



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

TIG062E8 — N-Channel IGBT Light-Controlling Flash Applications

Features

- Low-saturation voltage.
- Low voltage drive (3V).
- 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}		± 6	V
Gate-to-Emitter Voltage (Pulse)	V_{GES}	$PW \leq 1\text{ms}$	± 8	V
Collector Current (Pulse)	I_{CP1}	$C_M=150\mu\text{F}, V_{GE}=3\text{V}$	100	A
	I_{CP2}	$C_M=100\mu\text{F}, V_{GE}=3.3\text{V}$	130	A
	I_{CP3}	$C_M=100\mu\text{F}, V_{GE}=4\text{V}$	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	V / μs
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Marking : ZC

* : 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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TIG062E8

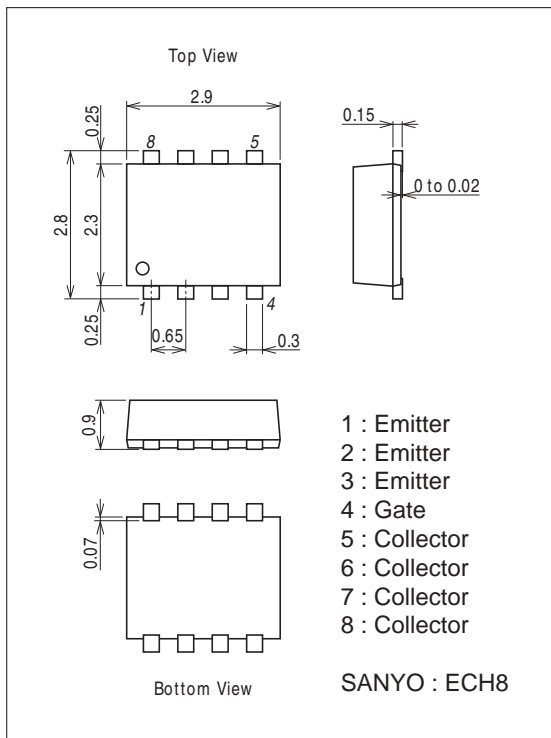
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=2mA, VGE=0V	400			V
Collector-to-Emitter Cutoff Current	ICES	VCE=320V, VGE=0V			10	μA
Gate-to-Emitter Leakage Current	IGES	VGE=±6V, VCE=0V			±10	μA
Gate-to-Emitter Threshold Voltage	VGE(off)	VCE=10V, IC=1mA	0.4		0.9	V
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=100A, VGE=3V		5	8	V
Input Capacitance	Cies	VCE=10V, f=1MHz		2400		pF
Output Capacitance	Coes	VCE=10V, f=1MHz		32		pF
Reverse Transfer Capacitance	Cres	VCE=10V, f=1MHz		24		pF

Package Dimensions

unit : mm (typ)

