

2SD1742, 2SD1742A

Silicon NPN triple diffusion planar type

For low-frequency power amplification

Complementary to 2SB1172 and 2SB1172A

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector-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 $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SD1742	60	V
	2SD1742A	80	
Collector-emitter voltage (Base open)	2SD1742	60	V
	2SD1742A	80	
Emitter-base voltage (Collector open)	V_{EBO}	6	V
Collector current	I_C	3	A
Peak collector current	I_{CP}	5	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	15	W
		1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

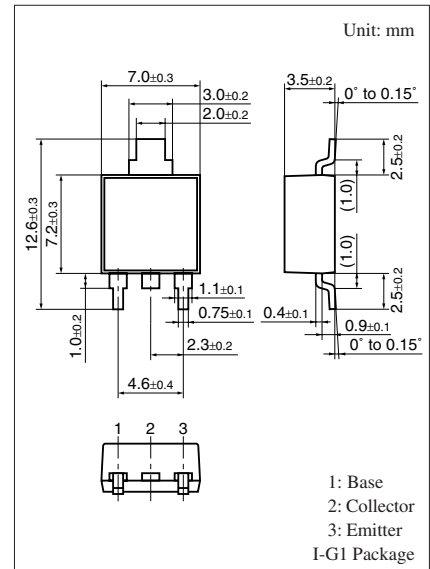
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1742	$I_C = 30 \text{ mA}, I_B = 0$	60			V
	2SD1742A					
Base-emitter voltage	V_{BE}	$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$			1.8	V
Collector-emitter cutoff current (E-B short)	2SB1742	$V_{CE} = 60 \text{ V}, V_{BE} = 0$			200	μA
	2SB1742A					
Collector-base cutoff current (Emitter open)	2SB1742	$V_{CB} = 30 \text{ V}, I_E = 0$			300	μA
	2SB1742A					
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 6 \text{ V}, I_C = 0$			1	mA
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}$	70		250	—
	h_{FE2}	$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$	10			
Collector-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}	$I_C = 1 \text{ A}, I_{B1} = 0.1 \text{ A}, I_{B2} = -0.1 \text{ A}$		0.5		μs
Storage time	t_{stg}	$V_{CC} = 50 \text{ V}$		2.5		μs
Fall time	t_f		0.4		μs	

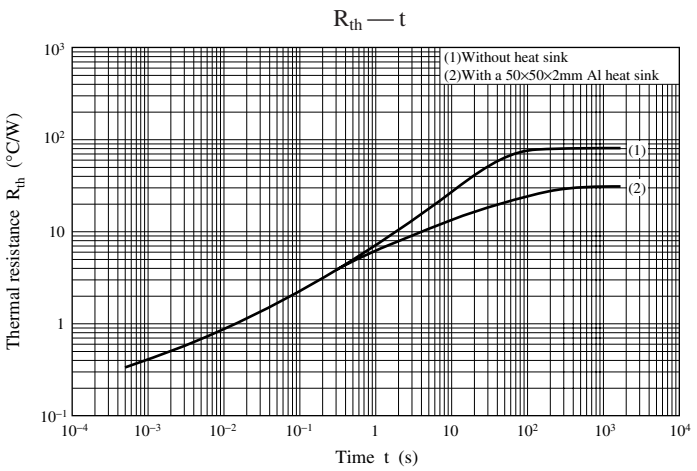
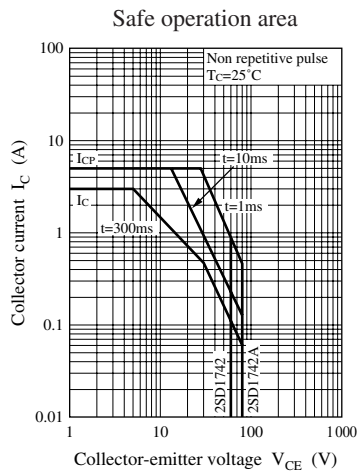
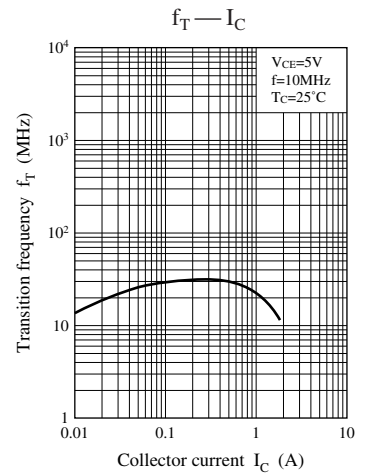
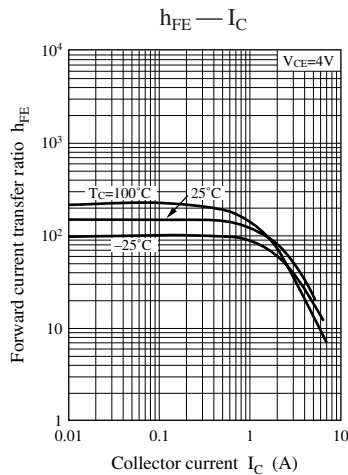
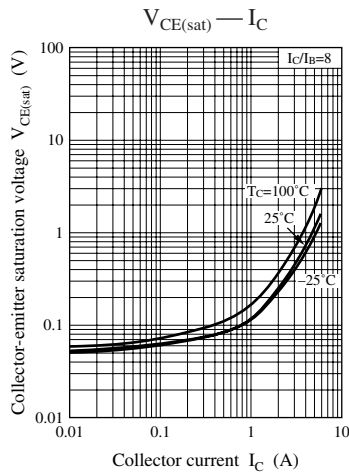
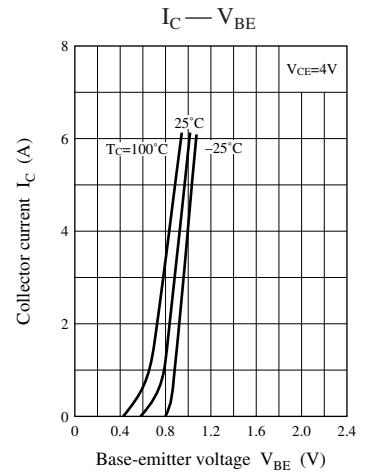
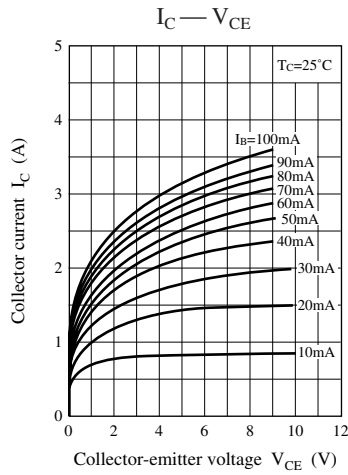
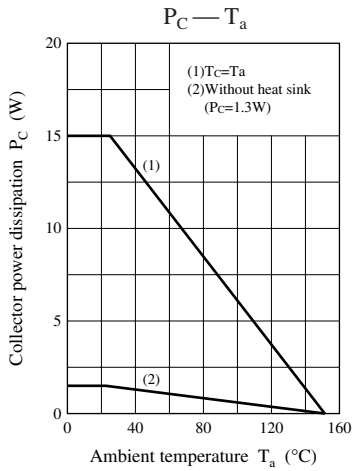
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

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



Note) Self-supported type package is also prepared.



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