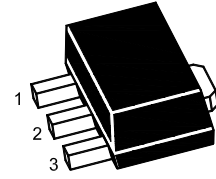


2SB772U

PNP Silicon Epitaxial Power Transistor

Applications

- These devices are intended for use in audio frequency power amplifier and low speed switching



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

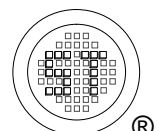
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	30	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	3	A
Peak Collector Current	$-I_{CM}$	7	A
Base Current	$-I_B$	0.6	A
Total Power Dissipation	P_{tot}	1	W
Total Power Dissipation ($T_C = 25^\circ\text{C}$)	P_{tot}	10	W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	125	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	12.5	$^\circ\text{C/W}$

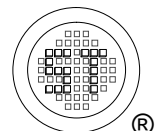
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate



2SB772U

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 2\text{ V}$, $-I_C = 20\text{ mA}$ at $-V_{CE} = 2\text{ V}$, $-I_C = 1\text{ A}$ Current Gain Group	R	h_{FE}	30	-	-	-
	Q	h_{FE}	60	-	120	-
	P	h_{FE}	100	-	200	-
	E	h_{FE}	160	-	320	-
	E	h_{FE}	200	-	400	-
Collector Base Cutoff Current at $-V_{CB} = 30\text{ V}$	$-I_{CBO}$	-	-	1	μA	
Emitter Base Cutoff Current at $-V_{EB} = 3\text{ V}$	$-I_{EBO}$	-	-	1	μA	
Collector Base Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CBO}$	40	-	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$	$-V_{(BR)CEO}$	30	-	-	V	
Emitter Base Breakdown Voltage at $-I_E = 1\text{ mA}$	$-V_{(BR)EBO}$	5	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 2\text{ A}$, $-I_B = 200\text{ mA}$	$-V_{CE(sat)}$	-	-	0.5	V	
Base Emitter Saturation Voltage at $-I_C = 2\text{ A}$, $-I_B = 200\text{ mA}$	$-V_{BE(sat)}$	-	-	2	V	
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	55	-	pF	
Current Gain Bandwidth Product at $-V_{CE} = 5\text{ V}$, $-I_C = 100\text{ mA}$	f_T	-	80	-	MHz	



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

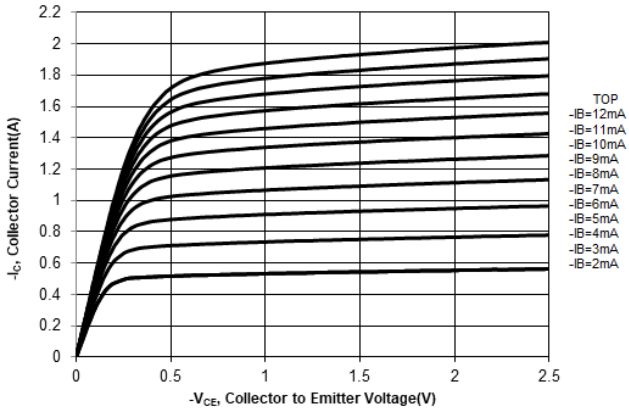


Fig. 2 Collector Current vs. Base to Emitter Voltage

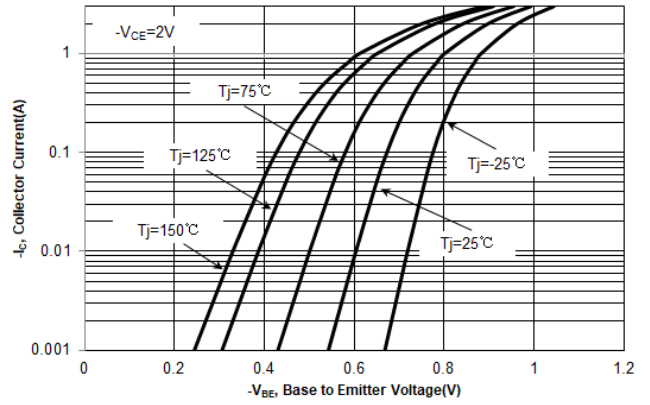


Fig. 3 $h_{FE,DC}$ Current Gain vs. Collector Current

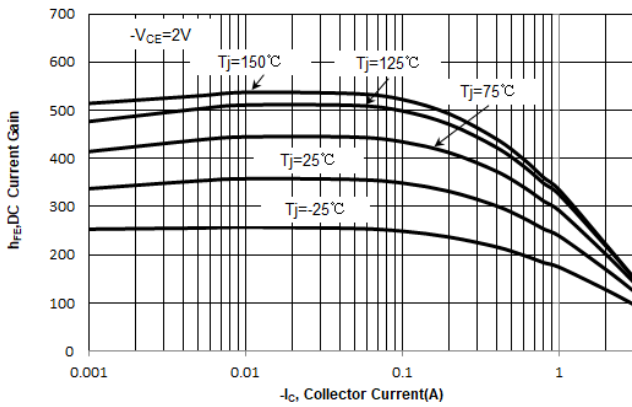
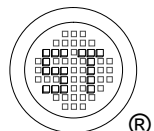
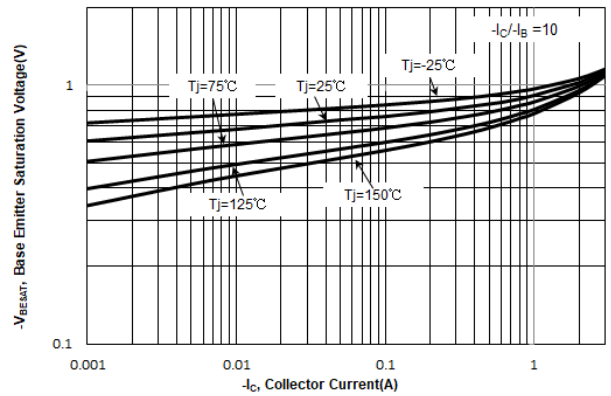


