

# 2SD2374, 2SD2374A

Silicon NPN triple diffusion planar type

For power amplification

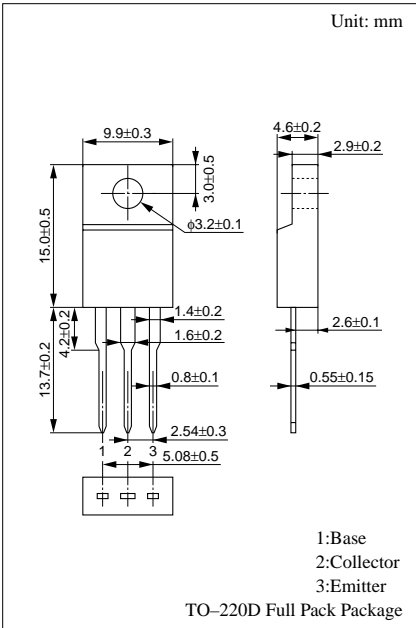
Complementary to 2SB1548 and 2SB1548A

## 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	$^\circ\text{C}$

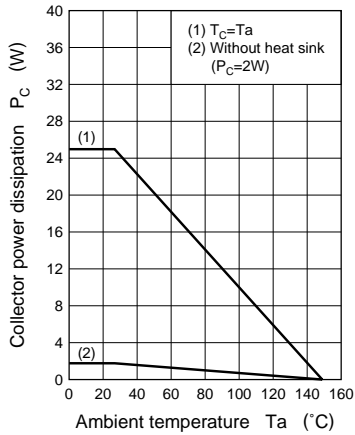
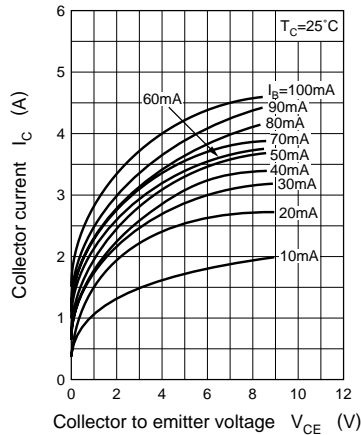
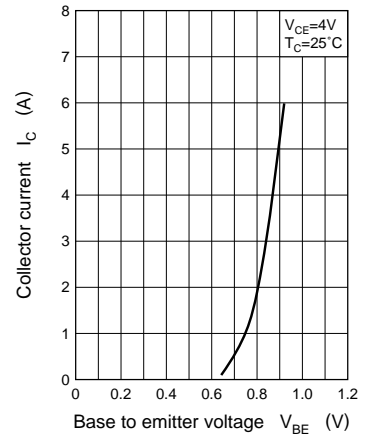
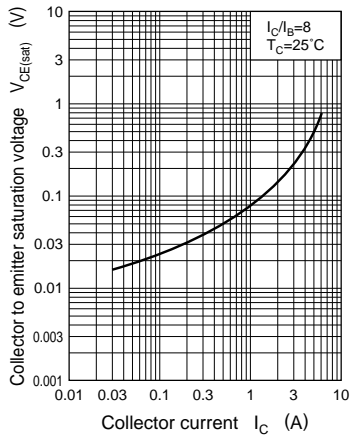
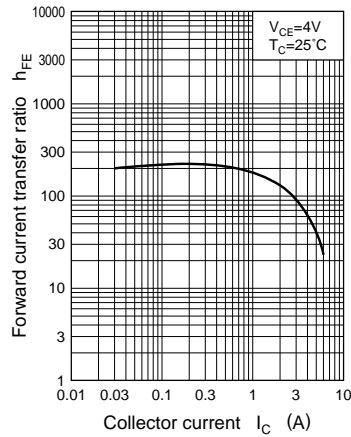
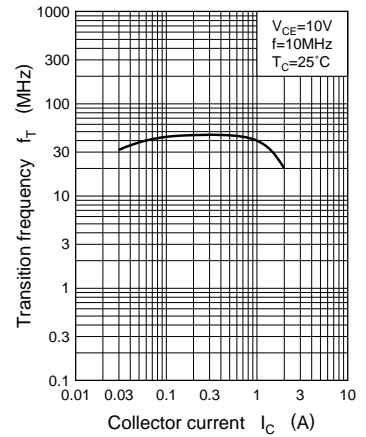


## Electrical Characteristics ( $T_C=25^\circ\text{C}$ )

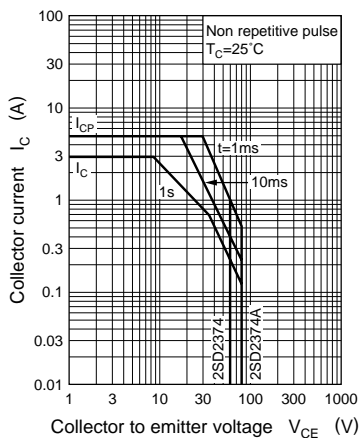
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CES}$	$V_{CE} = 60V, V_{BE} = 0$			200	$\mu\text{A}$
Collector cutoff current	$I_{CES}$	$V_{CE} = 80V, V_{BE} = 0$			200	$\mu\text{A}$
Emitter cutoff current	$I_{CEO}$	$V_{CE} = 30V, I_B = 0$			300	$\mu\text{A}$
Emitter cutoff current	$I_{CEO}$	$V_{CE} = 60V, I_B = 0$			300	$\mu\text{A}$
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		$\mu\text{s}$
Storage time	$t_{stg}$	$I_C = 1A, I_{B1} = 0.1A, I_{B2} = -0.1A, V_{CC} = 50V$		2.5		$\mu\text{s}$
Fall time	$t_f$	$I_C = 1A, I_{B1} = 0.1A, I_{B2} = -0.1A, V_{CC} = 50V$		0.4		$\mu\text{s}$

\* $h_{FE1}$  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)

 $R_{th(t)} - t$ 