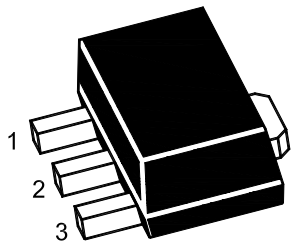
2SB751U

PNP Silicon Expitaxial Planar Power Transistor



1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	80	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	3	A
Peak Pulse Collector Current	$-I_{CM}$	6	A
Power Dissipation	P_D	1	W
Operating and Storage Temperature Range	T_j ,T_{stg}	- 55 to + 150	℃

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance - Junction to Ambient [1)]	$R_{\theta JA}$	125	℃/W

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

Dated : 06/07/2023 Rev：03

Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $-I_C$ = 50 mA, $-V_{CE}$ = 2 V	h_{FE}	70	-	-	-
at $-I_C$ = 500 mA, $-V_{CE}$ = 2 V	h_{FE}	100	-	300	-
at $-I_C$ = 1 A, $-V_{CE}$ = 2 V	h_{FE}	80	-	-	-
at $-I_C$ = 2 A, $-V_{CE}$ = 2 V	h_{FE}	40	-	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 60 V	$-I_{CBO}$	-	-	0.1	μA
Collector Base Cutoff Current at $-V_{CB}$ = 60 V, T_A = 100 ℃	$-I_{CBO}$	-	-	10	μA
Emitter Base Cutoff Current at $-V_{EB}$ = 4 V	$-I_{EBO}$	-	-	0.1	μA
Collector Base Breakdown Voltage at $-I_C$ = 100 μA	$-V_{(BR)CBO}$	80	-	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA	$-V_{(BR)CEO}$	60	-	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 100 μA	$-V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage at $-I_C$ = 1 A, $-I_B$ = 100 mA	$-V_{CE(sat)}$	-	-	0.3	V
Collector Emitter Saturation Voltage at $-I_C$ = 3 A, $-I_B$ = 300 mA	$-V_{CE(sat)}$			0.6	V
Base Emitter Saturation Voltage at $-I_C$ = 1 A, $-I_B$ = 100 mA	$-V_{BE(sat)}$	-	-	1.25	V
Base Emitter Turn-On Voltage at $-V_{CE}$ = 2 V, $-I_C$ = 1 A	$-V_{BE(ON)}$	-	-	1	V
Current Gain Bandwidth Product at $-I_C$ = 50 mA, $-V_{CE}$ = 10 V, f = 100 MHz	f_T	100	-	-	MHz
Turn-On Delay Time at $-I_C$ = 500 mA, $-V_{CC}$ = 10 V, $-I_{B1}$ = $-I_{B2}$ = 50 mA	$t_{d(on)}$	-	45	-	ns
Turn-Off Delay Time at $-I_C$ = 500 mA, $-V_{CC}$ = 10 V, $-I_{B1}$ = $-I_{B2}$ = 50 mA	t_{off}	-	200	-	ns
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz	C_{ob}	-	-	30	pF

