

Descriptions

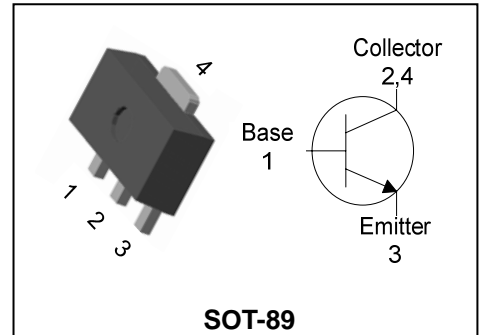
- Medium power amplifier

Features

- P_C (Collector power dissipation)=2W
(Ceramic substrate of 250 mm²×0.8t used)
- Low collector saturation voltage :
 $V_{CE(sat)}=0.5V$ (Typ.)
- Complementary pair with STB1188
- “Green” device and RoHS compliant device
- Available in full lead (Pb)-free device



PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STD1766	B2 □YWW	SOT-89

B2: DEVICE CODE, □ : h_{FE} rank, YWW(Y : Year code, WW : Weekly code)

Absolute maximum ratings

($T_a=25^{\circ}C$)

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	2	A(DC)
	I_{CP}^*	4	A(Pulse)
Collector power dissipation	P_C	0.5	W
	P_C^{**}	1	
Junction temperature	T_J	150	$^{\circ}C$
Storage temperature	T_{stg}	-55~ 150	$^{\circ}C$

Characteristic		Symbol	Typ.	Max	Unit
Thermal resistance	Junction-ambient	$R_{th(J-A)}$	-	250.0	$^{\circ}C/W$
		$R_{th(J-A)}^{**}$	-	125.0	

* : Single pulse, $t_p=300 \mu s$

** : When mounted on ceramic substrate(250 mm²×0.8t)

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}	$V_{CB} = 20V, I_E = 0$	-	-	1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	-	-	1	μA
DC current gain	h_{FE}^*	$V_{CE} = 3V, I_C = 0.5A$	100	-	320	-
Collector-Emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2A, I_B = 200 mA$	-	0.5	0.8	V
Transition frequency	f_T	$V_{CB} = 5V, I_C = 500 mA$	-	100	-	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1 MHz$	-	30	-	pF

