



SANYO Semiconductors

DATA SHEET

TIG064E8 — N-Channel IGBT

Light-Controlling Flash Applications

Features

- Low-saturation voltage.
- Low voltage drive (2.5V).
- Enhancement type.
- Built-in Gate-to-Emitter protection diode.
- Mounting Height 0.9mm, Mounting Area 8.12mm².
- dv/dt guarantee*.
- Halogen free compliance.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage	V_{CES}		400	V
Gate-to-Emitter Voltage (DC)	V_{GES}		± 4	V
Gate-to-Emitter Voltage (Pulse)	V_{GES}	$PW \leq 1\text{ms}$	± 5	V
Collector Current (Pulse)	I_{CP}	$V_{GE}=2.5\text{V}$, $C_M=100\mu\text{F}$	150	A
Maximum Collector-to-Emitter dv/dt	dV_{CE}/dt	$V_{CE} \leq 320\text{V}$, starting $T_{ch}=25^\circ\text{C}$	400	$\text{V}/\mu\text{s}$
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Marking : ZD

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

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TIG064E8

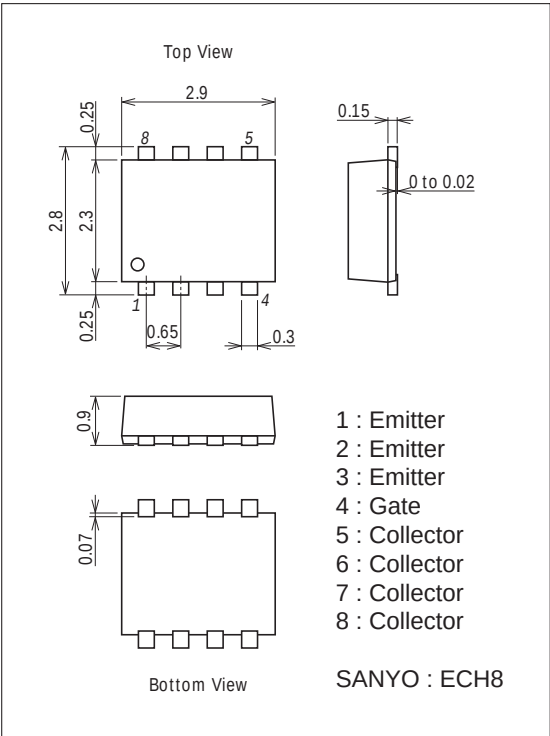
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=2mA, V_{GE}=0V$	400			V
Collector-to-Emitter Cutoff Current	I_{CES}	$V_{CE}=320V, V_{GE}=0V$			10	μA
Gate-to-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 4V, V_{CE}=0V$			± 10	μA
Gate-to-Emitter Threshold Voltage	$V_{GE(off)}$	$V_{CE}=10V, I_C=1mA$	0.4		0.9	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100A, V_{GE}=2.5V$		4.2	7	V
Input Capacitance	C_{ies}	$V_{CE}=10V, f=1MHz$		3100		pF
Output Capacitance	C_{oes}	$V_{CE}=10V, f=1MHz$		30		pF
Reverse Transfer Capacitance	C_{res}	$V_{CE}=10V, f=1MHz$		23		pF

Package Dimensions

unit : mm (typ)