7011A-004



Electrical Connection

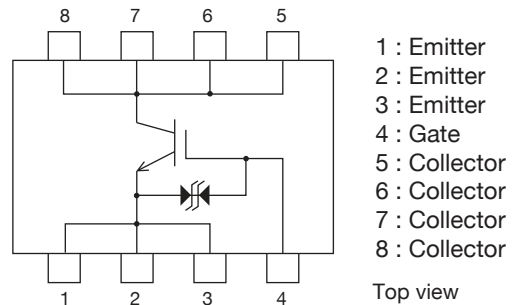
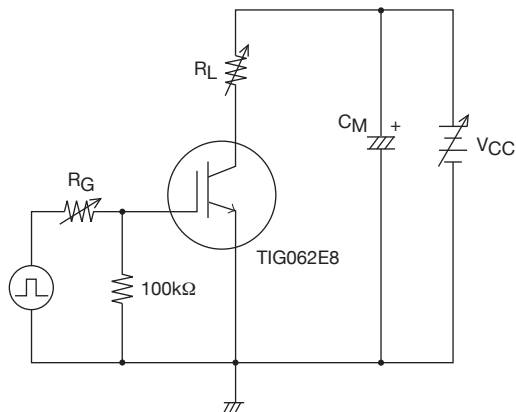
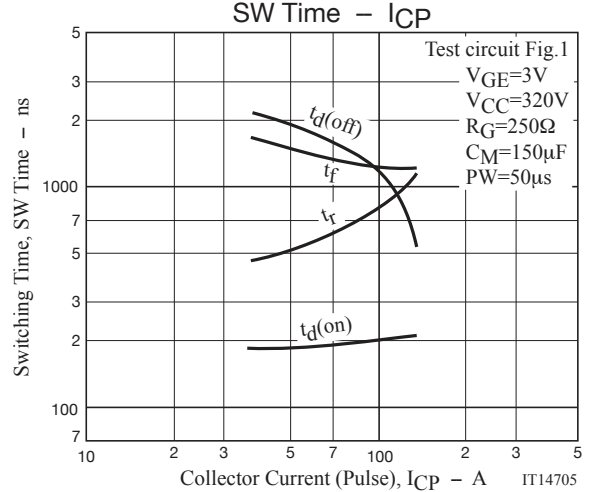
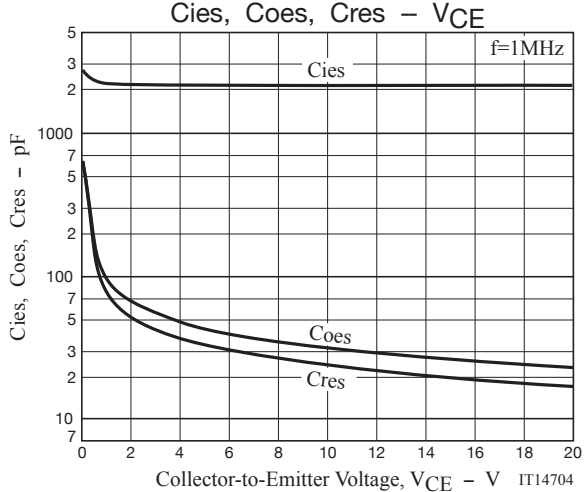
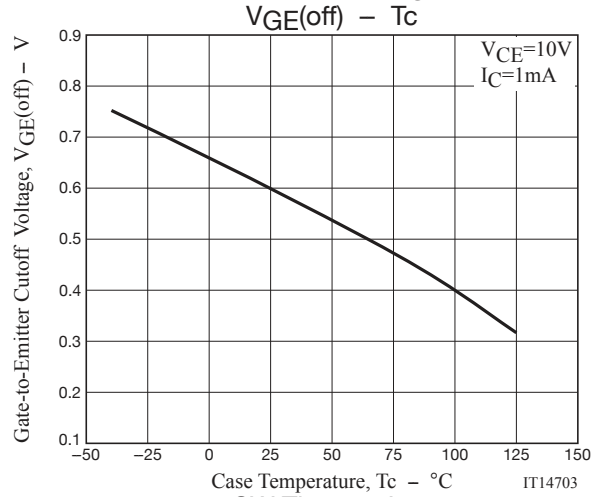
