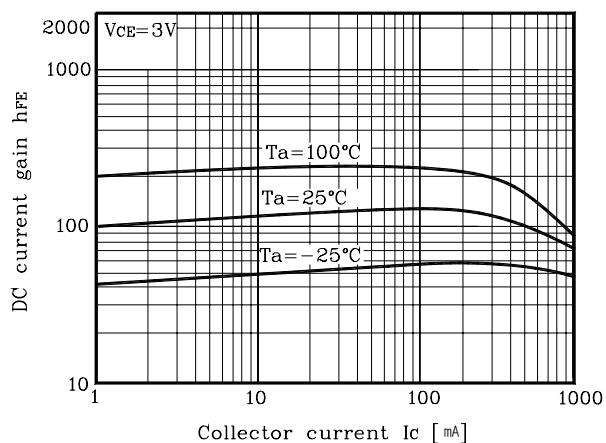
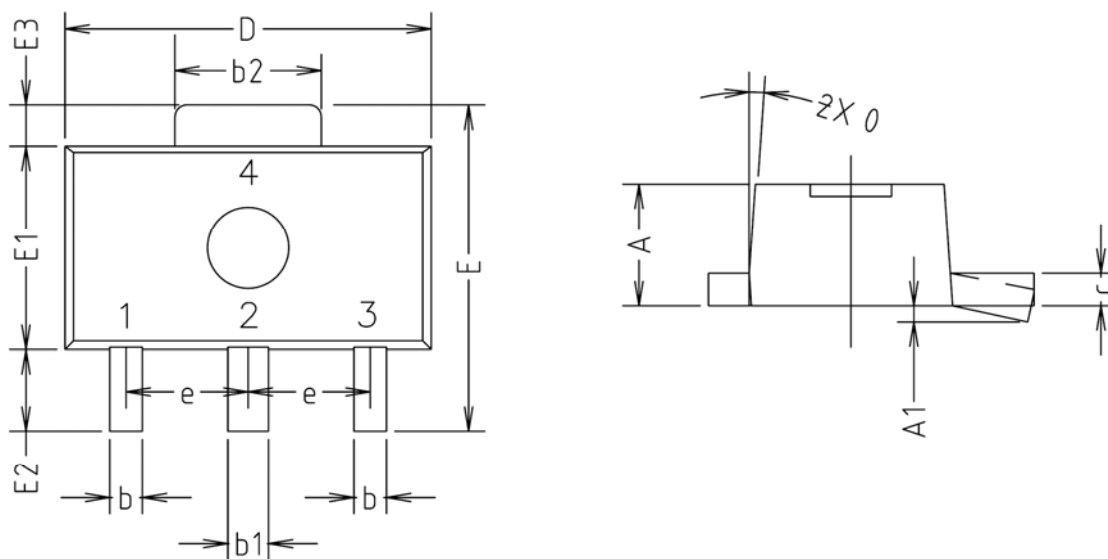


Fig. 5  $h_{FE} - I_C$

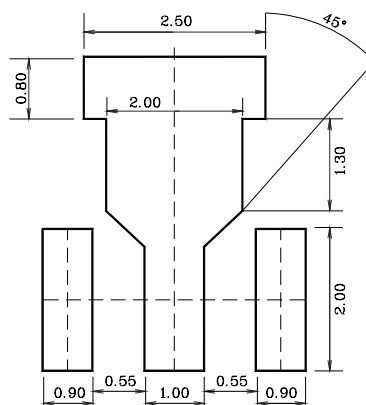


Outline Dimension(mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	1.40	1.50	1.60	
A1	0.00	—	0.10	
b	0.38	0.42	0.48	
b1	0.48	0.52	0.58	
b2	1.79	1.82	1.87	
c	0.40	0.42	0.46	
D	4.40	4.50	4.70	
E	3.70	4.00	4.30	
E1	2.40	2.50	2.70	
E2	0.80	1.00	1.20	
E3	0.40	0.50	0.60	
e	1.50 TYP.			
θ	4° TYP.			

※Recommend PCB solder land [Unit: mm]



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