

2SD1320

Silicon NPN Triple-Diffused Planar Darlington Type

Medium Speed Power Switching

■ Features

- 60V Zener diode built-in between C and B
- Very small fluctuation in breakdown voltages
- Large energy handling capability
- High speed switching
- "N Type" package configuration with a cooling fin for direct soldering on PC board of a small-size electronic equipment

■ Absolute Maximum Ratings (T_c=25°C)

Item	Symbol	Value	Unit
Collector-base voltage	V _{CB0}	60 ± 10	V
Collector-emitter voltage	V _{CEO}	60 ± 10	V
Emitter-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	40
		T _a = 25 °C	1.3
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

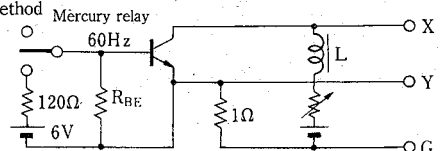
■ Electrical Characteristics (T_c=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit	
Collector cutoff current	I _{CB0}	V _{CB} = 50 V, I _E = 0			100	μA	
Emitter cutoff current	I _{EBO}	V _{EB} = 5 V, I _C = 0			2	mA	
Collector-emitter voltage	V _{CEO}	I _C = 5 mA, I _B = 0	50		70	V	
DC current gain	h _{FE1}	V _{CE} = 3 V, I _C = 0.5 A	1000				
	h _{FE2} *1	V _{CE} = 3 V, I _C = 3 A	1000		10000		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C = 3 A, I _B = 12 mA			2.5	V	
		I _C = 5 A, I _B = 20 mA			4	V	
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 3 A, I _B = 12 mA			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		μs
Fall time	t _f				1		μs
Energy handling capability	E _{s/b} *2	I _C = 2 A, L = 100 mH, R _{BE} = 100 Ω	50			mJ	