7011A-004



Electrical Connection

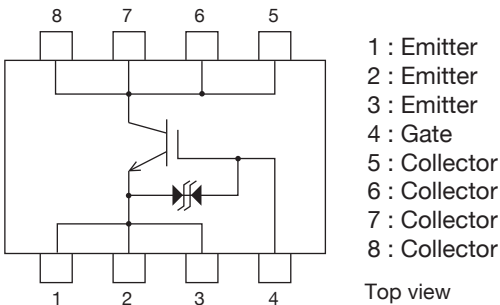
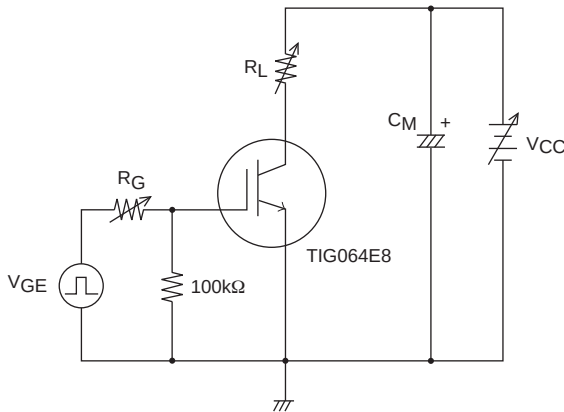
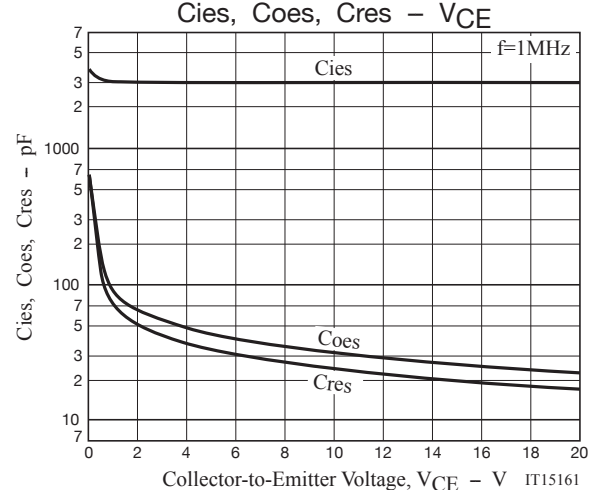
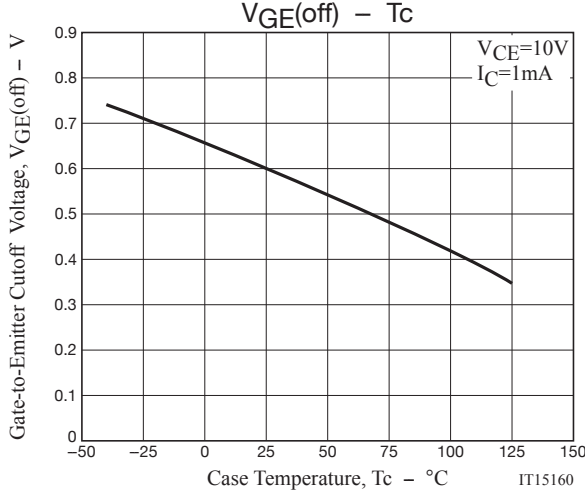
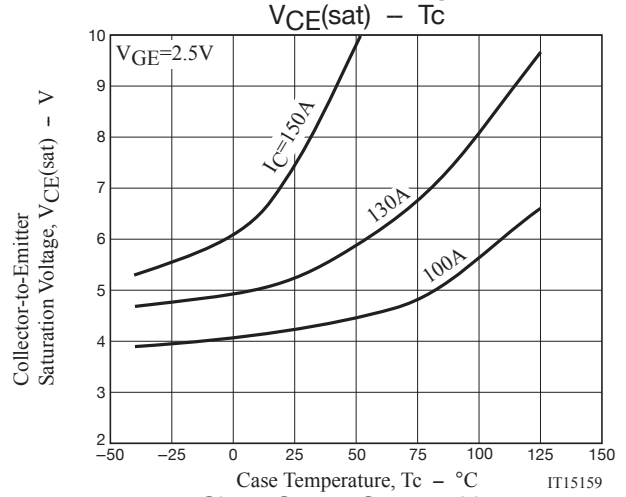
