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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 Ta=25°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≤1ms | ±8 | V |
| Collector Current (Pulse) | I _{CP1} | C _M =150μF, V _{GE} =3V | 100 | A |
| | I _{CP2} | C _M =100μF, V _{GE} =3.3V | 130 | A |
| | I _{CP3} | C _M =100μF, V _{GE} =4V | 150 | A |
| Maximum Collector-to-Emitter dv / dt | dV _{CE} / dt | V _{CE} ≤320V, starting Tch=25°C | 400 | V / μs |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -40 to +150 | °C |

Marking : ZC

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

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TIG062E8

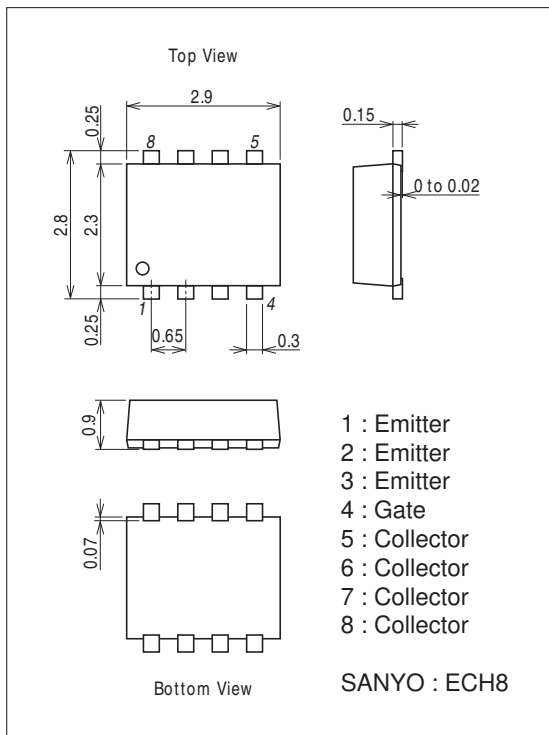
Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|----------------------------|---------|------|----------|---------|
| | | | min | typ | max | |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C=2mA, V_{GE}=0V$ | 400 | | | V |
| Collector-to-Emitter Cutoff Current | I_{CES} | $V_{CE}=320V, V_{GE}=0V$ | | | 10 | μA |
| Gate-to-Emitter Leakage Current | I_{GES} | $V_{GE}=\pm 6V, V_{CE}=0V$ | | | ± 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 | $V_{CE(sat)}$ | $I_C=100A, V_{GE}=3V$ | | 5 | 8 | V |
| Input Capacitance | C_{ies} | $V_{CE}=10V, f=1MHz$ | | 2400 | | pF |
| Output Capacitance | C_{oes} | $V_{CE}=10V, f=1MHz$ | | 32 | | pF |
| Reverse Transfer Capacitance | C_{res} | $V_{CE}=10V, f=1MHz$ | | 24 | | pF |

Package Dimensions

unit : mm (typ)

