

# 2SD1326

Silicon NPN triple diffusion planar type Darlington

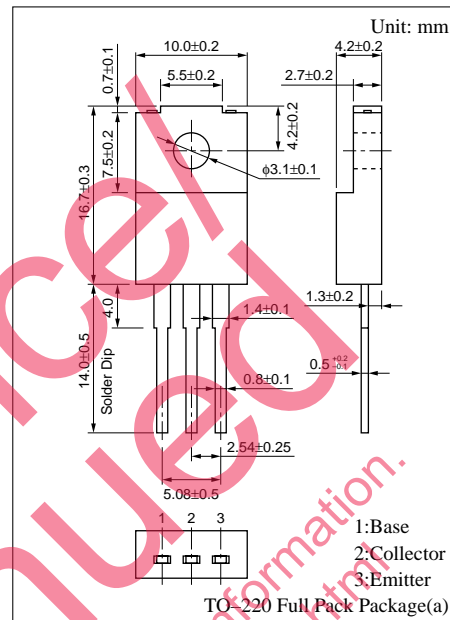
For midium speed power switching

### ■ Features

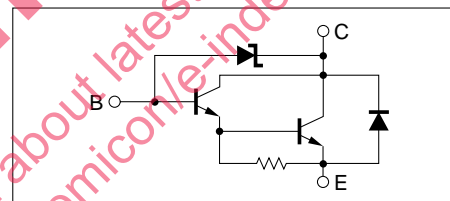
- Incorporating a zener diode of 60V zener voltage between collector and base
- Minimized variation in the breakdown voltage
- Large energy handling capability
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

### ■ Absolute Maximum Ratings (T<sub>C</sub>=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V <sub>CBO</sub>	60±10	V
Collector to emitter voltage	V <sub>CEO</sub>	60±10	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Peak collector current	I <sub>CP</sub>	8	A
Collector current	I <sub>C</sub>	4	A
Collector power dissipation	P <sub>C</sub>	T <sub>C</sub> =25°C	40
		T <sub>a</sub> =25°C	2
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



### Internal Connection



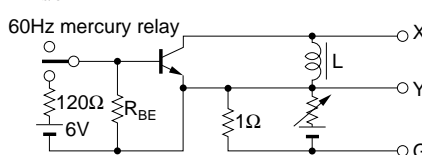
### ■ Electrical Characteristics (T<sub>C</sub>=25°C)

