



# SANYO Semiconductors

## DATA SHEET

# VEC2102

 — PNP Epitaxial Planar Silicon Transistor  

## DC / DC Converter Applications

### Applications

- Relay drivers, lamp drivers, motor drivers, flash.

### Features

- Composite type with 2 PNP transistors contained in a single package, facilitating high-density mounting.
- The VEC2102 consists of two chips which are equivalent to the CPH3109 encapsulated in a package.
- Ultrasmall package permitting applied sets to be small and slim (mounting height : 0.75mm).

### Specifications

**Absolute Maximum Ratings** at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		-30	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-30	V
Emitter-to-Collector Voltage	V <sub>ECO</sub>		-6.5	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current (Pulse)	I <sub>CP</sub>		-5	A
Base Current	I <sub>B</sub>		-600	mA
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	1.1	W
Total Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.3	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Marking : AC

Continued on next page.

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**SANYO Semiconductor Co., Ltd.**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

# VEC2102

## Electrical Characteristics at Ta=25°C

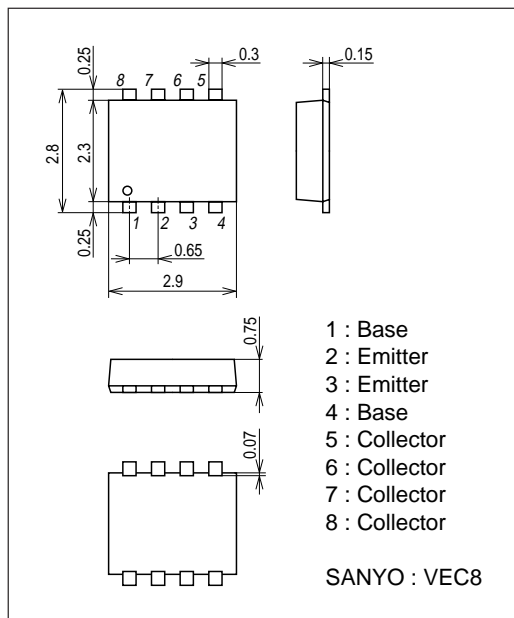
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =-30V, I <sub>E</sub> =0A			-0.1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-500mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA		380		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz		25		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =-1.5A, I <sub>B</sub> =-30mA		-160	-235	mV
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =-1.5A, I <sub>B</sub> =-75mA		-110	-160	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-1.5A, I <sub>B</sub> =-30mA		-0.83	-1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0A	-30			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, R <sub>BE</sub> =∞	-30			V
Emitter-to-Collector Breakdown Voltage	V <sub>(BR)ECO</sub>	I <sub>C</sub> =-10μA, R <sub>CB</sub> =∞	-6.5			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0A	-5			V
Turn-ON Time	t <sub>on</sub>	See specified Test Circuit.		50		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		270		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		25		ns

Note : The specifications shown above are for each individual transistor.

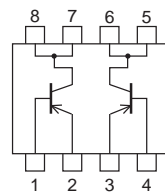
## Package Dimensions

unit : mm (typ)