7011A-004



Electrical Connection

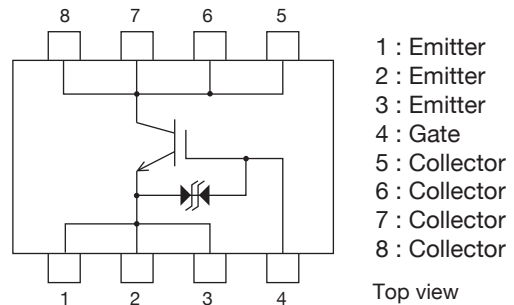
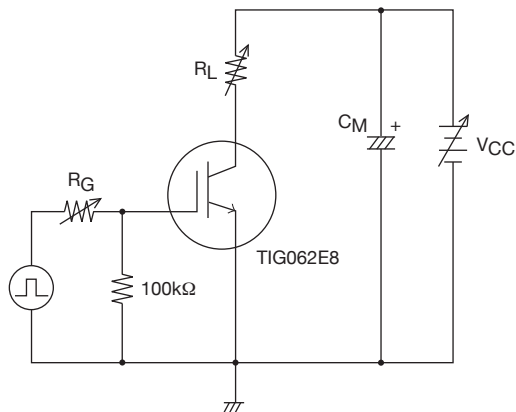
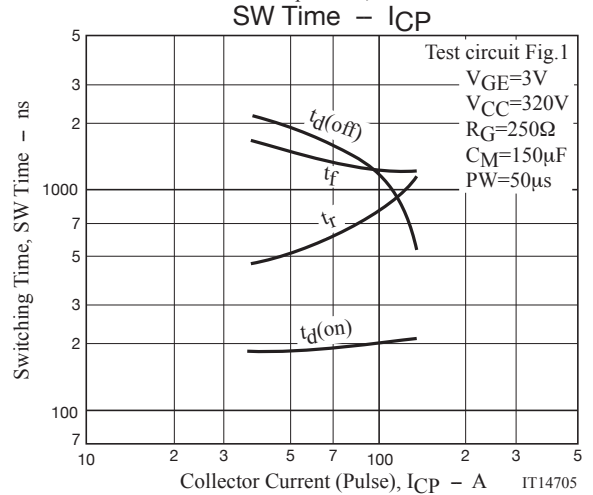
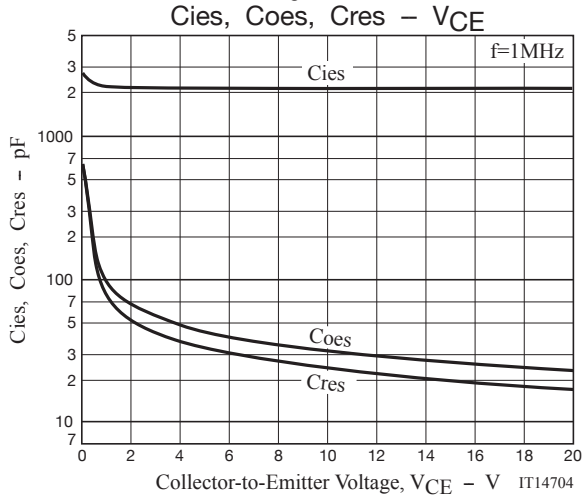
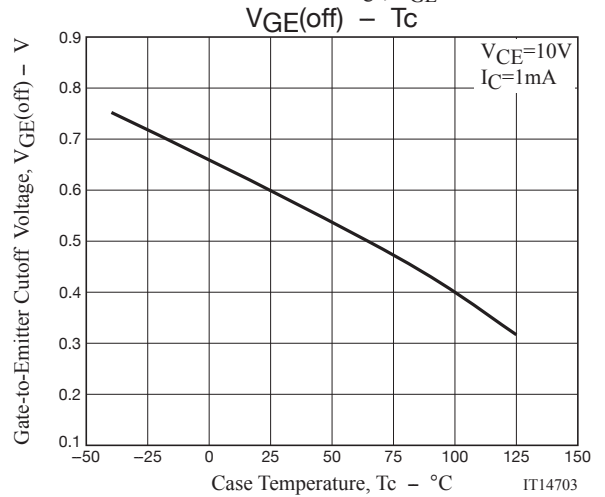
