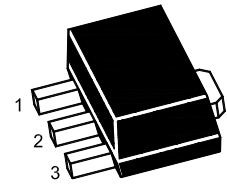


2SB1124U

PNP Silicon Epitaxial Planar Transistor



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

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

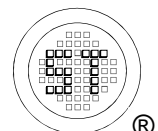
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CB0}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_c$	3	A
Collector Current (Pulse)	$-I_{CP}$	6	A
Collector Power Dissipation	P_C	0.5 ¹⁾ 1 ²⁾	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250 ¹⁾ 125 ²⁾	$^\circ\text{C/W}$

¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

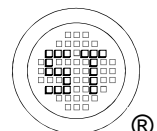
²⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.



2SB1124U

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $-V_{CE} = 2\text{ V}$, $-I_C = 100\text{ mA}$ at $-V_{CE} = 2\text{ V}$, $-I_C = 3\text{ A}$	Current Gain Group A	h_{FE}	100	-	200	-
	B	h_{FE}	140	-	280	-
	C	h_{FE}	200	-	400	-
		h_{FE}	35	-	-	-
Collector Base Cutoff Current at $-V_{CB} = 40\text{ V}$	$-I_{CBO}$	-	-	1	μA	
Emitter Base Cutoff Current at $-V_{EB} = 4\text{ V}$	$-I_{EBO}$	-	-	1	μA	
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	60	-	-	V	
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	$-V_{(BR)CEO}$	50	-	-	V	
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	6	-	-	V	
Collector Emitter Saturation Voltage at $-I_C = 2\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{CE(sat)}$	-	-	0.7	V	
Base Emitter Saturation Voltage at $-I_C = 2\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{BE(sat)}$	-	-	1.2	V	
Transition Frequency at $-V_{CE} = 10\text{ V}$, $-I_C = 50\text{ mA}$	f_T	-	150	-	MHz	
Collector Output Capacitance at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	30	-	pF	
Turn on Time at $-V_{CC} = 10\text{ V}$, $-I_C = 500\text{ mA}$, $-I_{B1} = -I_{B2} = 50\text{ mA}$	t_{on}	-	40	-	ns	
Turn off Time at $-V_{CC} = 10\text{ V}$, $-I_C = 500\text{ mA}$, $-I_{B1} = -I_{B2} = 50\text{ mA}$	t_{off}	-	450	-	ns	



2SB1124U

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

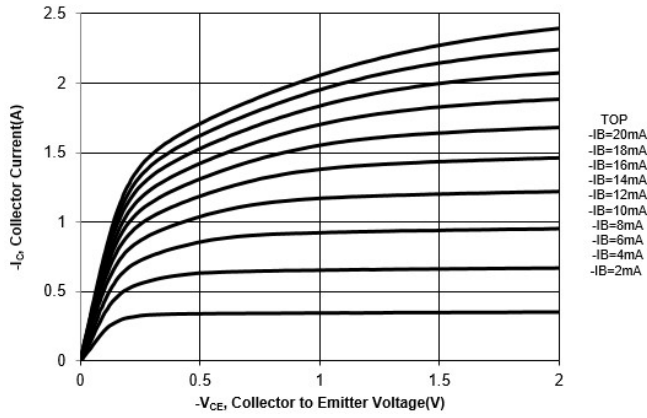


Fig. 2 Collector Current vs. V_{BE}

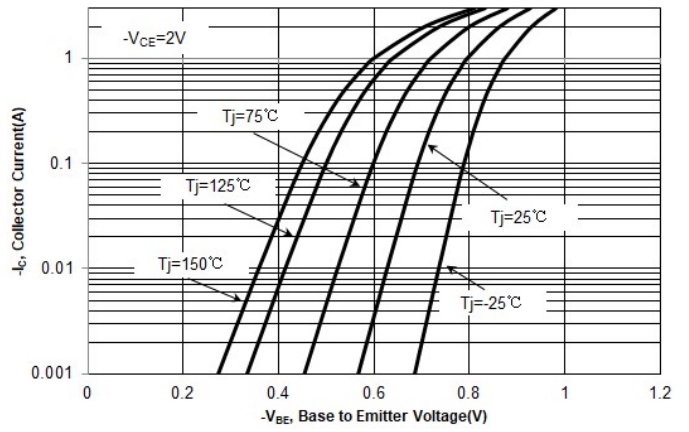


Fig. 3 h_{FE} vs. Collector Current

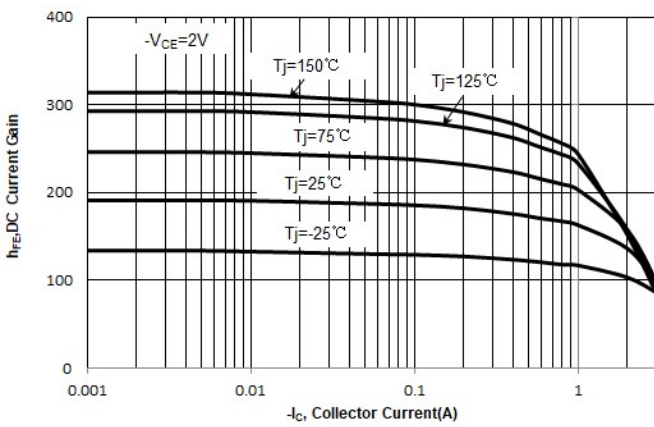
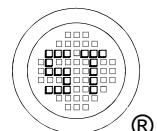
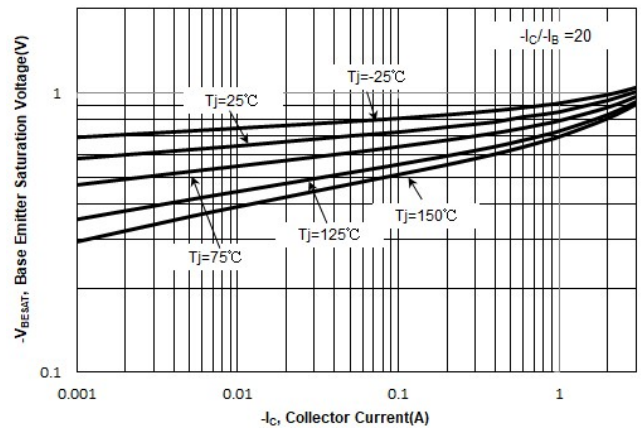


