

2SD2209

Silicon NPN triple diffusion planar type Darlington

For power amplification and switching

Features

- 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°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	100±15	V
Collector to emitter voltage	V _{CEO}	100±15	V
Emitter to base voltage	V _{EBO}	5	V
Peak collector current	I _{CP}	8	A
Collector current	I _C	4	A
Collector power dissipation	P _C	T _C =25°C	15
		T _a =25°C	1.3
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

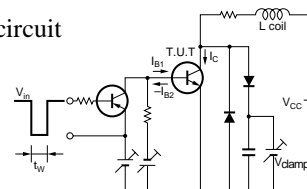
Electrical Characteristics (T_C=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I _{CBO}	V _{CB} = 85V, I _E = 0			100	µA
Emitter cutoff current	I _{EBO}	V _{EB} = 5V, I _C = 0			2	mA
Collector to emitter voltage	V _{CEO}	I _C = 5mA, I _B = 0	85		115	V
Forward current transfer ratio	h _{FE1}	V _{CE} = 3V, I _C = 0.5A	1000			
	h _{FE2} *1	V _{CE} = 3V, I _C = 3A	1000		10000	
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 3A, I _B = 12mA			2	V
		I _C = 5A, I _B = 20mA			4	
Base to emitter saturation voltage	V _{BE(sat)}	I _C = 3A, I _B = 12mA			2.5	V
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			0.3	µs
Storage time	t _{stg}				3.0	µs
Fall time	t _f				1.0	µs
Energy handling capability	E _{s/b} *2	I _C = 1A, L = 100mH, R _{BE} = 100Ω		50		mJ

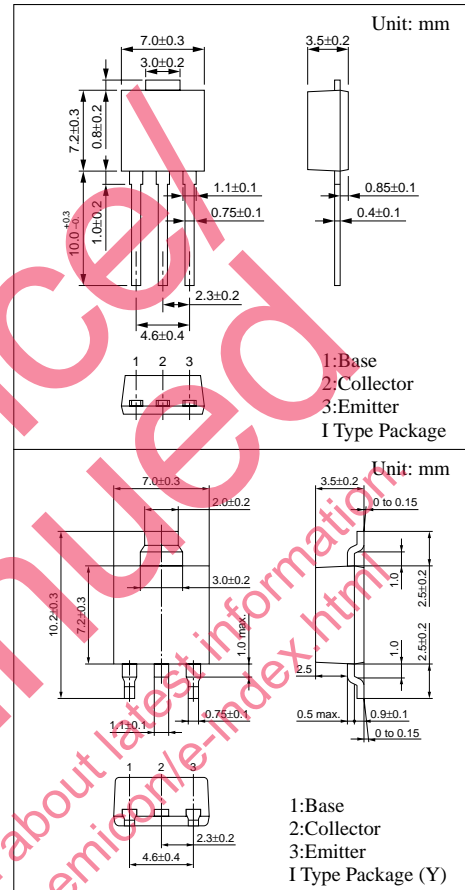
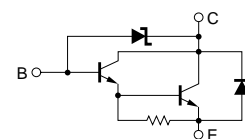
*1 h_{FE2} Rank classification

