

2SD1749, 2SD1749A

Silicon NPN triple diffusion planar type Darlington

For low-frequency power amplification

Complementary to 2SB1179 and 2SB1179A

Features

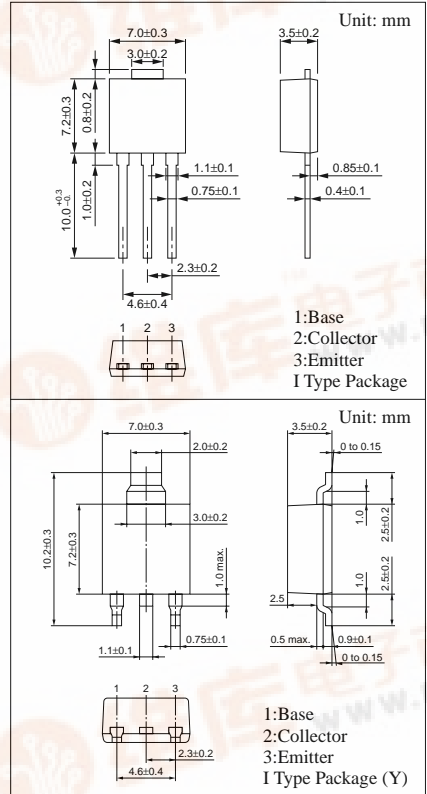
- High forward current transfer ratio h_{FE}
- High-speed switching
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

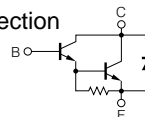
Parameter	Symbol	Rated	Unit
Collector to base voltage	2SD1749	60	V
	2SD1749A	80	
Collector to emitter voltage	2SD1749	60	V
	2SD1749A	80	
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Collector power dissipation	$T_C=25^\circ C$	15	W
	$T_a=25^\circ C$	1.3	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