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



Electrical Characteristics Curves

Fig. 5 $V_{CE(sat)}$ vs. Collector Current

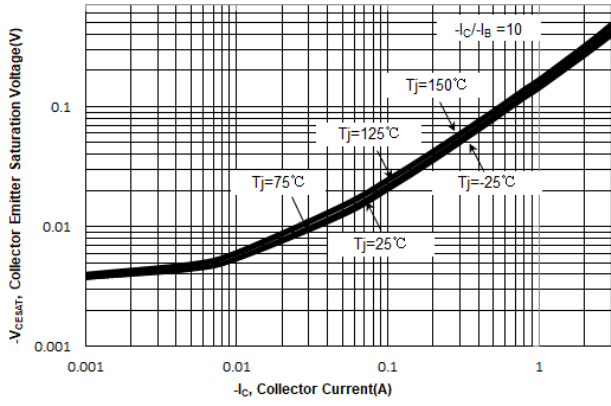


Fig. 6 Output Capacitance

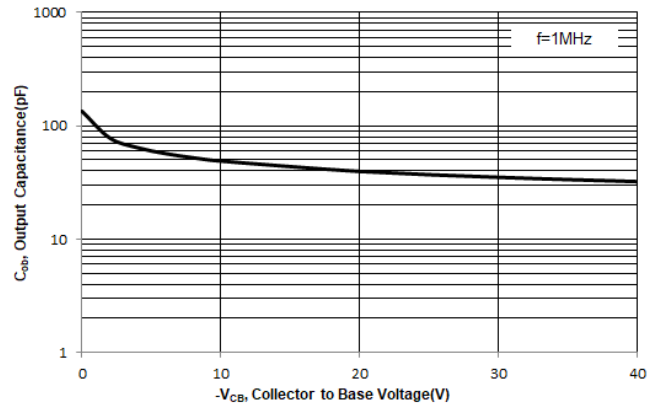
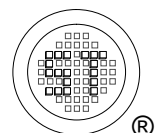
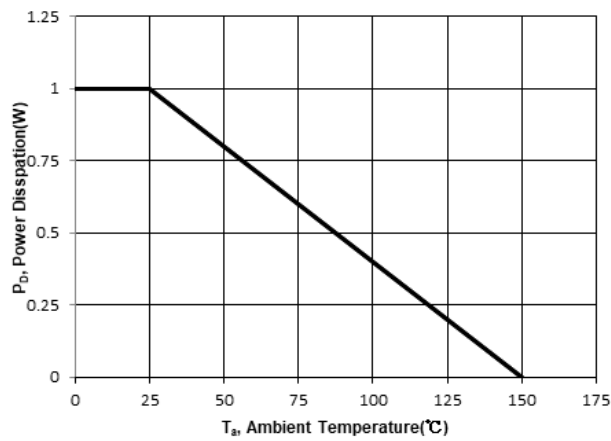


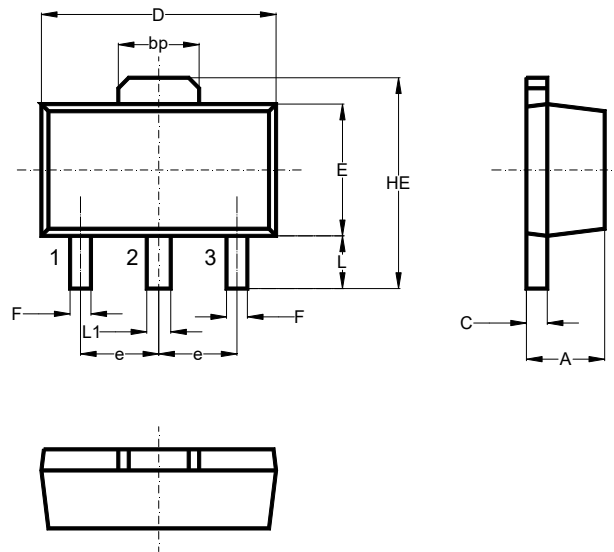
Fig 7. Power Derating Curve



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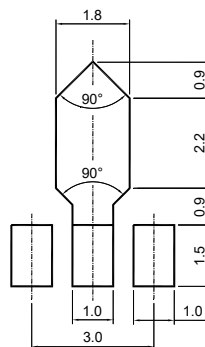
Package Outline (Dimensions in mm)

SOT-89



Unit	A	bp	C	D	E	F	HE	e	L	L1
mm	1.6	1.60	0.5	4.6	2.6	0.45	4.25	1.5	1.05	0.51
	1.4	1.50	0.3	4.4	2.4	0.35	3.75	typ.	0.95	0.41

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-89	12	8 ± 0.1	0.315 ± 0.004	178	7	1,000
				330	13	4,000

Marking information

" 2SB772*U " = Part No. (" * " = HFE grouping Code)

" YM " = Date Code Marking

" Y " = Year

" M " = Month

Font type: Arial