7012-007



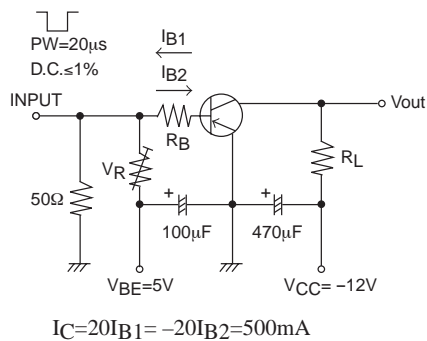
## Electrical Connection



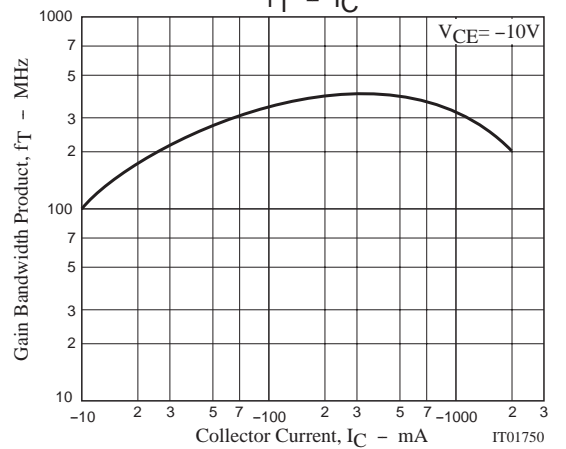
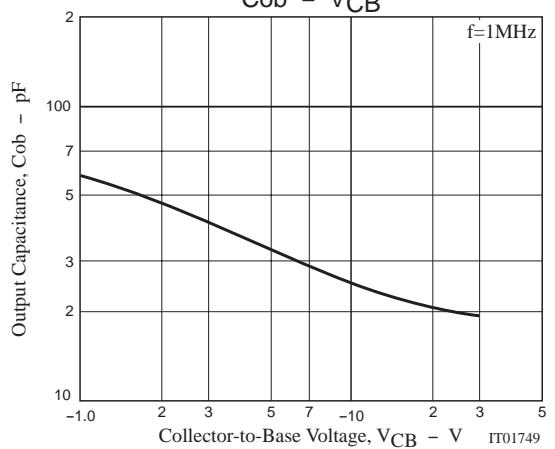
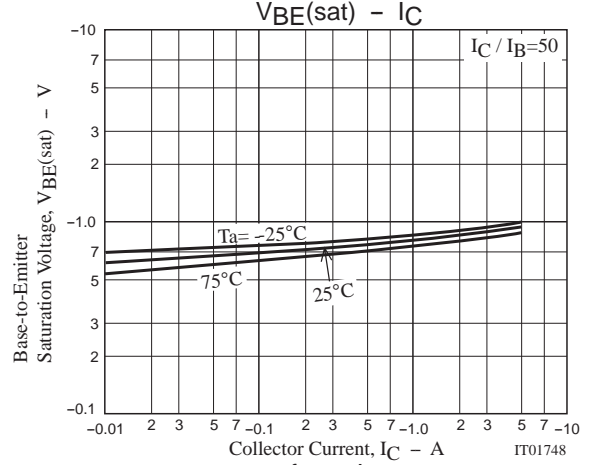
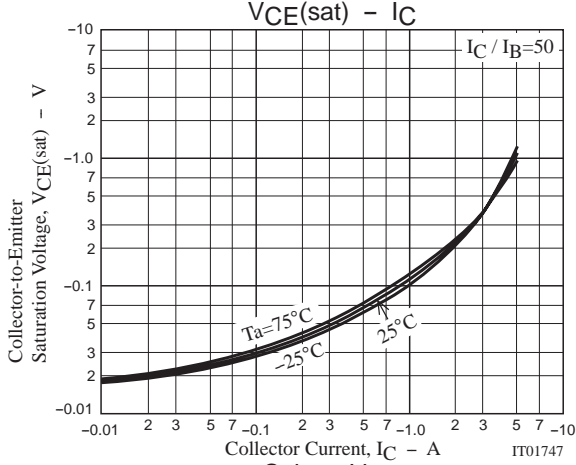
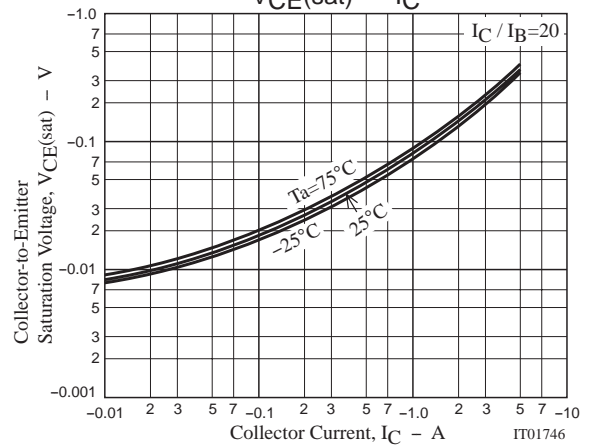
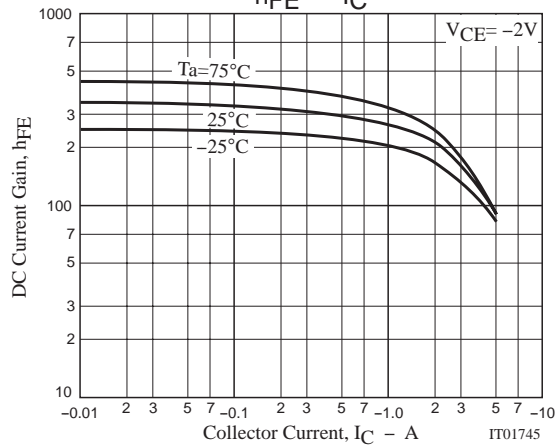
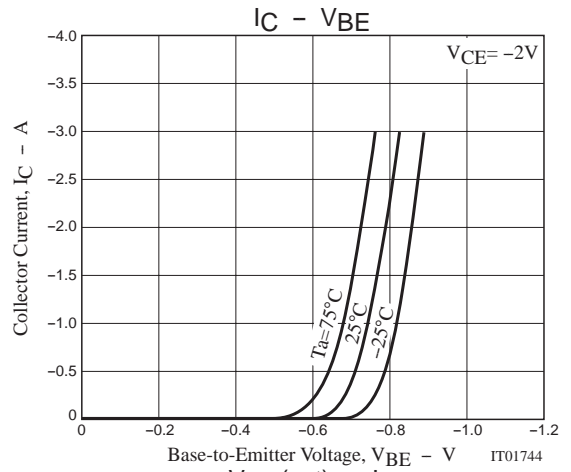
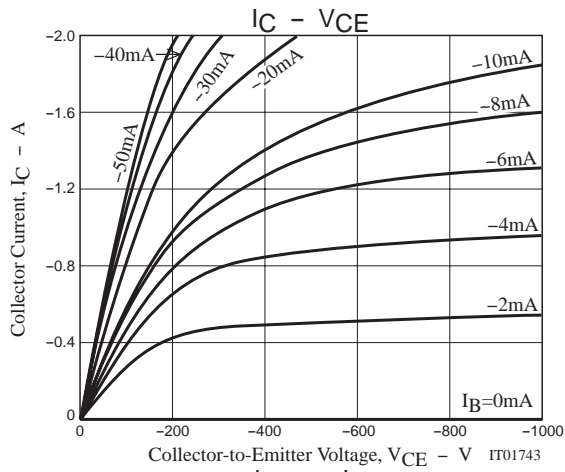
- 1 : Base
- 2 : Emitter
- 3 : Emitter
- 4 : Base
- 5 : Collector
- 6 : Collector
- 7 : Collector
- 8 : Collector

