

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 $T_C = 25^\circ\text{C}$

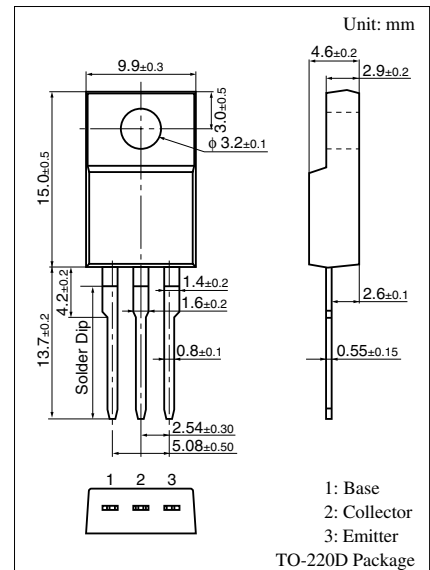
Parameter	Symbol	Rating	Unit
Collector to base voltage	2SD2374	60	V
	2SD2374A	80	
Collector to emitter voltage	2SD2374	60	V
	2SD2374A	80	
Emitter to base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	5	A
Collector current	I_C	3	A
Collector power dissipation	$T_C = 25^\circ\text{C}$ $T_a = 25^\circ\text{C}$	25	W
		2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

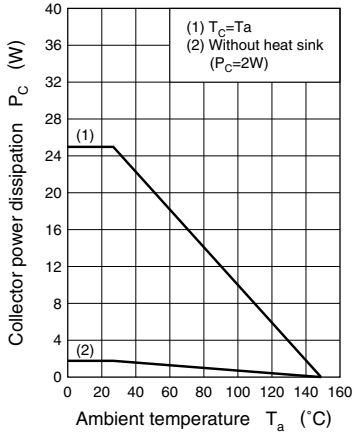
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SD2374	$V_{CE} = 60\text{ V}, V_{BE} = 0$			200	μA
	2SD2374A	$V_{CE} = 80\text{ V}, V_{BE} = 0$			200	
Emitter cutoff current	2SD2374	$V_{CE} = 30\text{ V}, I_B = 0$			300	μA
	2SD2374A	$V_{CE} = 60\text{ V}, I_B = 0$			300	
Emitter 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}^*	$V_{CE} = 4\text{ V}, I_C = 1\text{ A}$	70		250	
		$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	10			
Base to emitter voltage	V_{BE}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$			1.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.375\text{ A}$			1.2	V
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 10\text{ MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = 1\text{ A}, I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}, V_{CC} = 50\text{ V}$		0.5		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			0.4		μs

Note) *: Rank classification

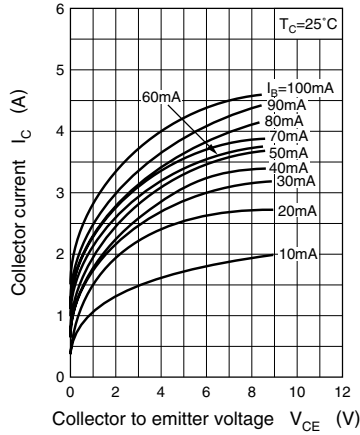
Rank	Q	P
h_{FE1}	70 to 150	120 to 250



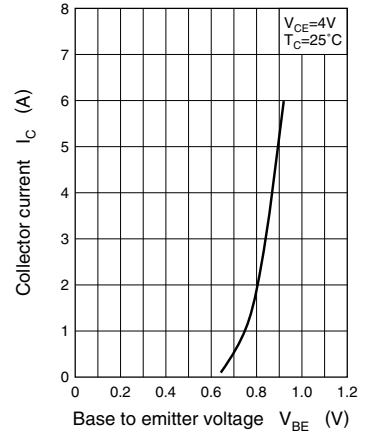
$P_C - T_a$



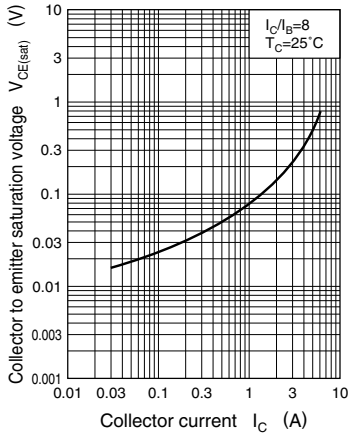
$I_C - V_{CE}$



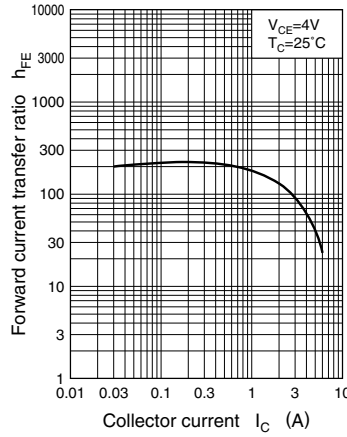
$I_C - V_{BE}$



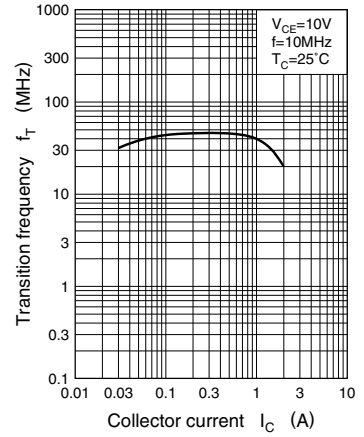
$V_{CE(sat)} - I_C$



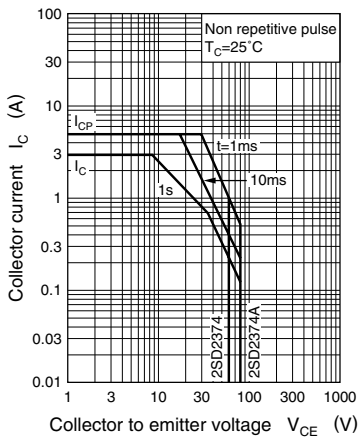
$h_{FE} - I_C$



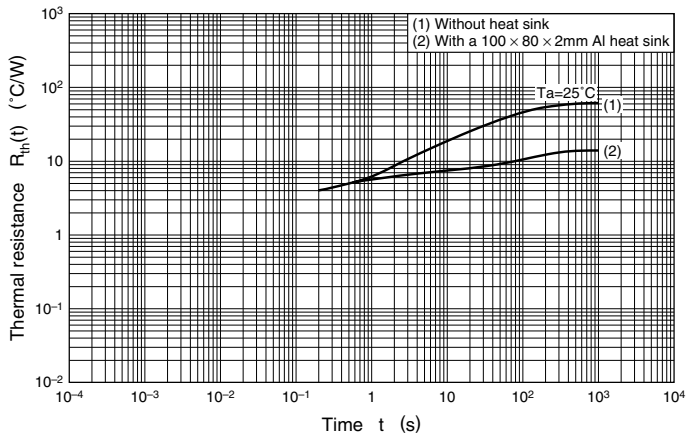
$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$



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