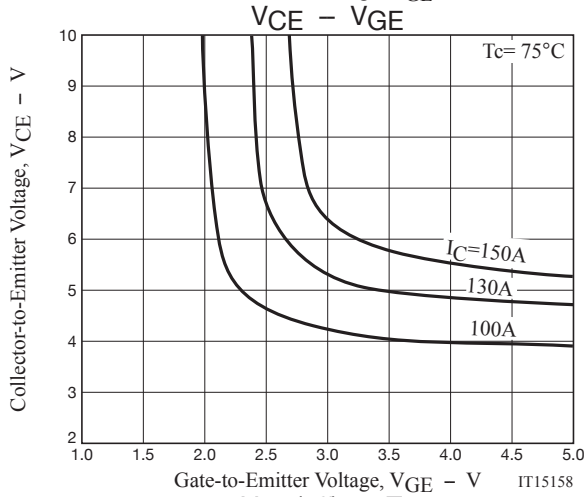
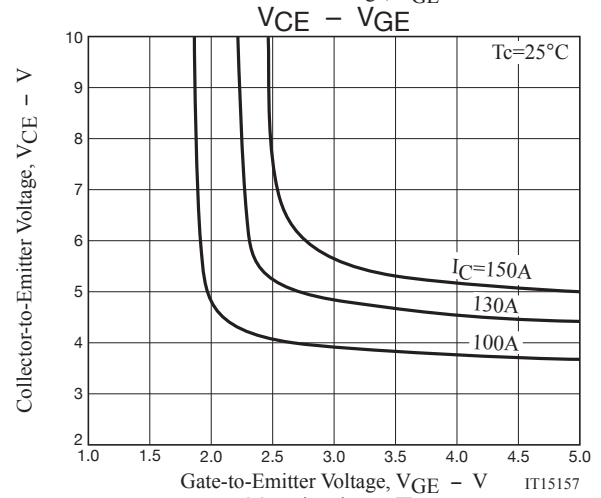
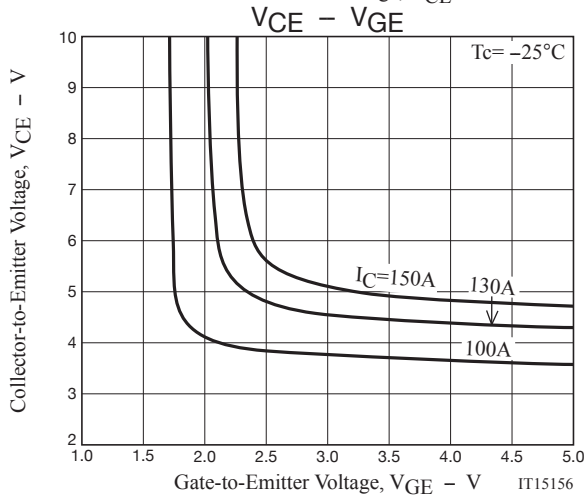
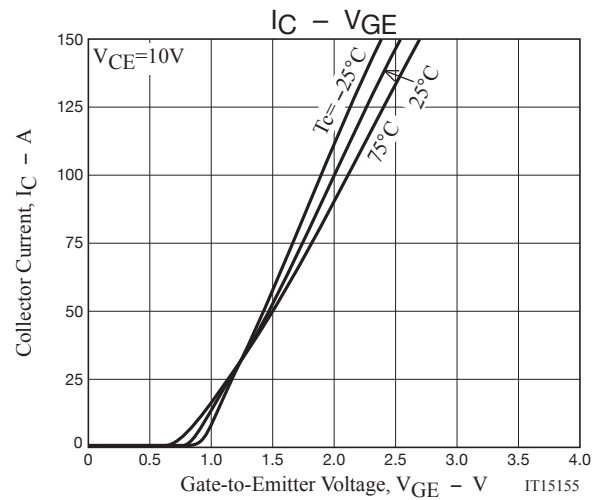
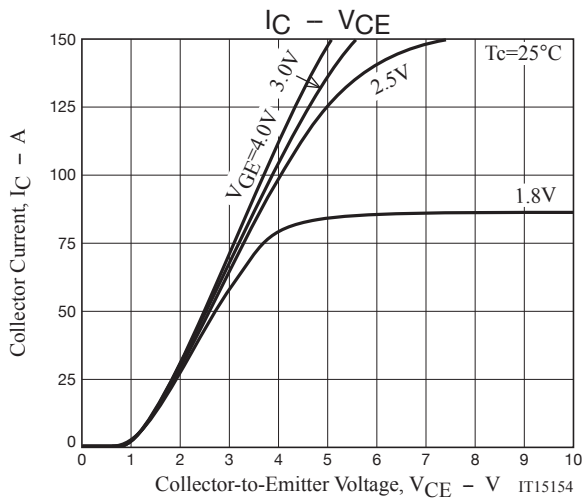


