

# 2SD1611

## Silicon NPN triple diffusion planar type darlington

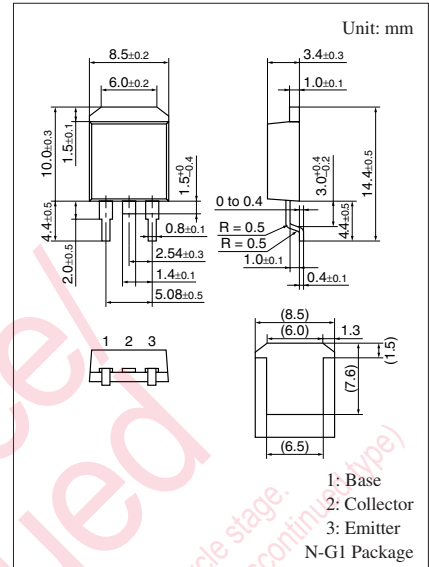
For power amplification

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- High collector-base voltage (Emitter open)  $V_{CBO}$
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

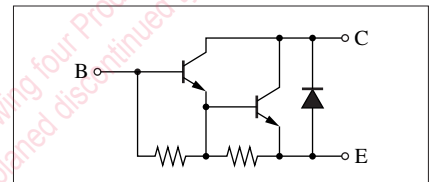
### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	500	V
Collector-emitter voltage (Base open)	$V_{CEO}$	400	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	6	A
Peak collector current	$I_{CP}$	10	A
Collector power dissipation	$P_C$	40	W
	$T_a = 25^\circ\text{C}$	1.3	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Note) Self-supported type package is also prepared.

### Internal Connection

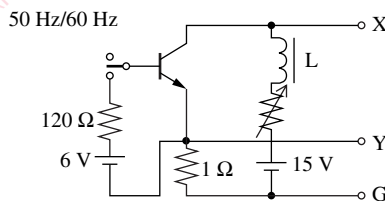


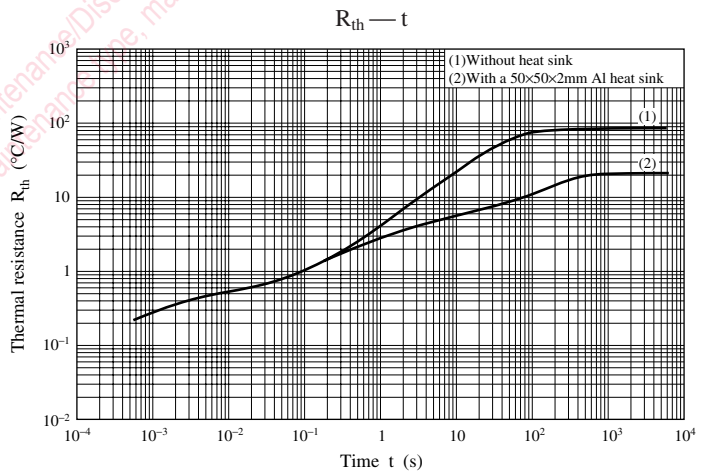
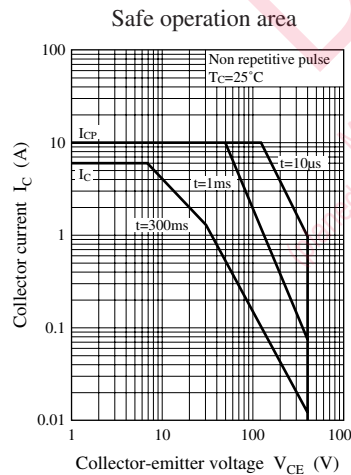
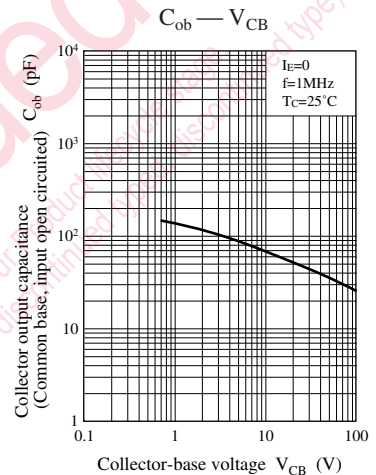
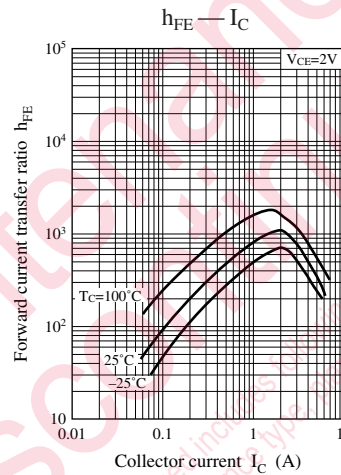
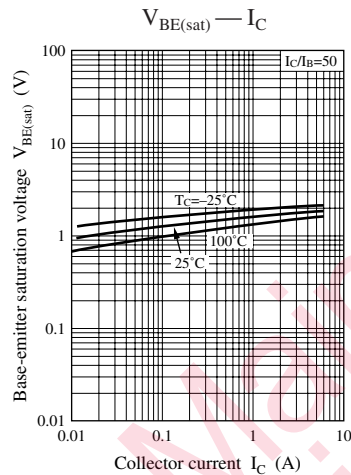
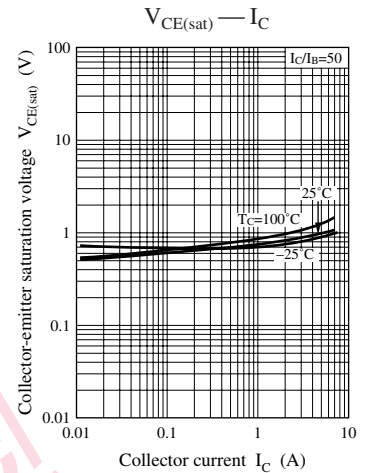
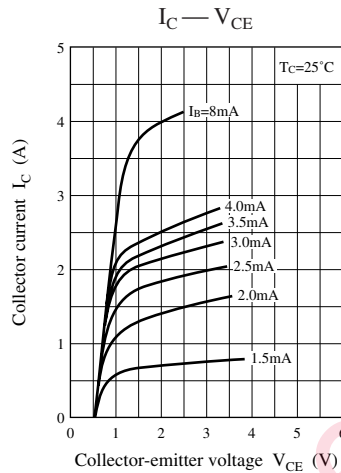
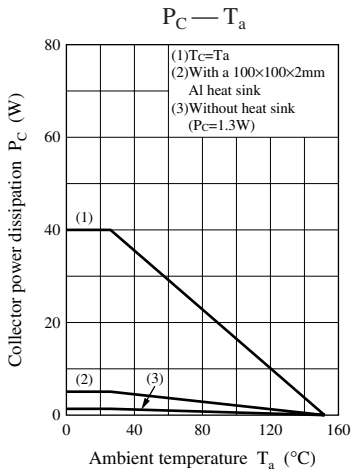
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 0.1 \text{ A}, I_C = 0$	5			V
Collector-emitter sustaining voltage *	$V_{CEO(SUS)}$	$I_C = 2 \text{ A}, L = 10 \text{ mH}$	400			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 350 \text{ V}, I_E = 0$			100	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 2 \text{ V}, I_C = 2 \text{ A}$	500			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3 \text{ A}, I_B = 0.06 \text{ A}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 3 \text{ A}, I_B = 0.06 \text{ A}$			2.5	V
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_C = 1 \text{ A}, f = 1 \text{ MHz}$		15		MHz

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*:  $V_{CEO(SUS)}$  Test circuit





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