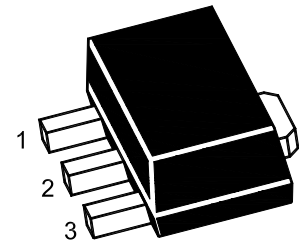


2SB751U

PNP Silicon Expitaxial Planar Power Transistor



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

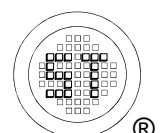
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CB0}$	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	$^\circ\text{C}$

Thermal Characteristics

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

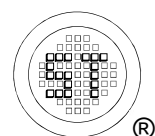
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate in still air.



2SB751U

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

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



2SB751U

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

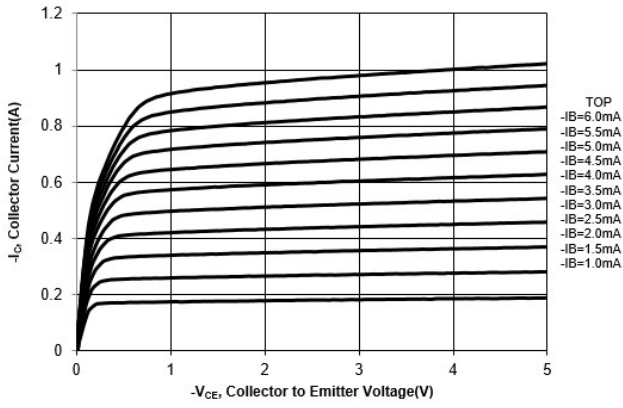


Fig. 2 Collector Current vs. V_{BE}

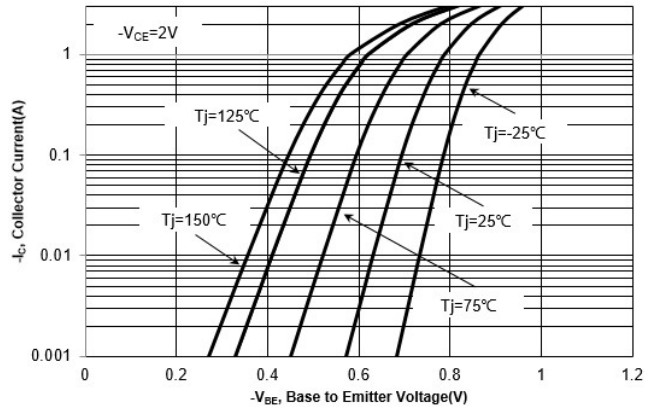


Fig. 3 h_{FE} vs. Collector Current

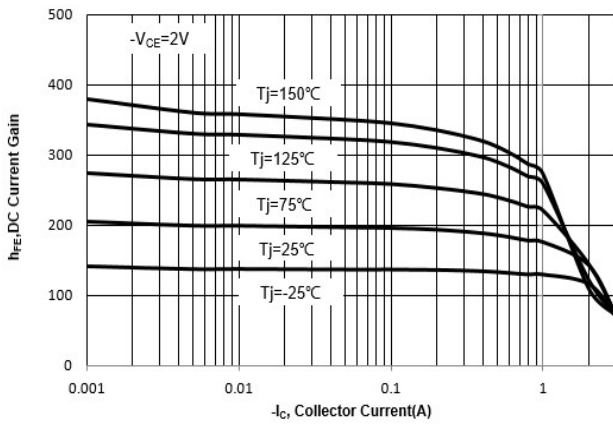
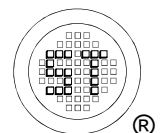
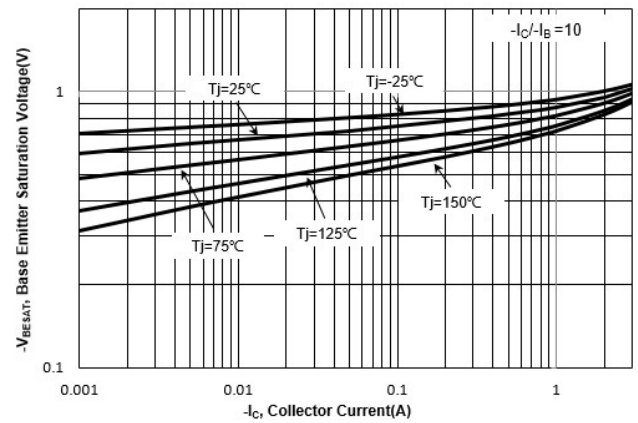