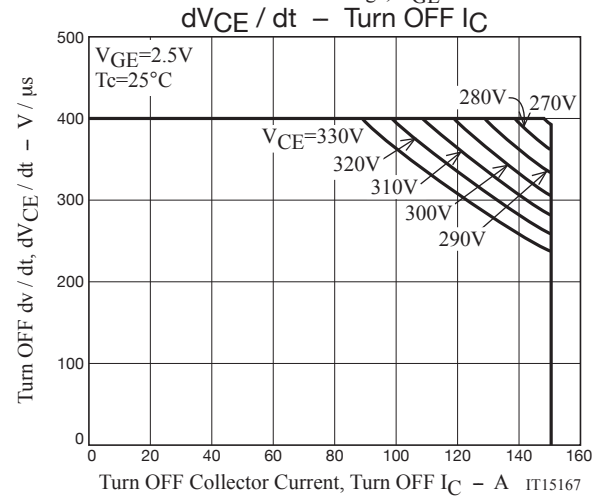
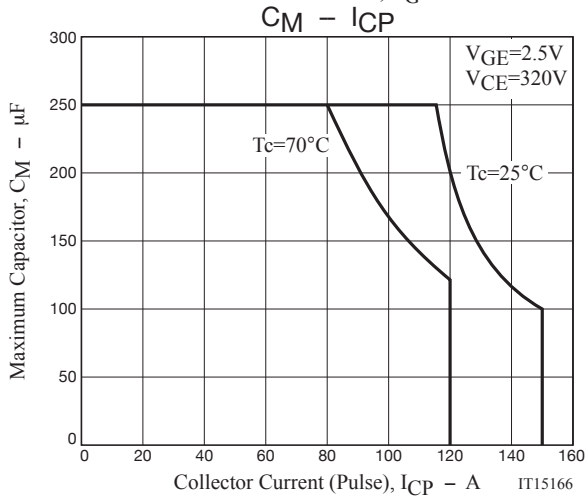
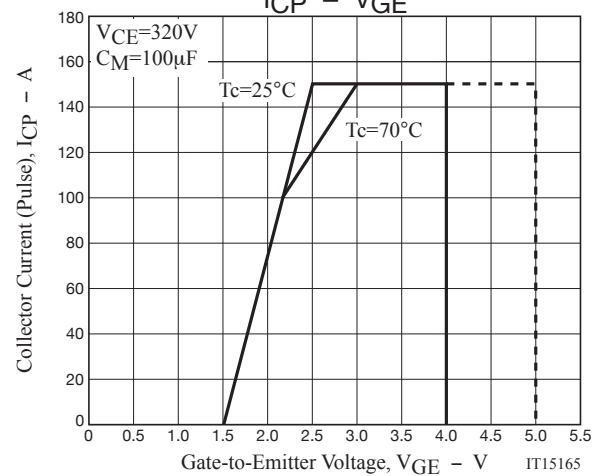
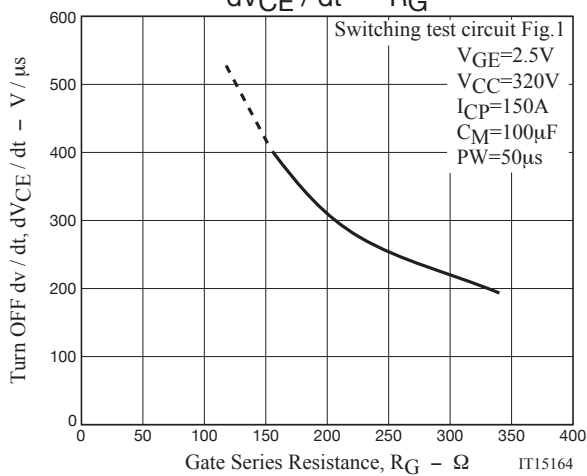
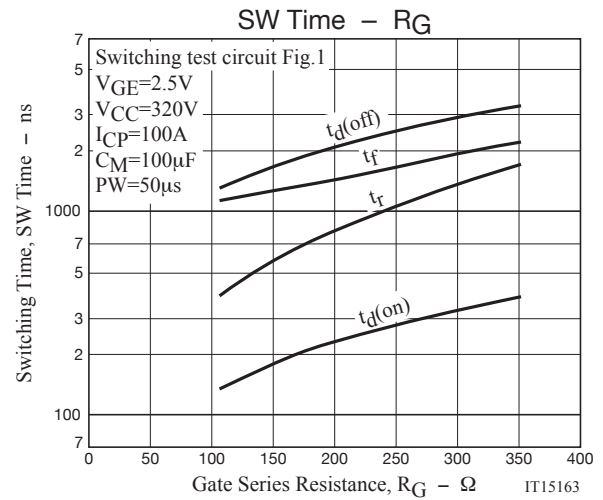
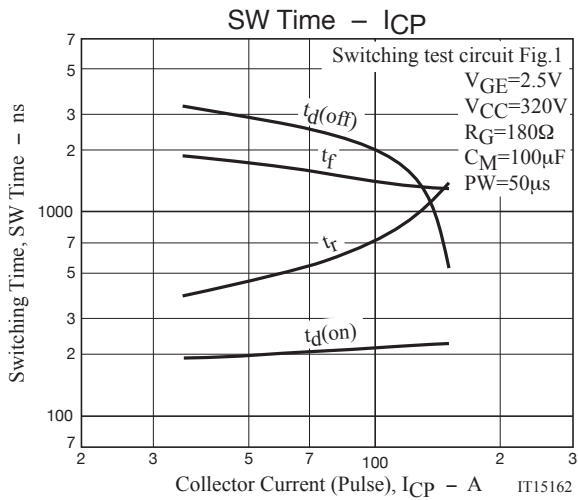
Fig.1 Large Current R Load Switching Circuit



Note1. Gate Series Resistance $R_G \geq 160\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv/dt \leq 400V/\mu s$ 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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