

2SD1751

Silicon NPN triple diffusion planar type

For power amplification

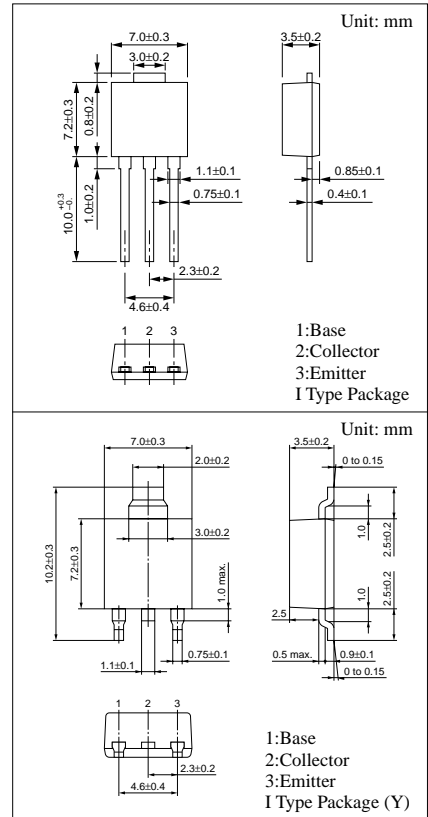
Complementary to 2SB1170

Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

Parameter	Symbol	Rated	Unit
Collector to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	60	V
Emitter to base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	4	A
Collector current	I_C	2	A
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	15
		$T_a=25^\circ\text{C}$	1.3
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



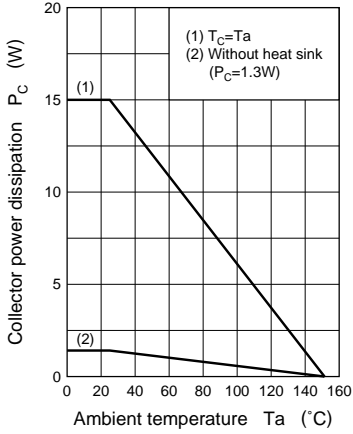
Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CES}	$V_{CE} = 60\text{V}, V_{BE} = 0$			200	μA
	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$			300	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			1	mA
Collector to emitter voltage	V_{CEO}	$I_C = 30\text{mA}, I_B = 0$	60			V
Forward current transfer ratio	h_{FE1}	$V_{CE} = 4\text{V}, I_C = 0.1\text{A}$	35			
	h_{FE2}^*	$V_{CE} = 4\text{V}, I_C = 1\text{A}$	70		250	
Base to emitter voltage	V_{BE}	$V_{CE} = 4\text{V}, I_C = 1\text{A}$			1.2	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{A}, I_B = 0.2\text{A}$			2	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}, f = 1\text{MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = 1\text{A}, I_{B1} = 0.1\text{A}, I_{B2} = -0.1\text{A}$		0.2		μs
Storage time	t_{stg}			3.5		μs
Fall time	t_f			0.7		μs

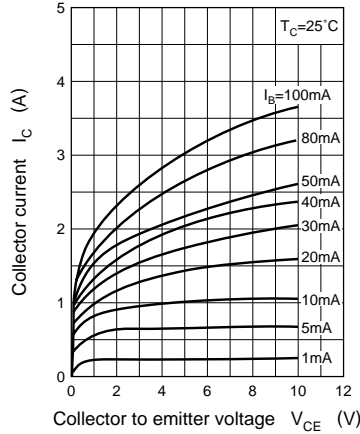
* h_{FE2} Rank classification

Rank	Q	P
h_{FE2}	70 to 150	120 to 250

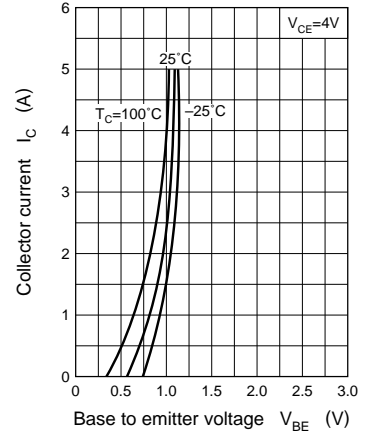
$P_C - T_a$



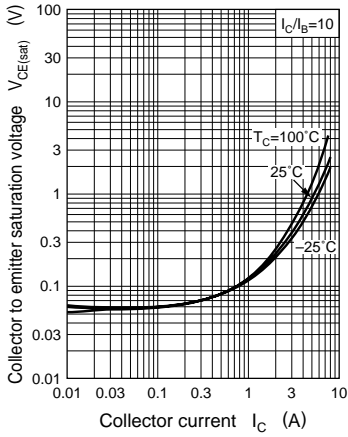
$I_C - V_{CE}$



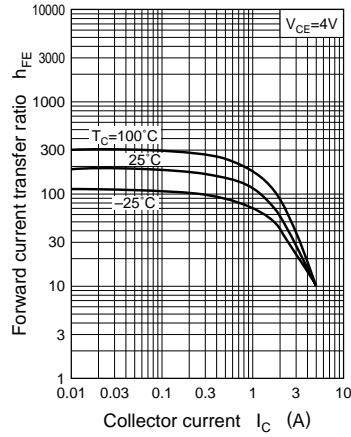
$I_C - V_{BE}$



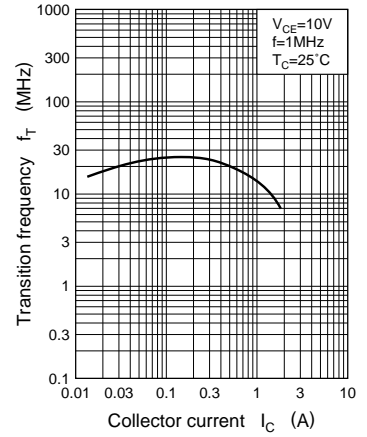
$V_{CE(sat)} - I_C$



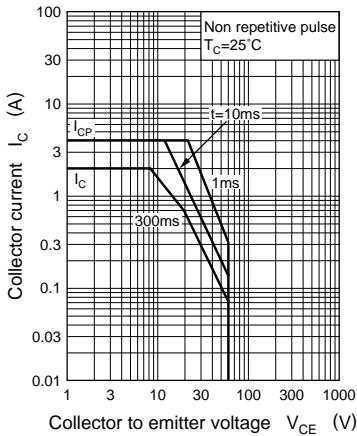
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