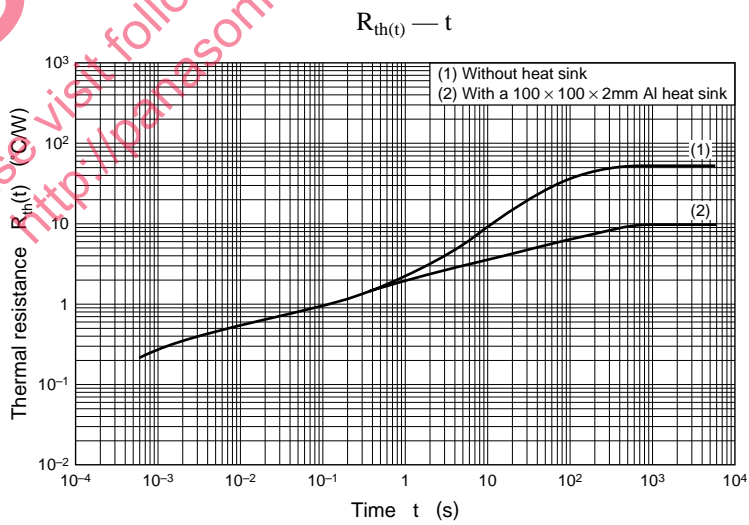
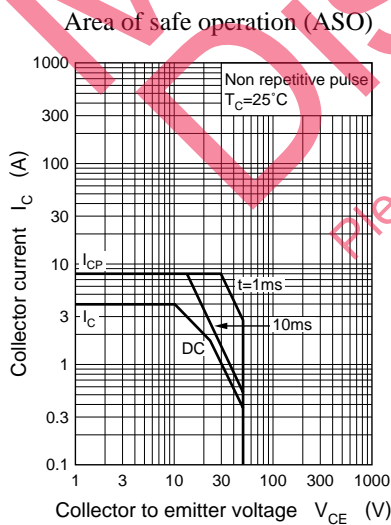
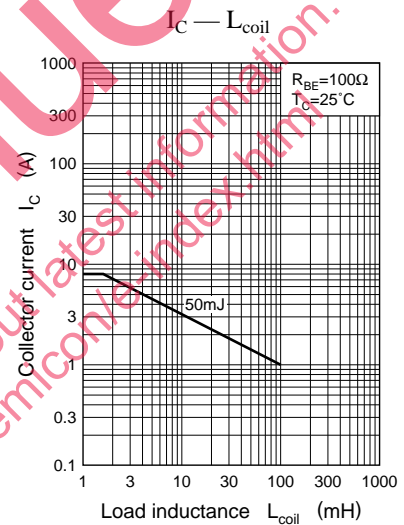
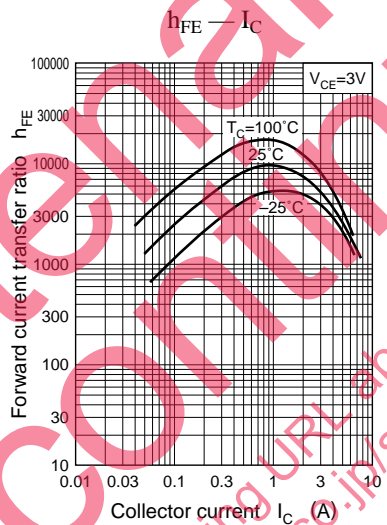
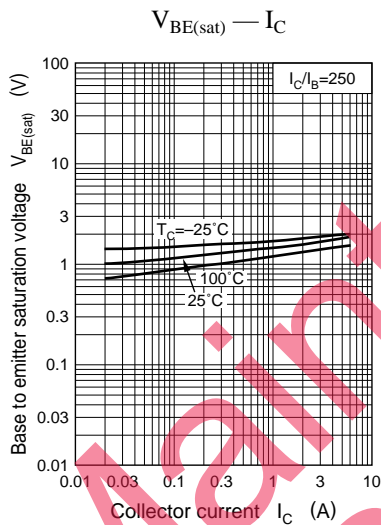
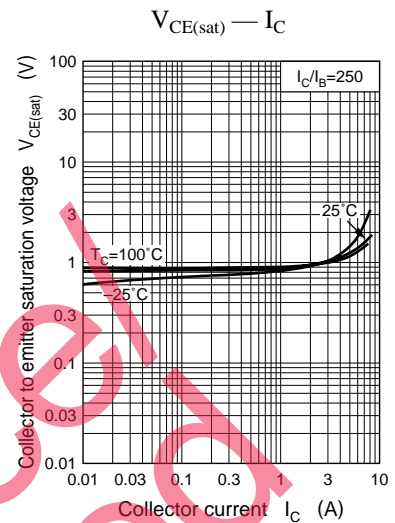
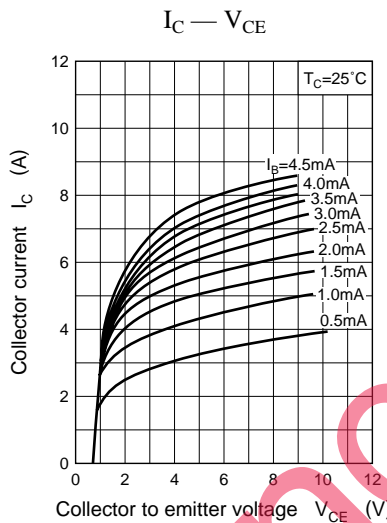
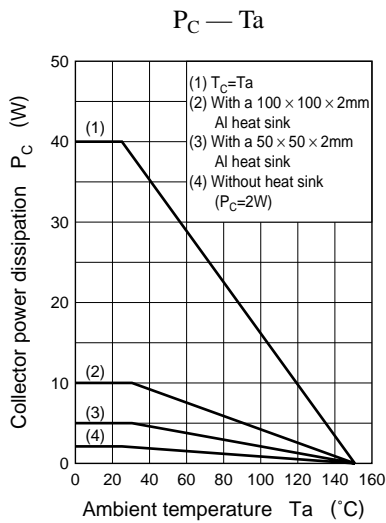
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> = 50V, I <sub>E</sub> = 0			100	µA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			2	mA
Collector to emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = 5mA, I <sub>B</sub> = 0	50		70	V
Forward current transfer ratio	h <sub>FE1</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 0.5A	1000			
	h <sub>FE2</sub> <sup>*1</sup>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 3A	2000		10000	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 12mA			2.5	V
		I <sub>C</sub> = 5A, I <sub>B</sub> = 20mA			4	V
Base to emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 12mA			2.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.5A, f = 1MHz		20		MHz
Turn-on time	t <sub>on</sub>	I <sub>C</sub> = 3A, I <sub>B1</sub> = 12mA, I <sub>B2</sub> = -12mA, V <sub>CC</sub> = 50V		0.3		µs
Storage time	t <sub>stg</sub>			3		µs
Fall time	t <sub>f</sub>			1		µs
Energy handling capability	E <sub>s/b</sub> <sup>*2</sup>	I <sub>C</sub> = 2A, L = 100mH, R <sub>BE</sub> = 100Ω	50			mJ

<sup>\*1</sup>h<sub>FE2</sub> Rank classification

Rank	Q	P
h <sub>FE2</sub>	2000 to 5000	4000 to 10000

<sup>\*2</sup>E<sub>s/b</sub> Test circuit





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