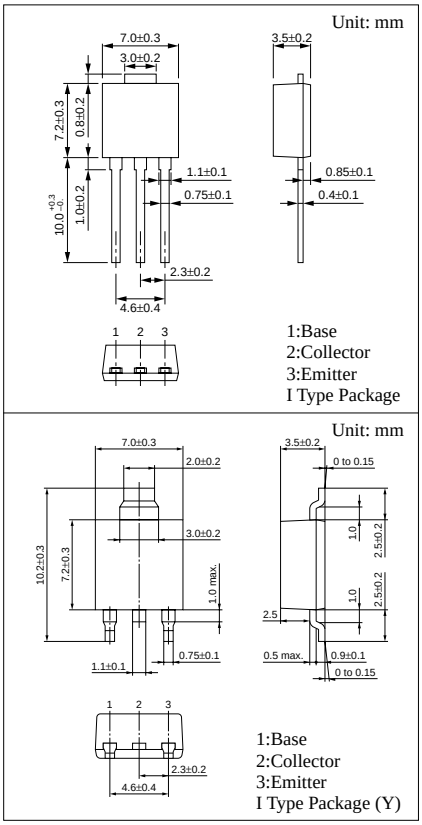
2SD1751

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˚C)

Parameter		Symbol	Ratings	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	T_C=25°C	P_C	15	W
	Ta=25°C		1.3	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

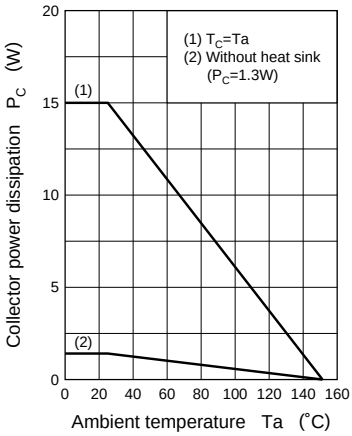
Electrical Characteristics (T_C=25˚C)

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

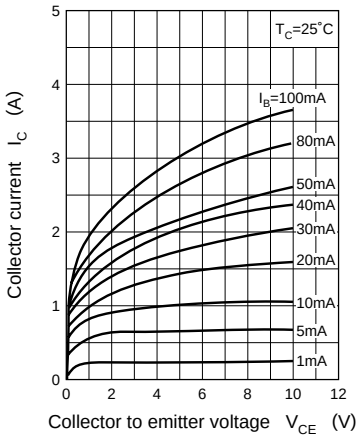
*h_{FE2} Rank classification

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

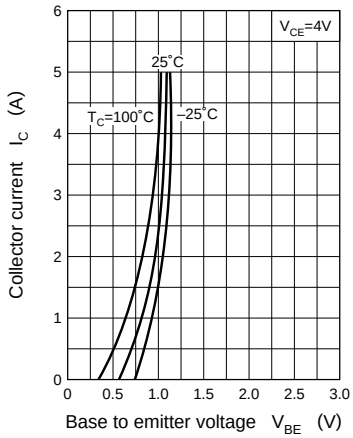
P_C — Ta



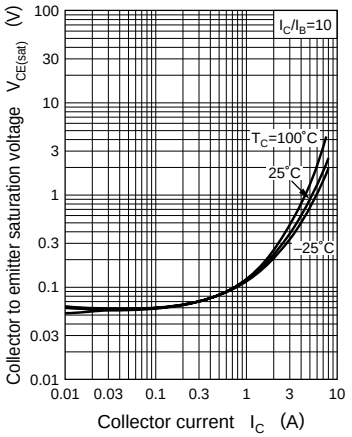
I_C — V_{CE}



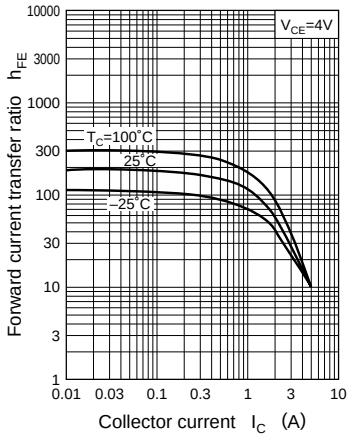
I_C — V_{BE}



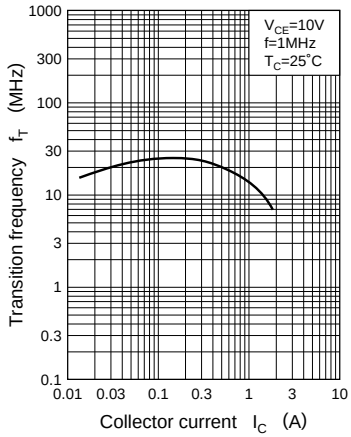
$V_{CE(sat)}$ — I_C



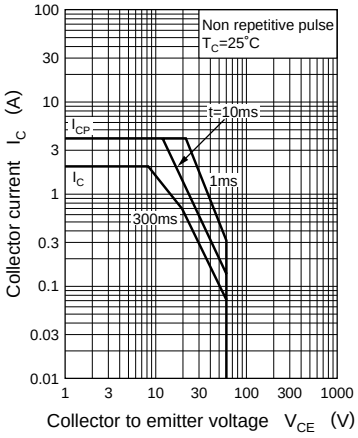
h_{FE} — I_C



f_T — I_C



Area of safe operation (ASO)



$R_{th(t)}$ — t