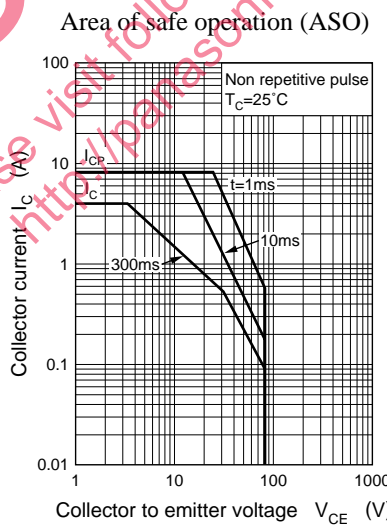
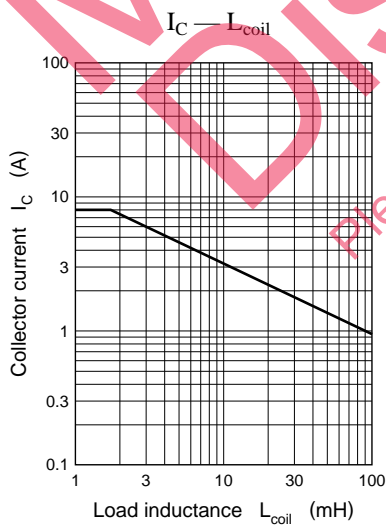
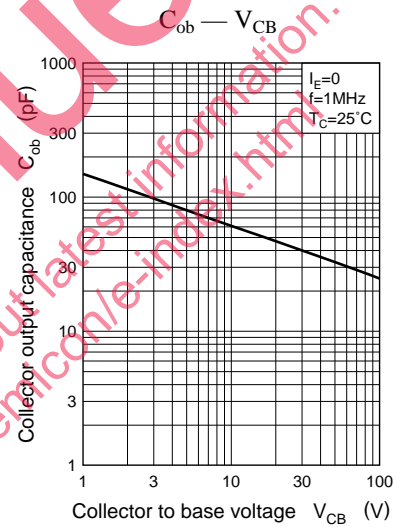
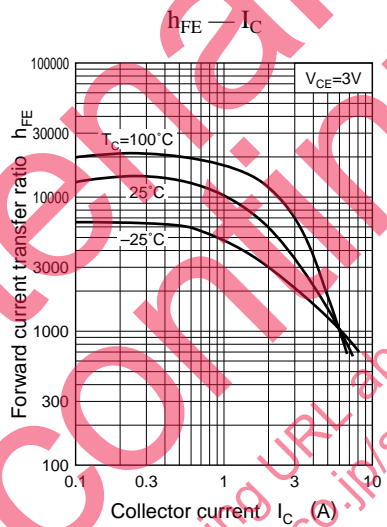
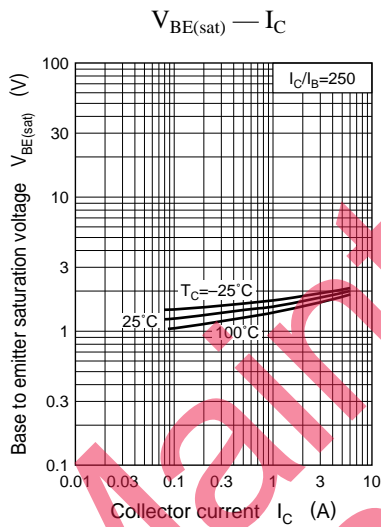
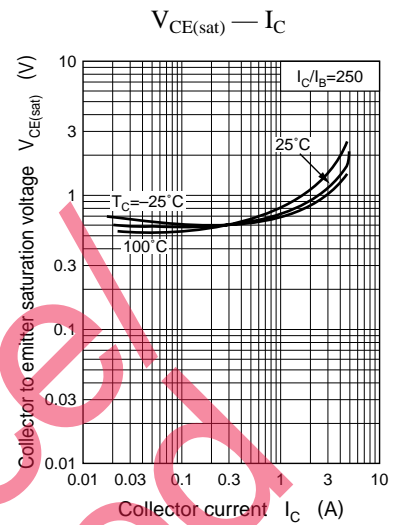
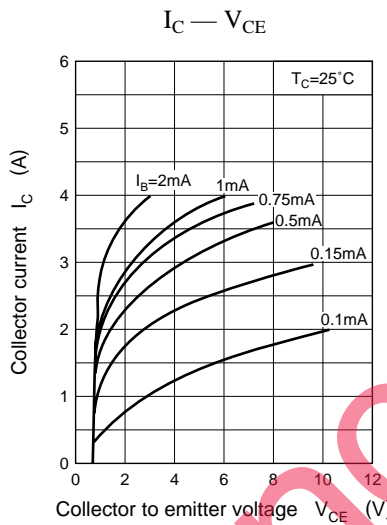
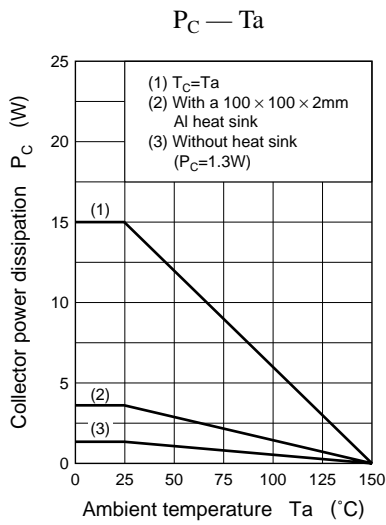
Rank	Q	P
h _{FE2}	1000 to 5000	2000 to 10000

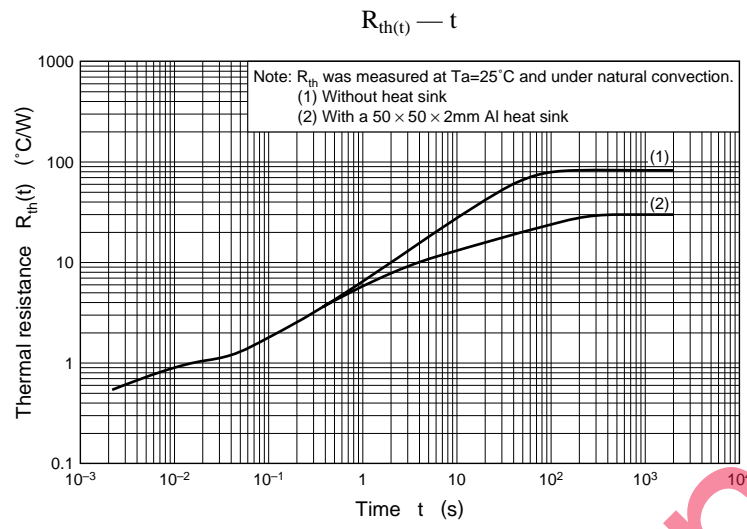
*2 E_{s/b} Test circuit



Internal Connection







Maintenance/Discontinued

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