

2SD2374, 2SD2374A

Silicon NPN triple diffusion planar type

For power amplification

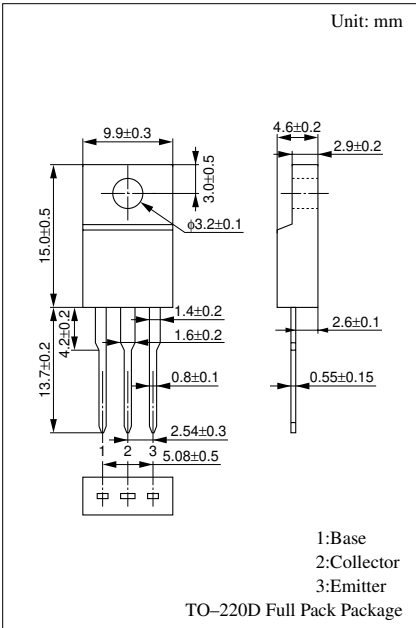
Complementary to 2SB1548 and 2SB1548A

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Full-pack package which can be installed to the heat sink with one screw

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

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}	5	A
Collector current	I_C	3	A
Collector power dissipation	P_C	25	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



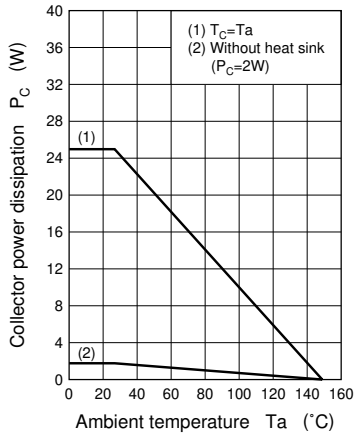
■ Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CES}	$V_{CE} = 60V, V_{BE} = 0$			200	μA
Collector cutoff current	I_{CES}	$V_{CE} = 80V, V_{BE} = 0$			200	μA
Emitter cutoff current	I_{CEO}	$V_{CE} = 30V, I_B = 0$			300	μA
Emitter cutoff current	I_{CEO}	$V_{CE} = 60V, I_B = 0$			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}	$V_{CE} = 4V, I_C = 1A$	70		250	
Forward current transfer ratio	h_{FE2}	$V_{CE} = 4V, I_C = 3A$	10			
Base to emitter voltage	V_{BE}	$V_{CE} = 4V, I_C = 3A$			1.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 0.375A$			1.2	V
Transition frequency	f_T	$V_{CE} = 10V, I_C = 0.5A, f = 10MHz$		30		MHz
Turn-on time	t_{on}	$I_C = 1A, I_{B1} = 0.1A, I_{B2} = -0.1A, V_{CC} = 50V$		0.5		μs
Storage time	t_{stg}	$I_C = 1A, I_{B1} = 0.1A, I_{B2} = -0.1A, V_{CC} = 50V$		2.5		μs
Fall time	t_f	$I_C = 1A, I_{B1} = 0.1A, I_{B2} = -0.1A, V_{CC} = 50V$		0.4		μs

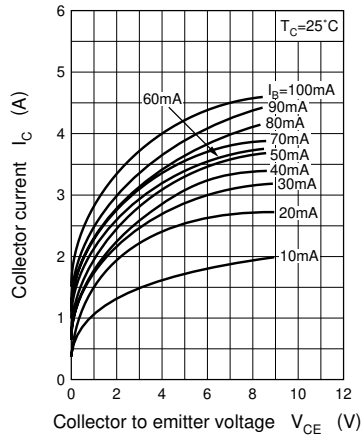
* h_{FE1} Rank classification

Rank	Q	P
h_{FE1}	70 to 150	120 to 250

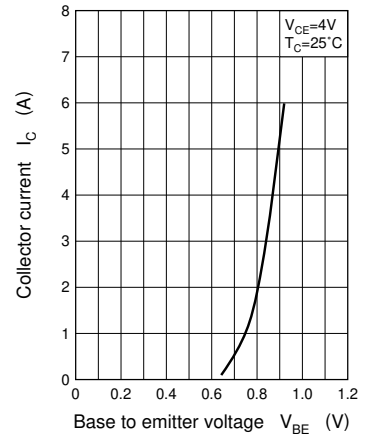
$P_C - T_a$



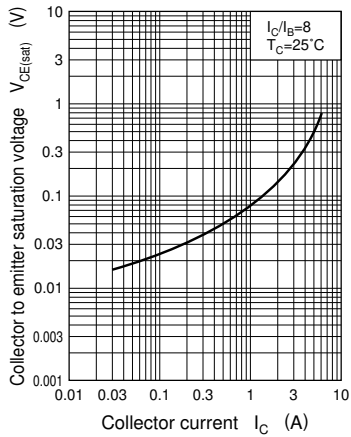
$I_C - V_{CE}$



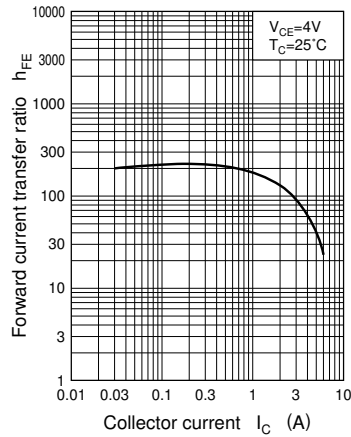
$I_C - V_{BE}$



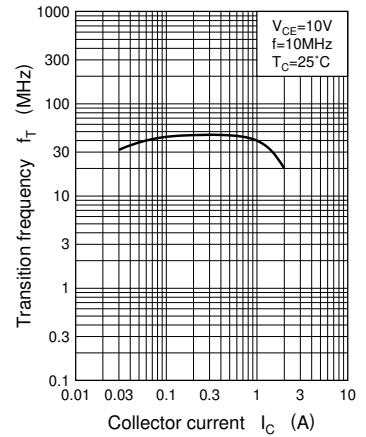
$V_{CE(sat)} - I_C$



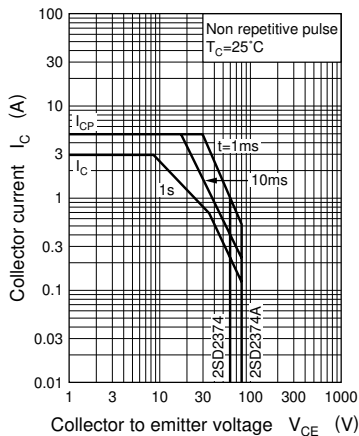
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