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

Electrical Characteristic Curves

Fig. 1 $P_C - T_a$

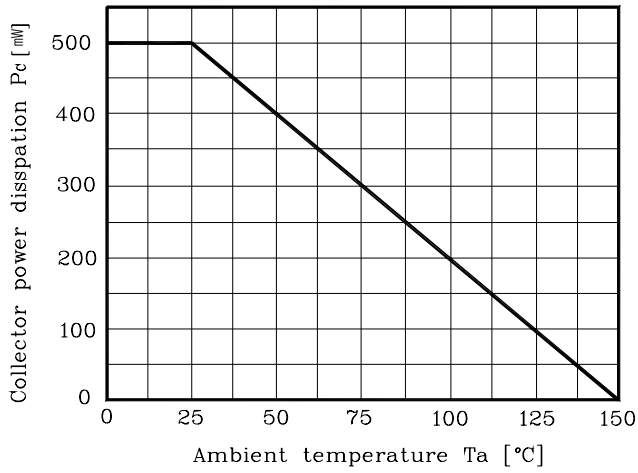


Fig. 2 $I_C - V_{BE}$

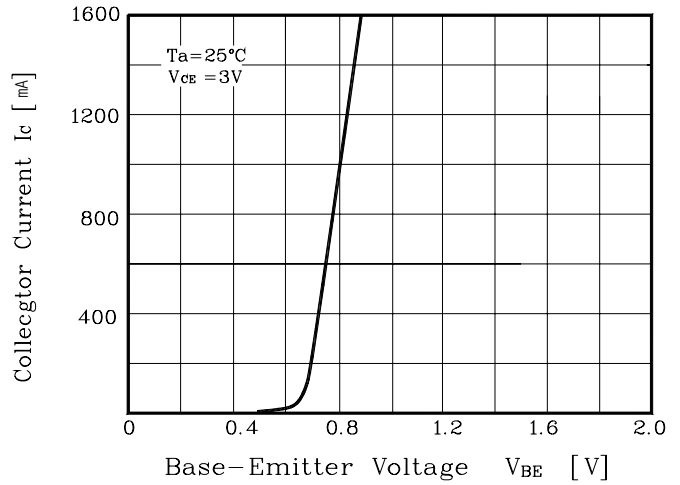


Fig. 3 $I_C - V_{CE}$

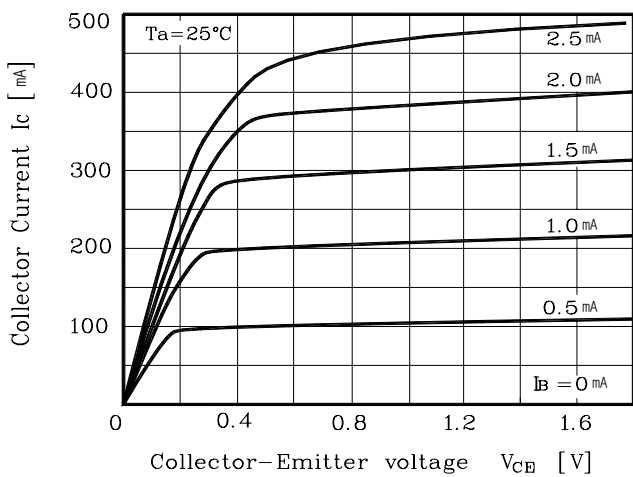


Fig. 4 $V_{CE(sat)} - I_C$

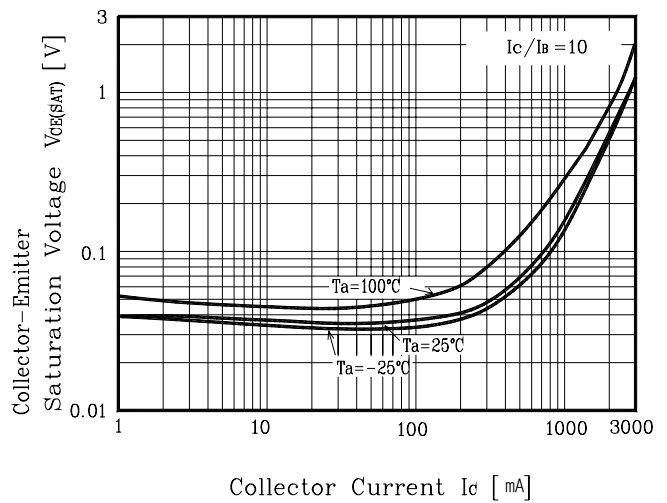
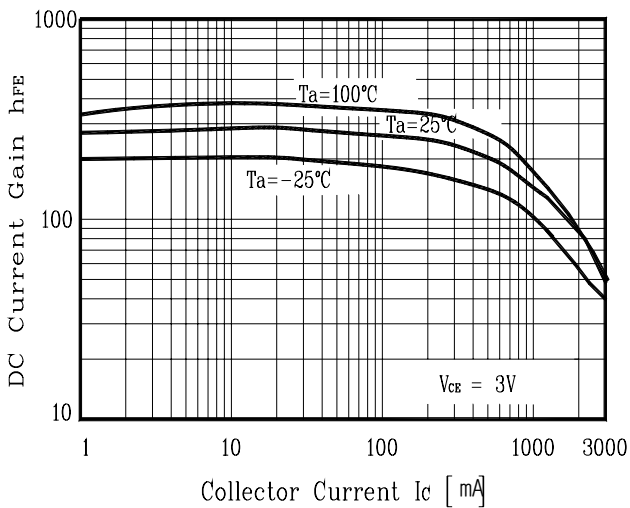
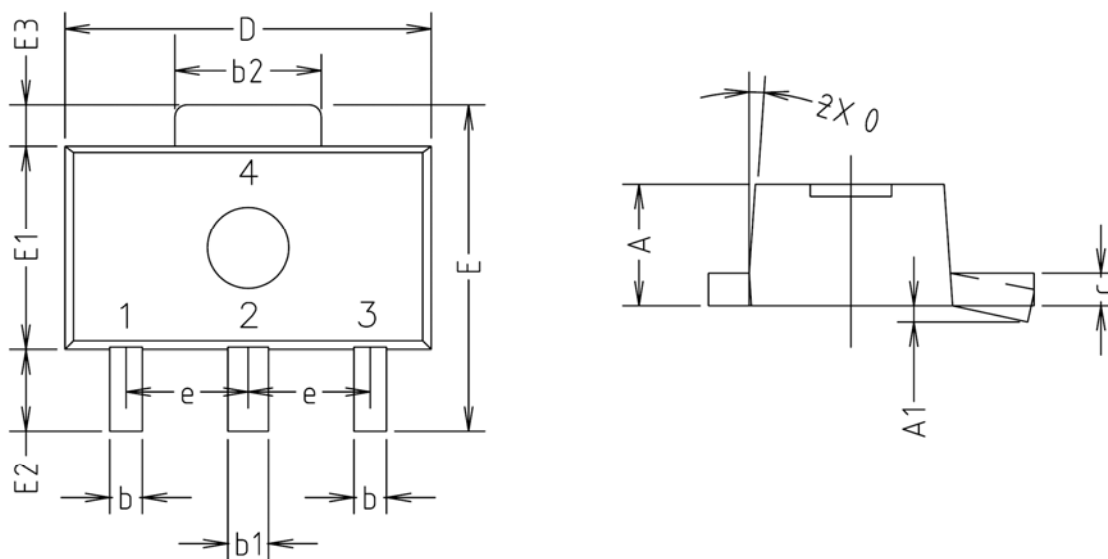


Fig. 5 $h_{FE} - I_C$

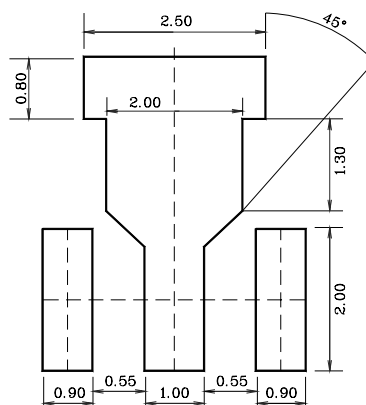


Outline Dimension(mm)



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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