

# SANYO Semiconductors DATA SHEET

## TIG064E8 — N-Channel IGBT Light-Controlling Flash Applications

#### **Features**

- · Low-saturation voltage.
- Low voltage drive (2.5V).
- · Enhansment type.
- · Built-in Gate-to-Emitter protection diode.
- · Mounting Height 0.9mm, Mounting Area 8.12mm<sup>2</sup>.
- · dv / dt guarantee\*.
- · Halogen free compliance.

## **Specifications**

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage	VCES		400	V
Gate-to-Emitter Voltage (DC)	VGES		±4	V
Gate-to-Emitter Voltage (Pulse)	VGES	PW≤1ms	±5	V
Collector Current (Pulse)	ICP	V <sub>GE</sub> =2.5V, C <sub>M</sub> =100μF	150	Α
Maximum Collector-to-Emitter dv / dt	dV <sub>CE</sub> / dt	V <sub>CE</sub> ≤320V, starting Tch=25°C	400	V/μs
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-40 to +150	°C

Marking : ZD

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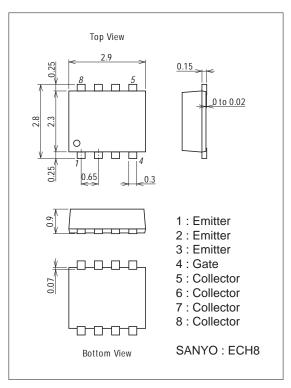
<sup>\*:</sup> Concerning dv / dt (slope of Collector Voltage at the time of Turn-OFF), dv / dt > 400V / \mu s will be 100% screen-detected in the circuit shown as Fig. 1.

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offit
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=2mA, VGE=0V	400			V
Collector-to-Emitter Cutoff Current	ICES	V <sub>CE</sub> =320V, V <sub>GE</sub> =0V			10	μΑ
Gate-to-Emitter Leakage Current	IGES	V <sub>GE</sub> =±4V, V <sub>CE</sub> =0V			±10	μΑ
Gate-to-Emitter Threshold Voltage	V <sub>GE</sub> (off)	V <sub>CE</sub> =10V, I <sub>C</sub> =1mA	0.4		0.9	V
Collector-to-Emitter Saturation Voltage	VCE(sat)	I <sub>C</sub> =100A, V <sub>GE</sub> =2.5V		4.2	7	V
Input Capacitance	Cies	V <sub>CE</sub> =10V, f=1MHz		3100		pF
Output Capacitance	Coes	V <sub>CE</sub> =10V, f=1MHz		30		pF
Reverse Transfer Capacitance	Cres	V <sub>CE</sub> =10V, f=1MHz		23		pF

## **Package Dimensions**

unit : mm (typ) 7011A-004



### **Electrical Connection**

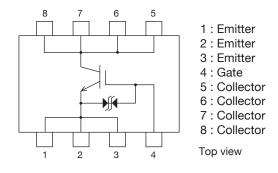
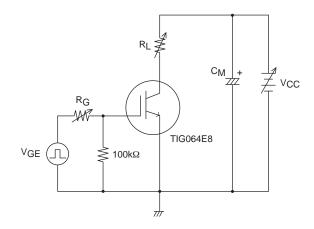
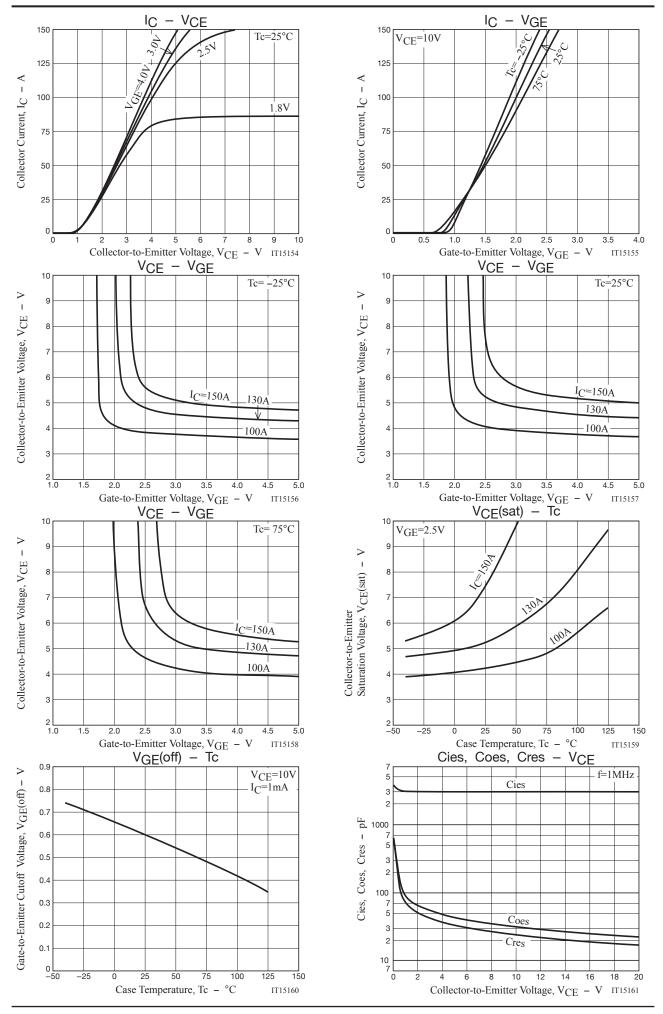
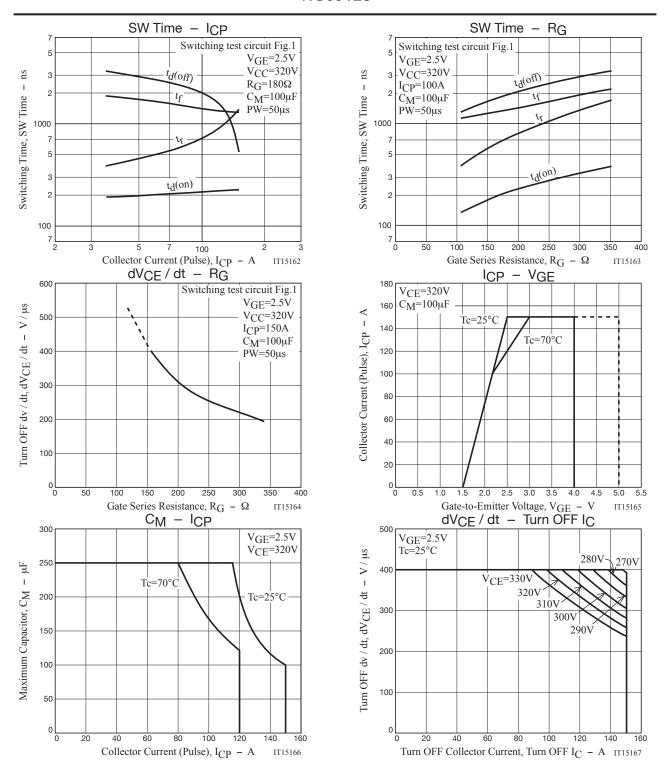


Fig.1 Large Current R Load Switching Circuit



Note1. Gate Series Resistance  $R_G \ge 160\Omega$  is recommended for protection purpose at the time of turn OFF. However, if  $dv / dt \le 400V / \mu s$  is satisfied at customer's actual set evaluation,  $R_G < 160\Omega$  can also be used. Note2. The collector voltage gradient dv / dt must be smaller than  $400V / \mu s$  to protect the device when it is turned off.





Note: TIG064E8 has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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