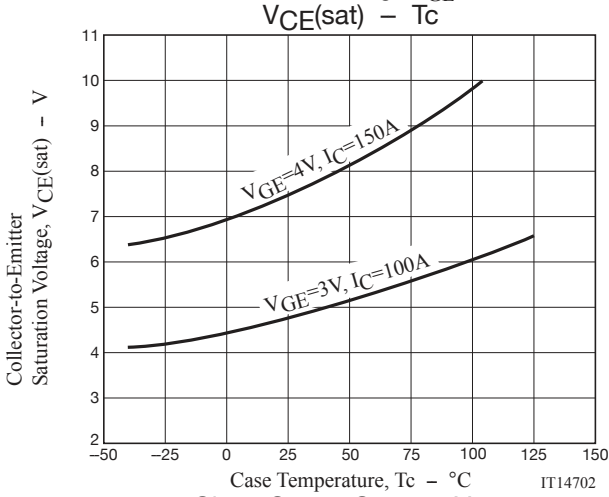
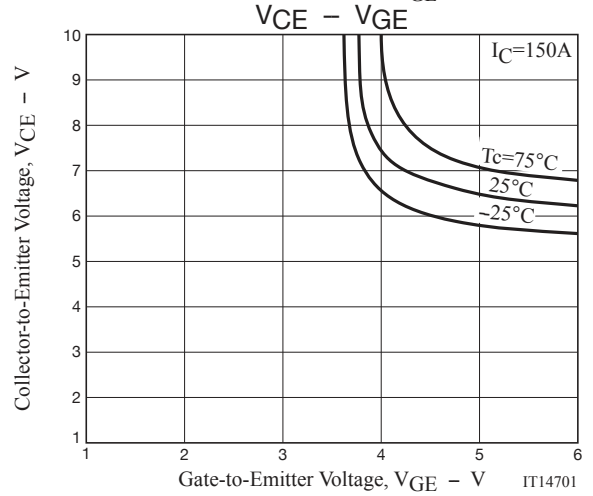
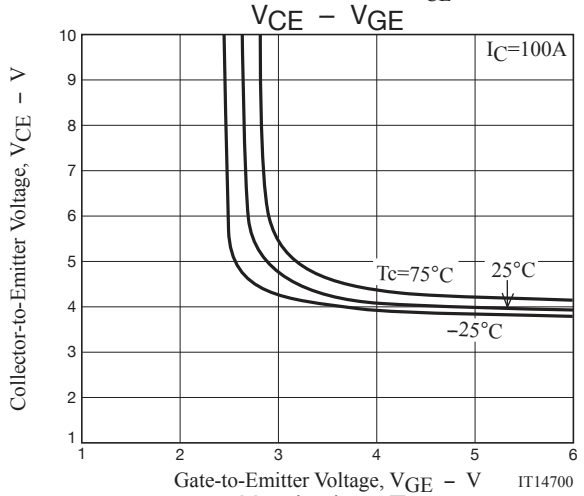
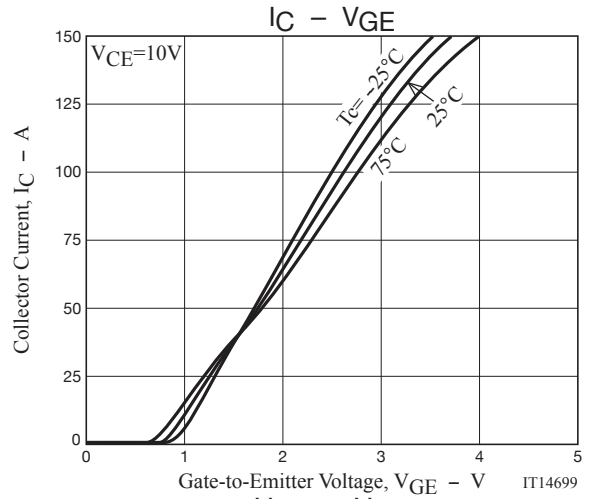
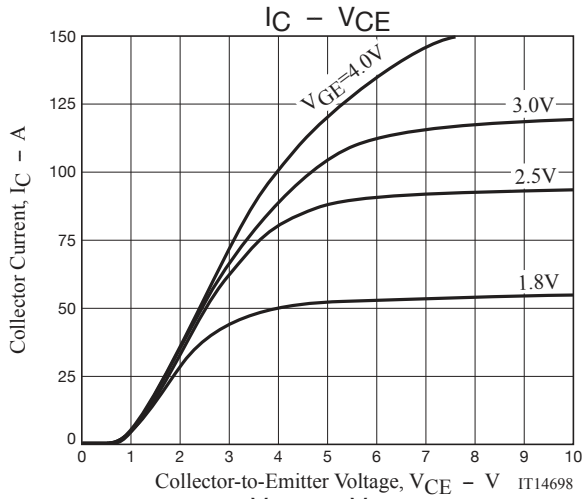


