

2SD1742, 2SD1742A

Silicon NPN triple diffusion planar type

For low-frequency power amplification

Complementary to 2SB1172 and 2SB1172A

Features

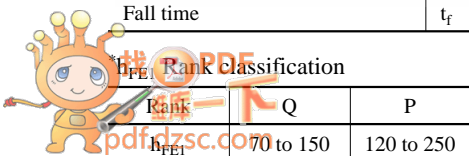
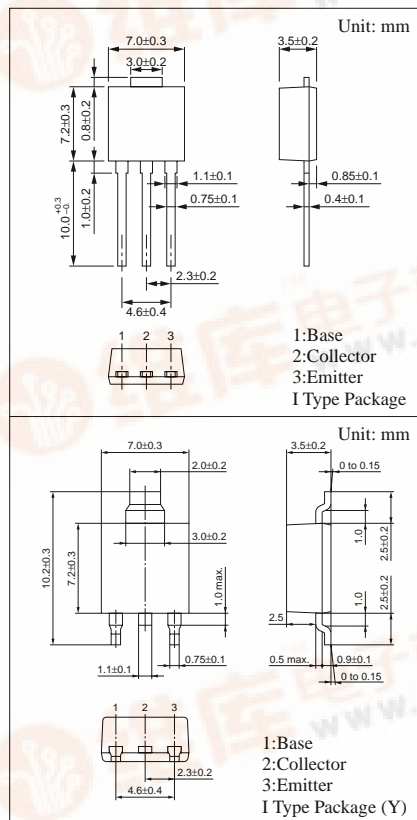
- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

Absolute Maximum Ratings ($T_C=25^\circ C$)

Parameter	Symbol	Rated	Unit
Collector to base voltage	V_{CBO}	60	V
2SD1742		80	
Collector to emitter voltage	V_{CEO}	60	V
2SD1742A		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	P_C	15	W
$T_C=25^\circ C$		1.3	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