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

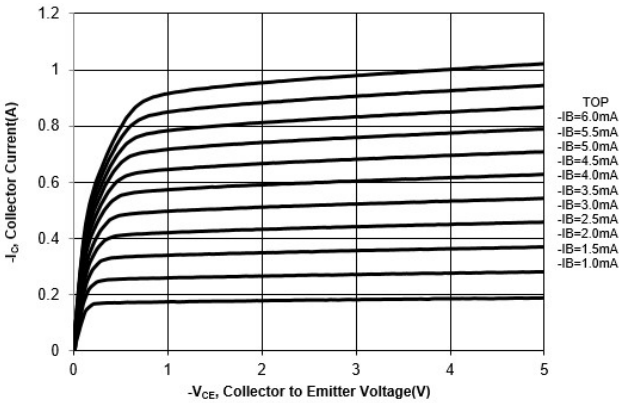


Fig. 2 Collector Current vs. V_{BE}

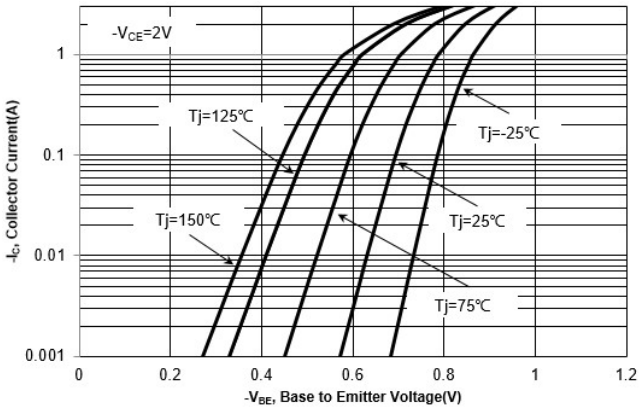


Fig. 3 h_{FE} vs. Collector Current

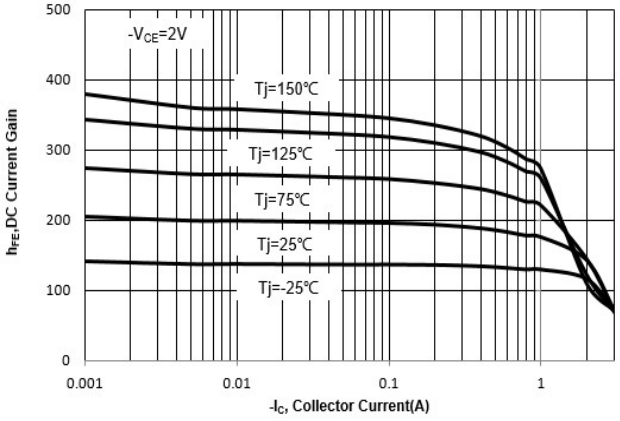
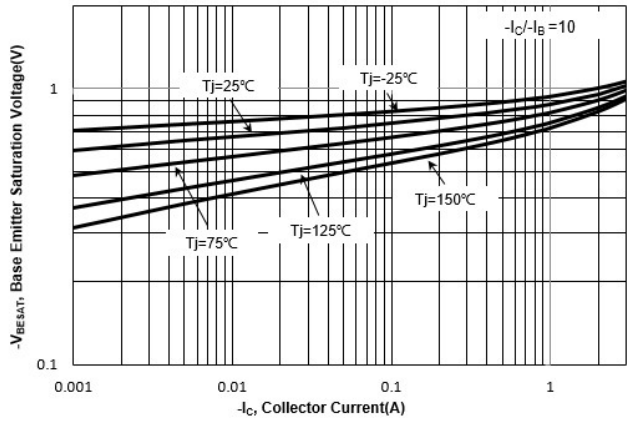


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



Electrical Characteristics Curves

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

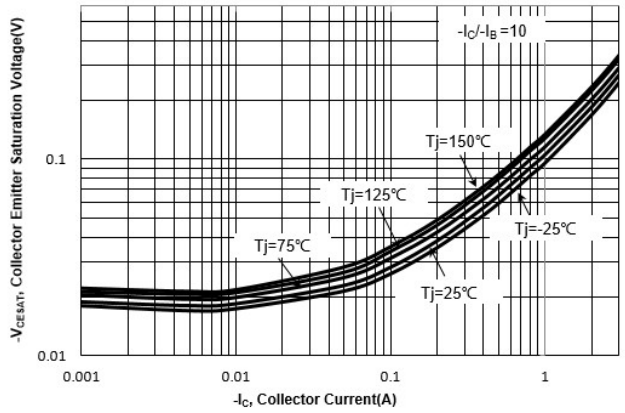


Fig 6. Output Capacitance

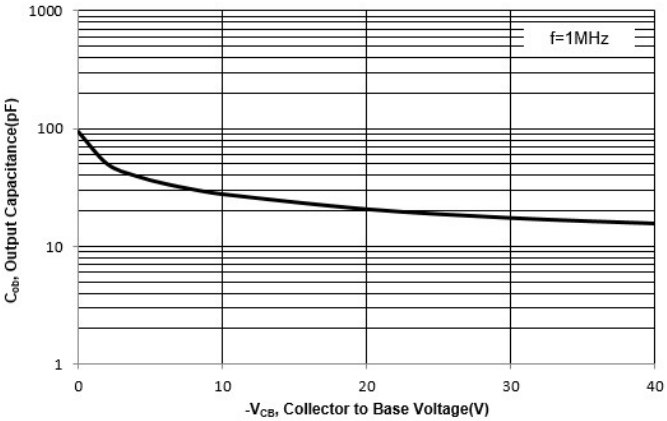
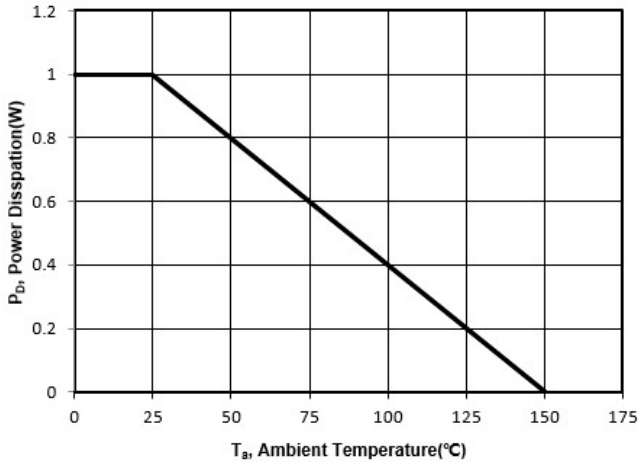


Fig. 7 Power Derating Curve



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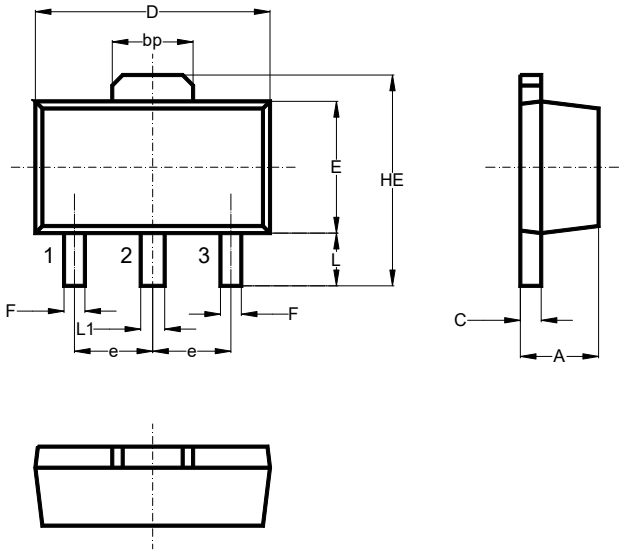
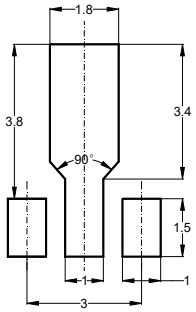
Package Outline (Dimensions in mm) SOT-89



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

" 2SB751U " = Part No
"YM" = Date Code Marking
"Y" = Year
"M" = Month
Font type: Arial