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

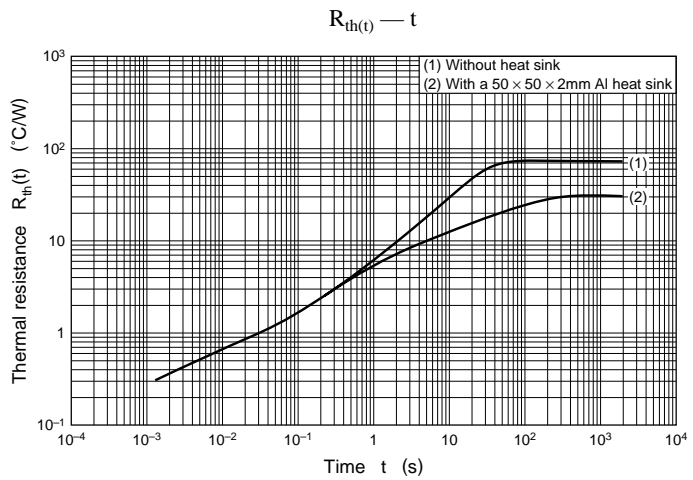
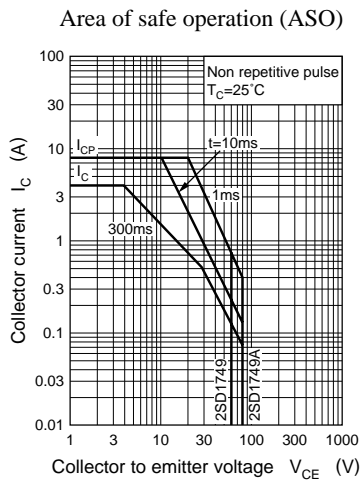
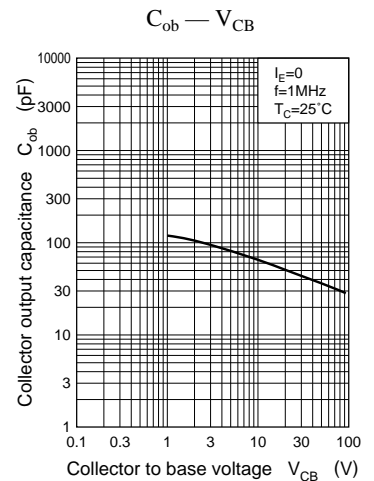
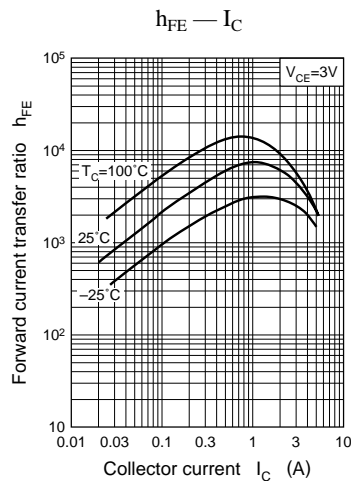
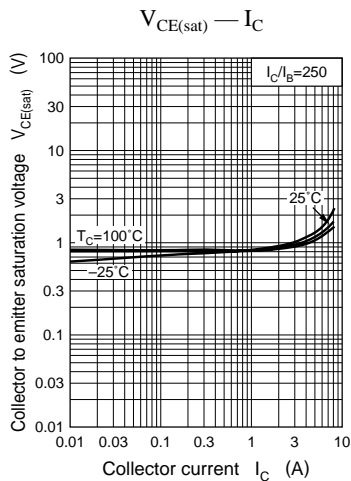
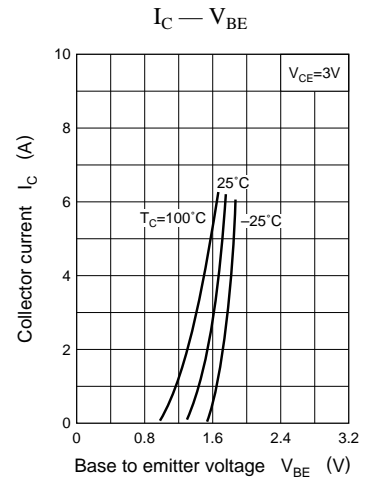
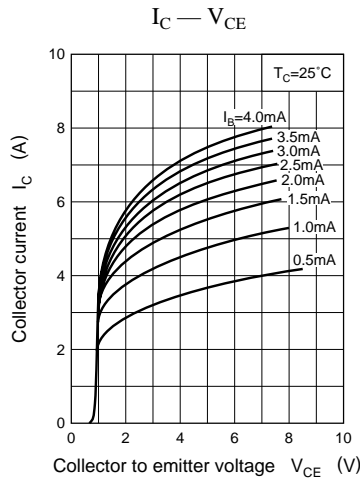
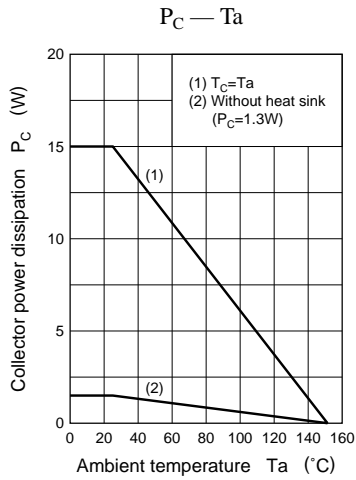
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	2SD1749	$V_{CB} = 60V, I_E = 0$			200	μA
	2SD1749A				200	
Collector cutoff current	2SD1749	$V_{CE} = 30V, I_B = 0$			500	μA
	2SD1749A				500	
Emitter cutoff current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			2	mA
Collector to emitter voltage	2SD1749	$I_C = 30mA, I_B = 0$	60			V
	2SD1749A		80			
Forward current transfer ratio	h_{FE1}	$V_{CE} = 3V, I_C = 0.5A$	1000			
	h_{FE2}^*	$V_{CE} = 3V, I_C = 3A$	2000		10000	
Base to emitter voltage	V_{BE}	$V_{CE} = 3V, I_C = 3A$			2.5	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 12mA$			2	V
		$I_C = 5A, I_B = 20mA$			4	
Transition frequency	f_T	$V_{CE} = 10V, I_C = 0.5A, f = 1MHz$		20		MHz
Turn-on time	t_{on}	$I_C = 3A, I_{B1} = 12mA, I_{B2} = -12mA, V_{CC} = 50V$		0.5		μs
Storage time	t_{stg}			4		μs
Fall time	t_f			1		μs



Internal Connection



h_{FE2} Rank Classification	Q	P
h_{FE2}	2000 to 5000	4000 to 10000



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