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



2SB751U

Electrical Characteristics Curves

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

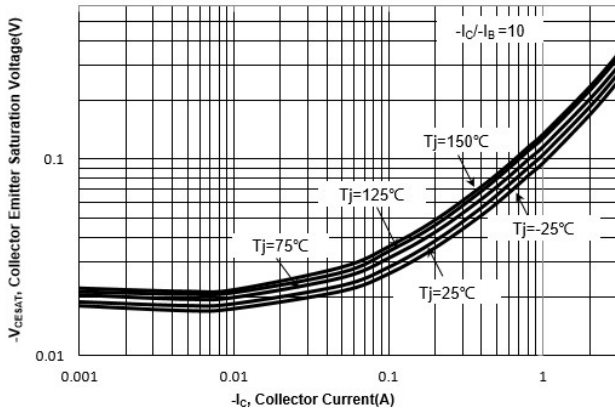


Fig 6. Output Capacitance

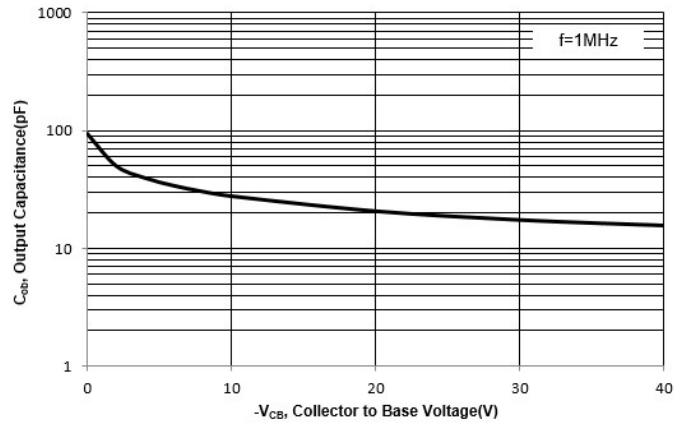
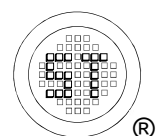
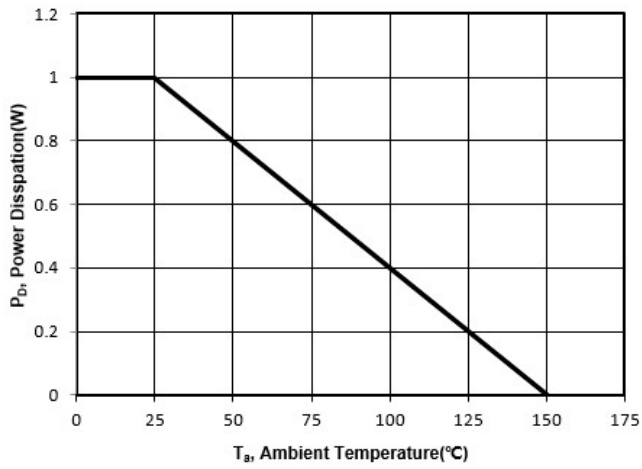


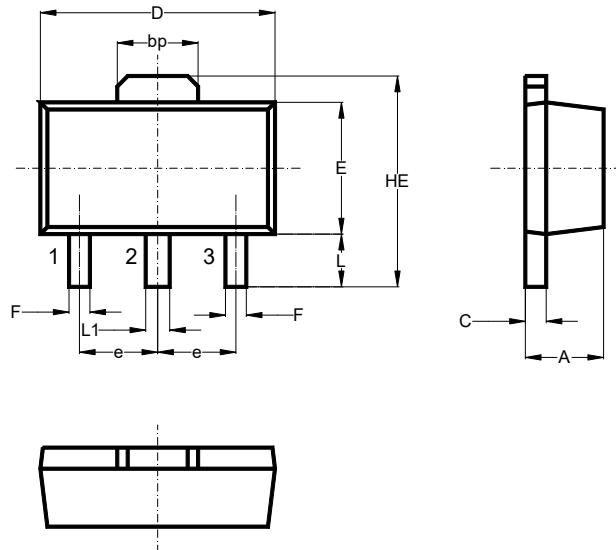
Fig. 7 Power Derating Curve



2SB751U

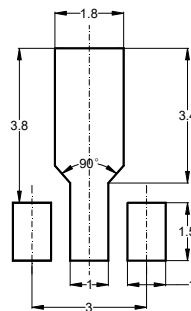
Package Outline (Dimensions in mm)

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

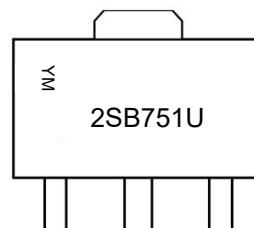


Packing information

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

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



Disclaimer: Our company reserve the right to make modifications, enhancements, improvements, corrections or other changes to improve product design, functions and reliability, anytime without notice. Semtech Electronics Limited makes no warranties, representations or warranties regarding the suitability of its products for any particular purpose, and does not accept any liability arising from the application or use of any product or circuit such as: Apply to medical, military, aircraft, space or life support equipment and expressly waive any and all liability, including but not limited to special, consequential or collateral damage.

