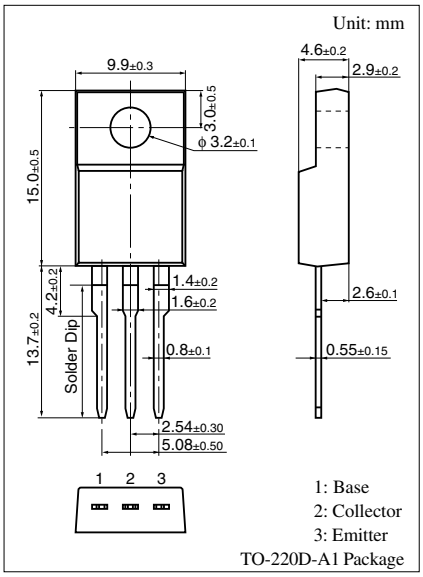
2SD2374, 2SD2374A

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 $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector to base voltage	2SD2374	V_{CBO}	60	V
	2SD2374A		80	
Collector to emitter voltage	2SD2374	V_{CEO}	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	$T_C = 25°C$	P_C	25	W
	$T_a = 25°C$		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

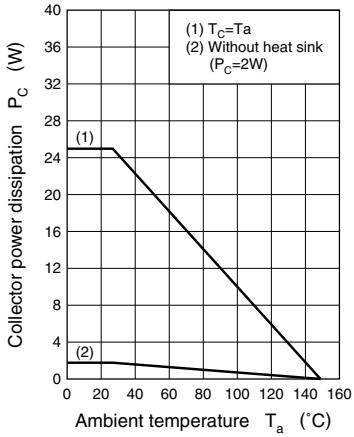
■ Electrical Characteristics $T_C = 25°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SD2374	I_{CES}	V_{CE} = 60 V, V_{BE} = 0			200	µA
	2SD2374A		V_{CE} = 80 V, V_{BE} = 0			200	
Emitter cutoff current	2SD2374	I_{CEO}	V_{CE} = 30 V, I_B = 0			300	µA
	2SD2374A		V_{CE} = 60 V, I_B = 0			300	
Emitter cutoff current		I_{EBO}	V_{EB} = 6 V, I_C = 0			1	mA
Collector to emitter voltage		V_{CEO}	I_C = 30 mA, I_B = 0	60			V
Forward current transfer ratio		h_{FE1} *	V_{CE} = 4 V, I_C = 1 A	70		250	
		h_{FE2}	V_{CE} = 4 V, I_C = 3 A	10			
Base to emitter voltage		V_{BE}	V_{CE} = 4 V, I_C = 3 A			1.8	V
Collector to emitter saturation voltage		$V_{CE(sat)}$	I_C = 3 A, I_B = 0.375 A			1.2	V
Transition frequency		f_T	V_{CE} = 10 V, I_C = 0.5 A, f = 10 MHz		30		MHz
Turn-on time		t_{on}	I_C = 1 A, I_{B1} = 0.1 A, I_{B2} = − 0.1 A, V_{CC} = 50 V		0.5		µs
Storage time		t_{stg}			2.5		µs
Fall time		t_f			0.4		µs

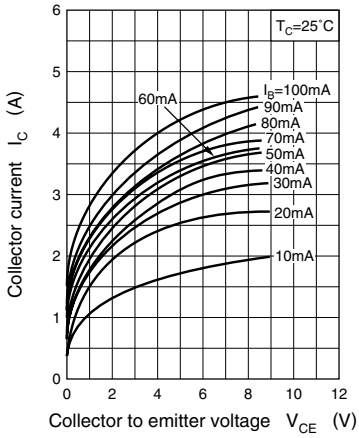
Note) ∗: Rank classification

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

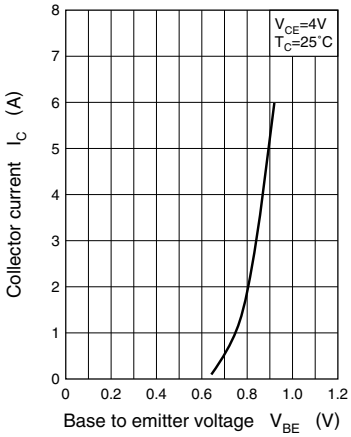
P_C — T_a



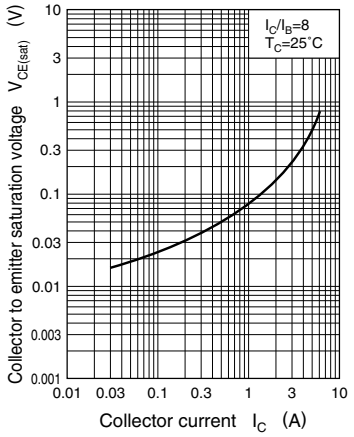
I_C — V_{CE}



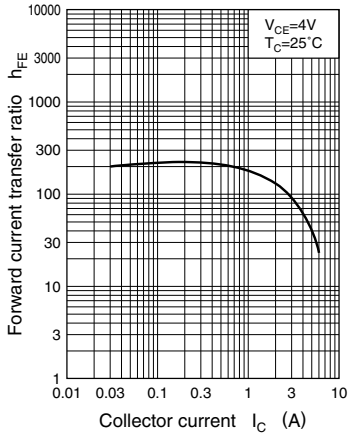
I_C — V_{BE}



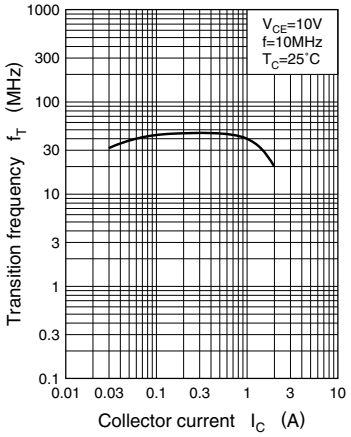
$V_{CE(sat)}$ — I_C



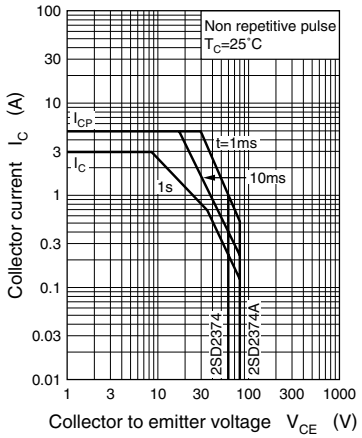
h_{FE} — I_C



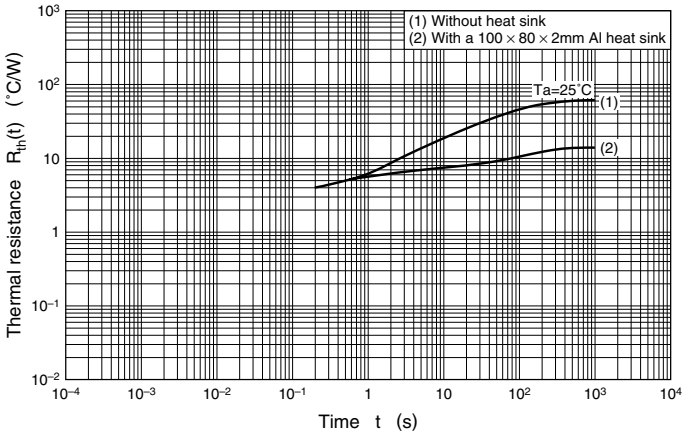
f_T — I_C



Area of safe operation (ASO)



$R_{th(t)}$ — t



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