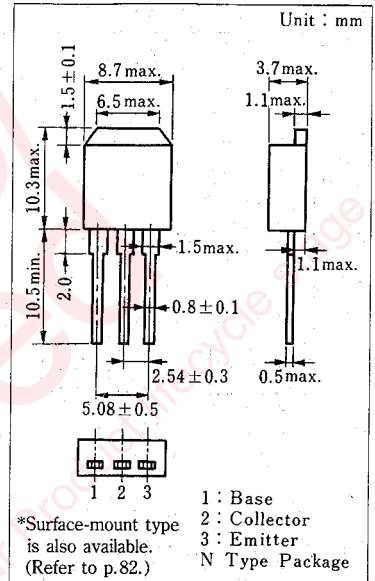
*1 h_{FE2} Classifications

Class	R	Q	P
h _{FE2}	1000 ~ 2500	2000 ~ 5000	4000 ~ 10000

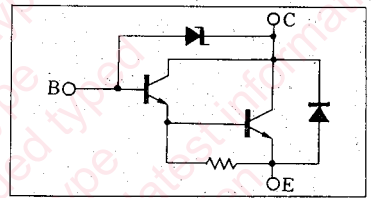
*2 E_{s/b} Test method

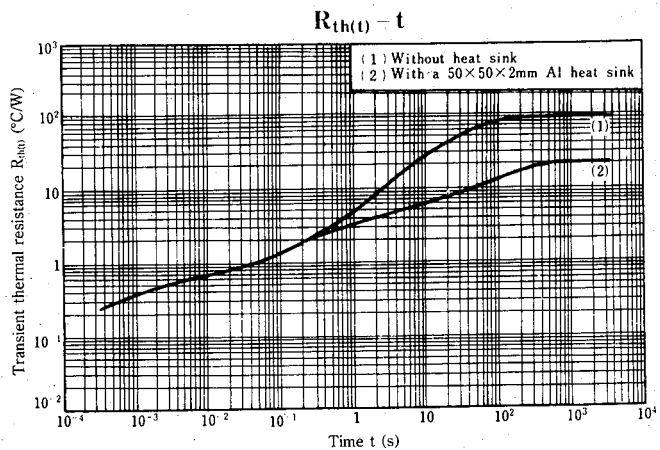
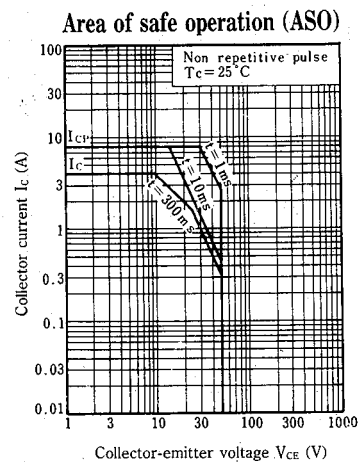
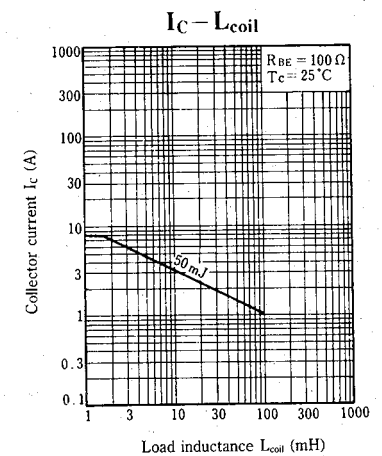
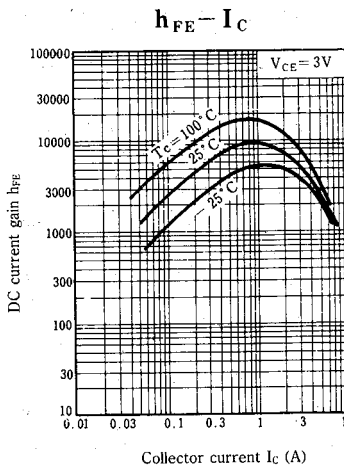
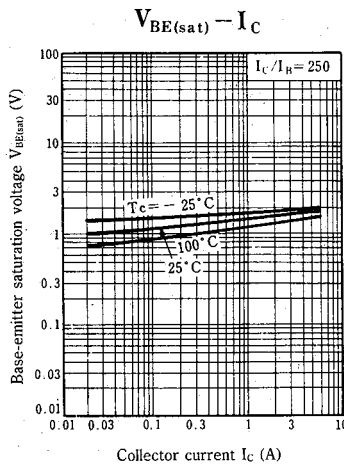
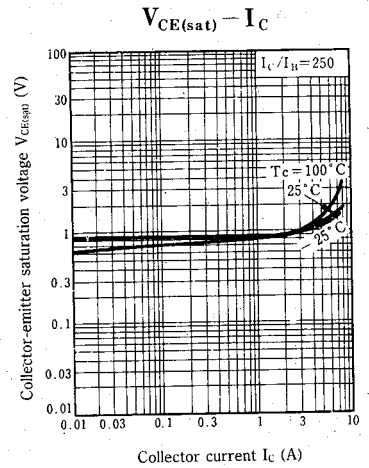
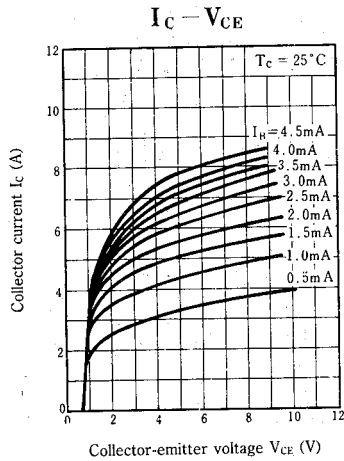
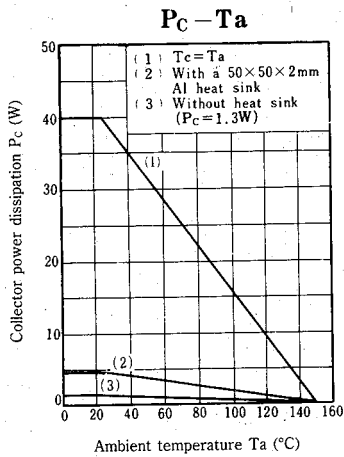


■ Package Dimensions



■ Inner Circuit





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