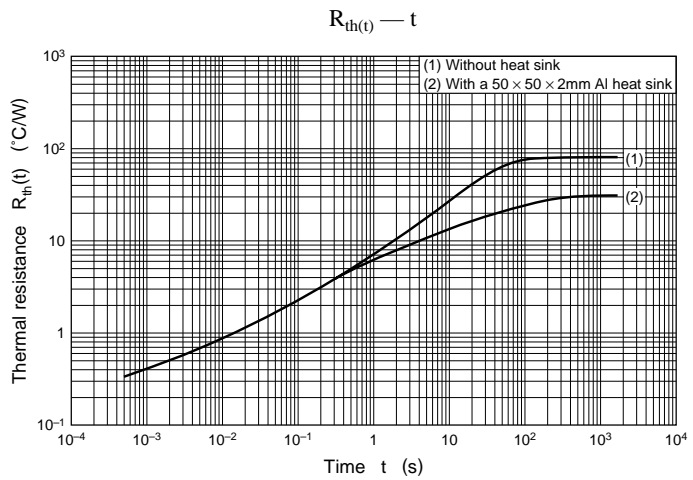
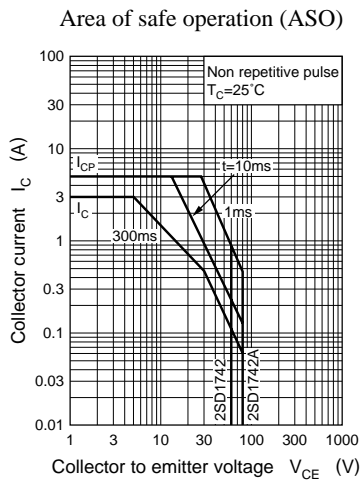
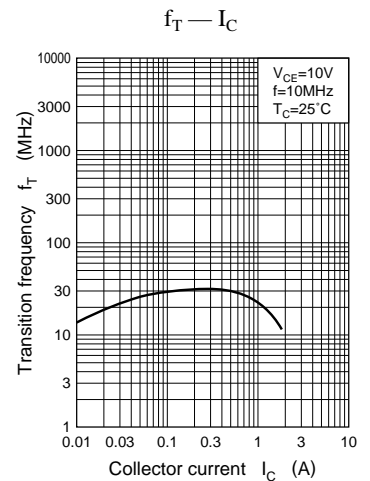
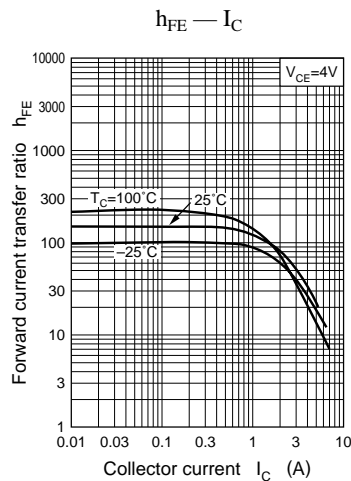
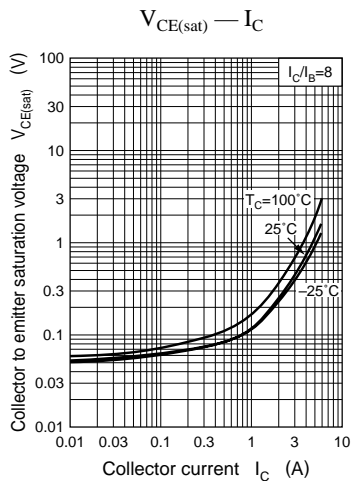
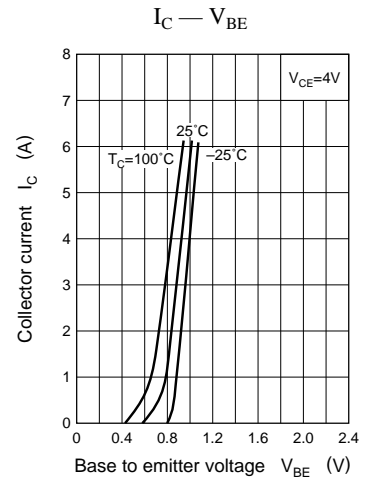
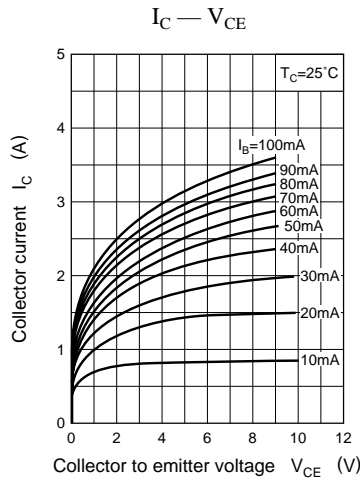
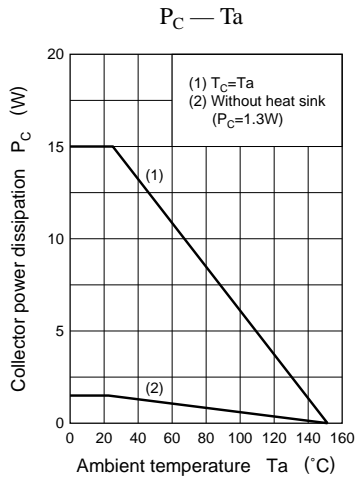
Electrical Characteristics ($T_C=25^\circ C$)

Parameter	Symbol	Conditions	min	typ	max	Unit	
Collector cutoff current	I_{CES}	$V_{CE} = 60V, V_{BE} = 0$			200	μA	
2SD1742A		$V_{CE} = 80V, V_{BE} = 0$			200		
Collector cutoff current	I_{CEO}	$V_{CE} = 30V, I_B = 0$			300	μA	
2SD1742A		$V_{CE} = 60V, I_B = 0$			300		
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	
2SD1742A			80				
Forward current transfer ratio	h_{FE1}^*	$V_{CE} = 4V, I_C = 1A$	70		250		
	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}				2.5		μs
Fall time	t_f				0.4		μs



Power Transistors

2SD1742, 2SD1742A



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