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



2SB1124U

Electrical Characteristics Curves

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

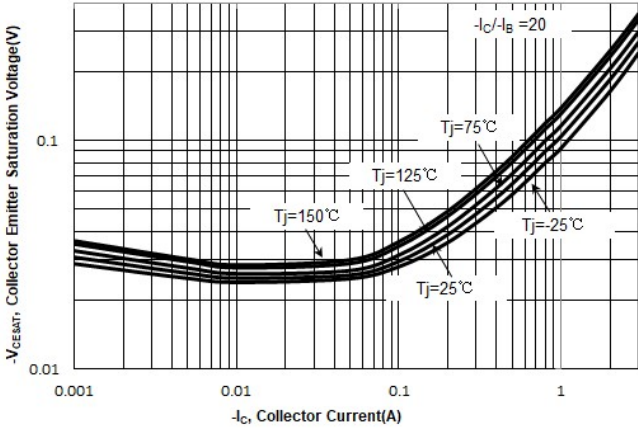


Fig 6. Output Capacitance

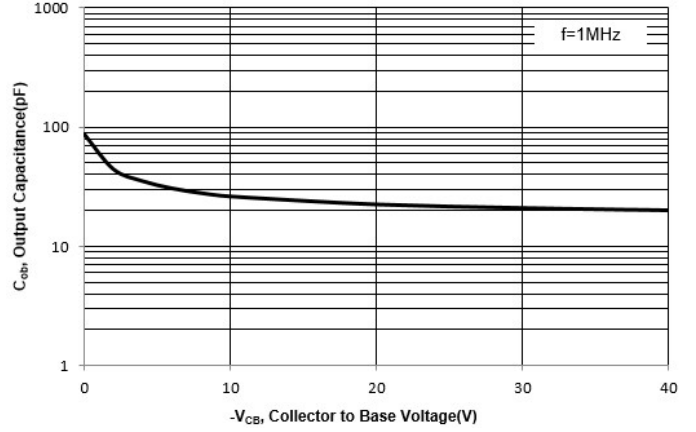
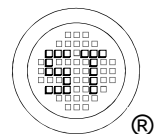
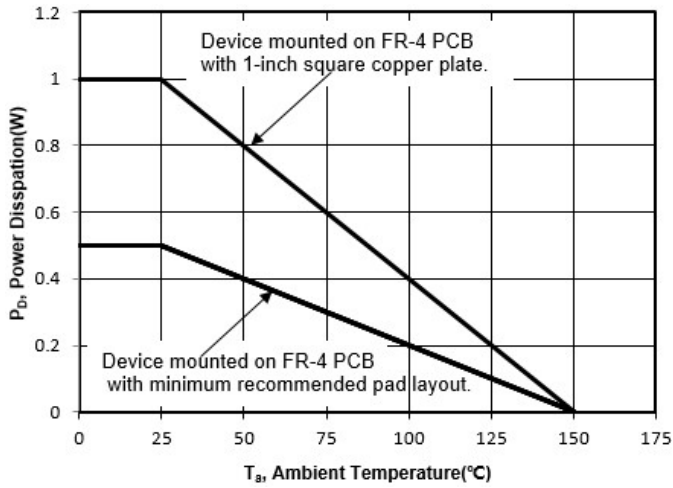


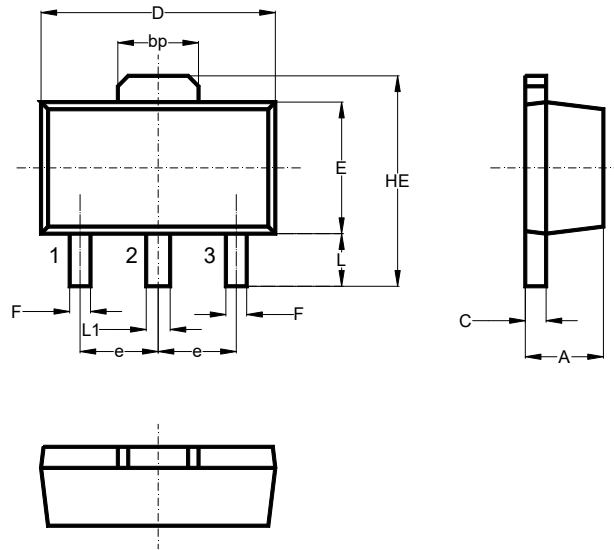
Fig .7 Power Derating Curve



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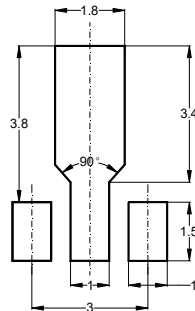
Package Outline (Dimensions in mm)

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

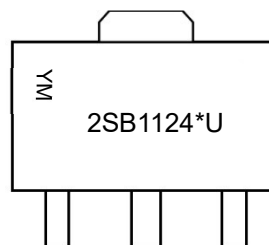
" 2SB1124*U " = Part No. (" * " Current Gain Group Code)

"YM" = Date Code Marking

"Y" = Year

"M" = Month

Font type: Arial



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