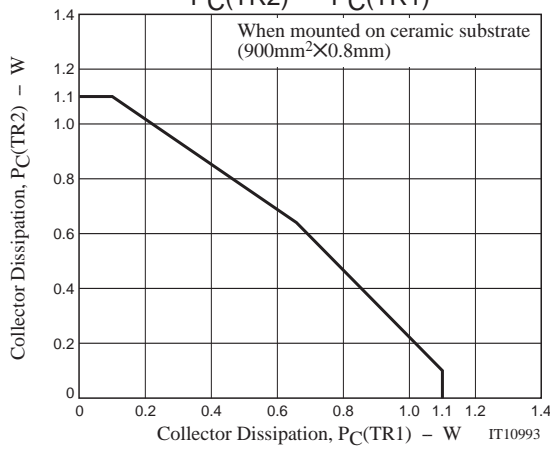
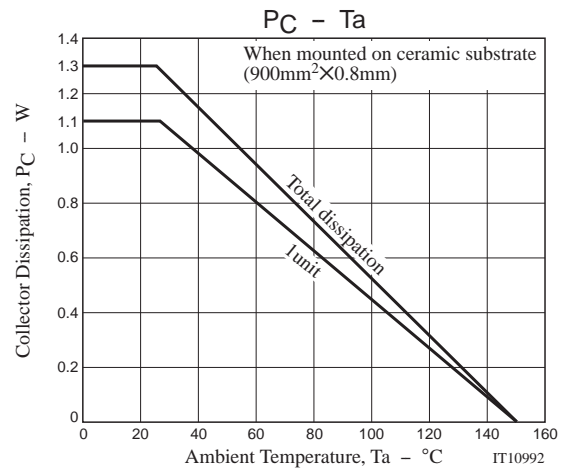
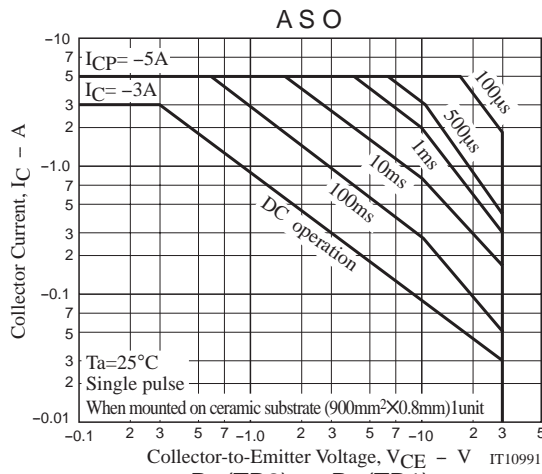
Top view

## Switching Time Test Circuit



# VEC2102





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