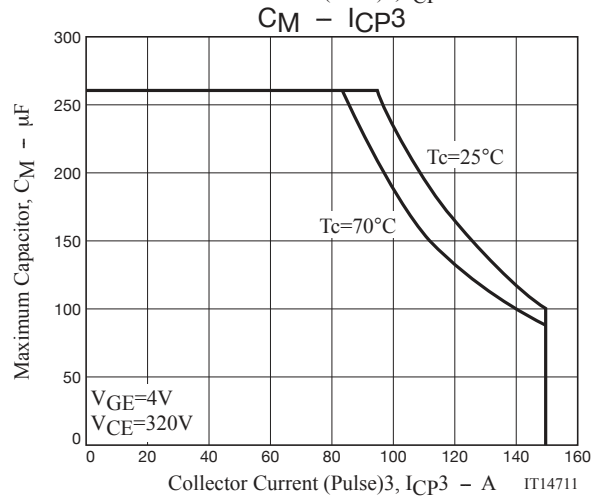
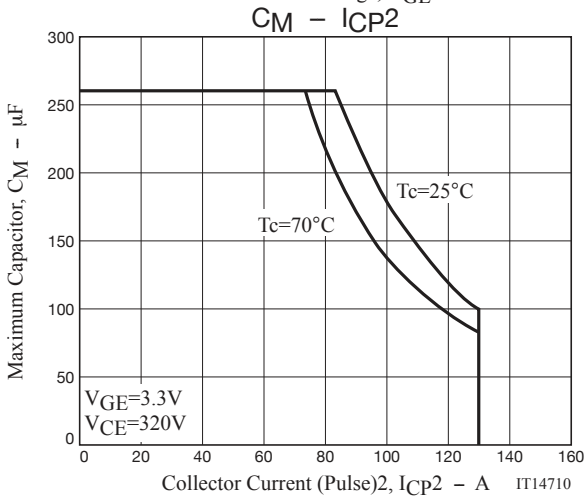
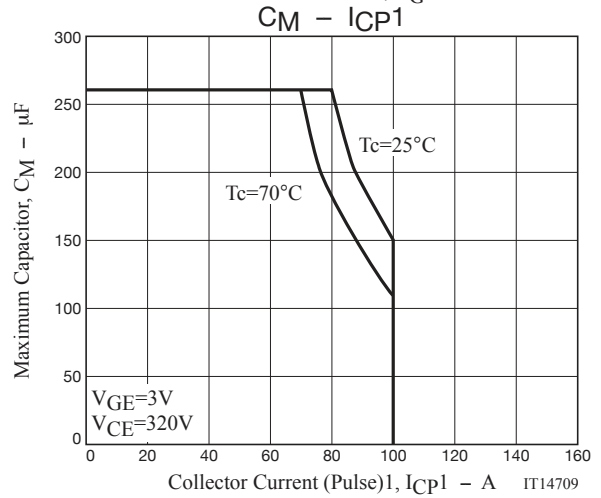
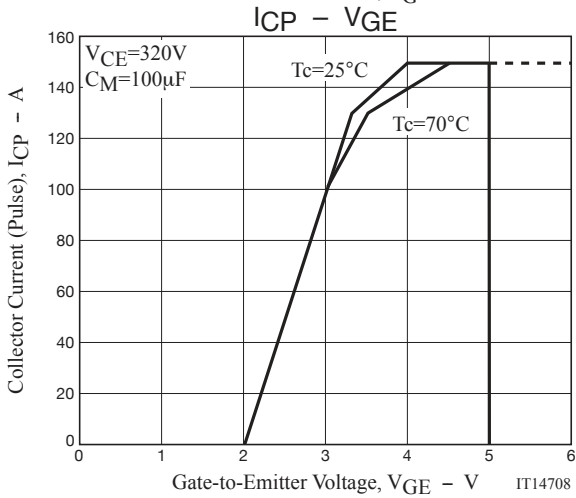
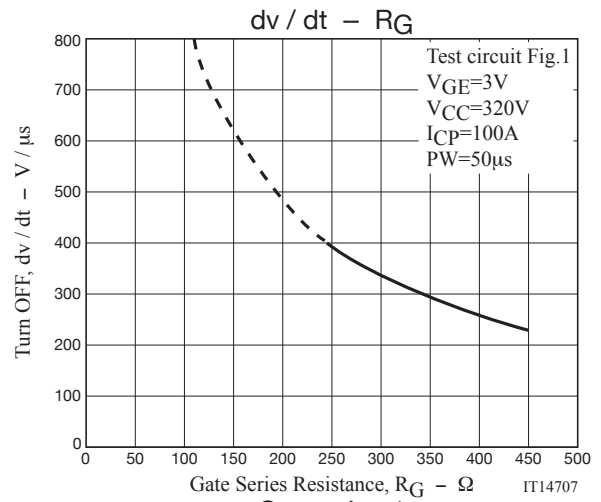
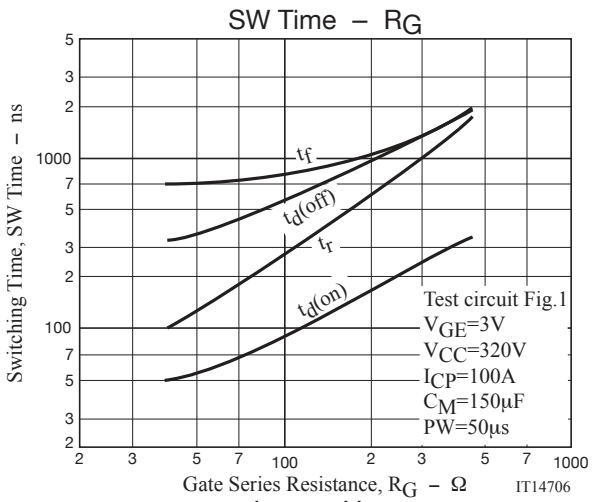
Fig.1 Large Current R Load Switching Circuit



Note1. Gate Series Resistance $R_G \geq 250\Omega$ 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, $R_G < 250\Omega$ 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 : TIG062E8 has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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