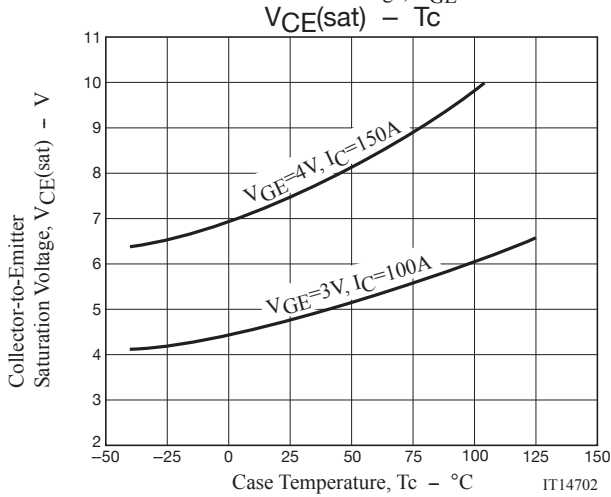
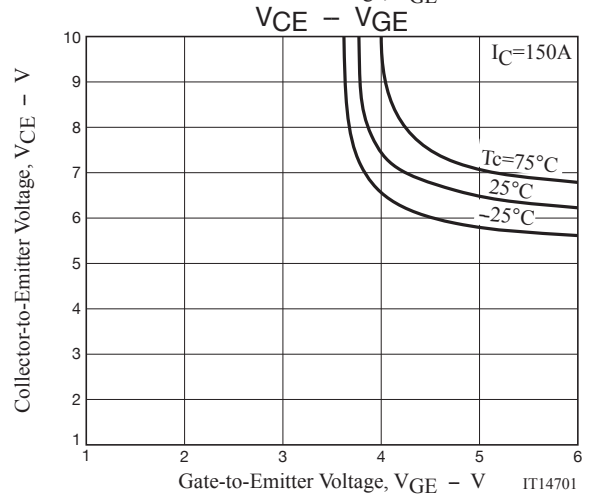
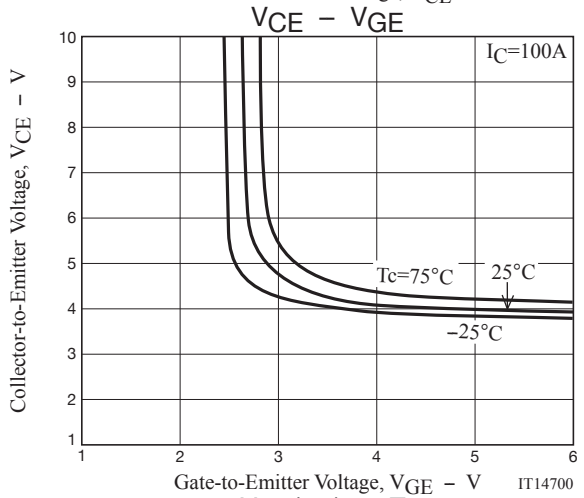
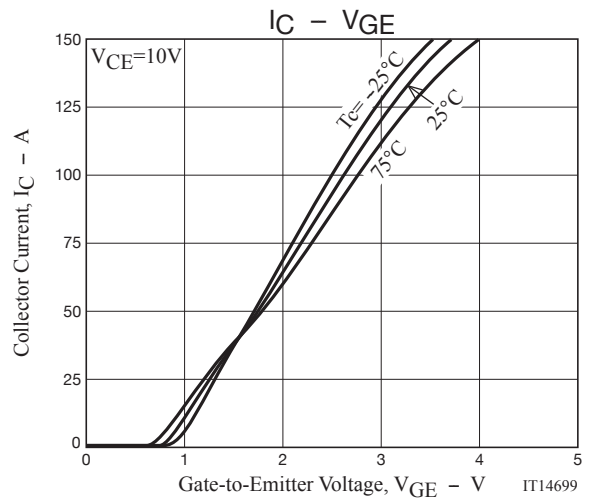
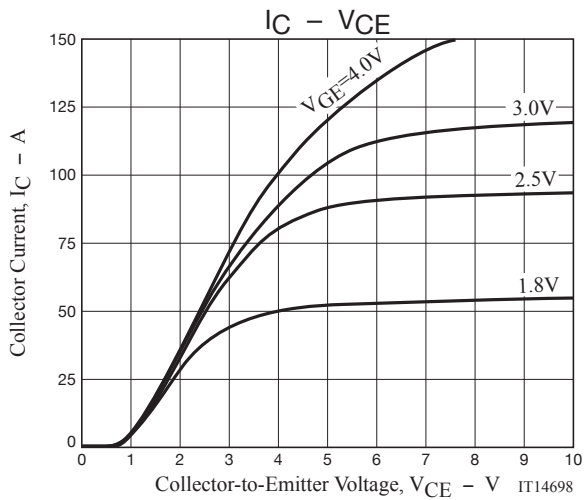


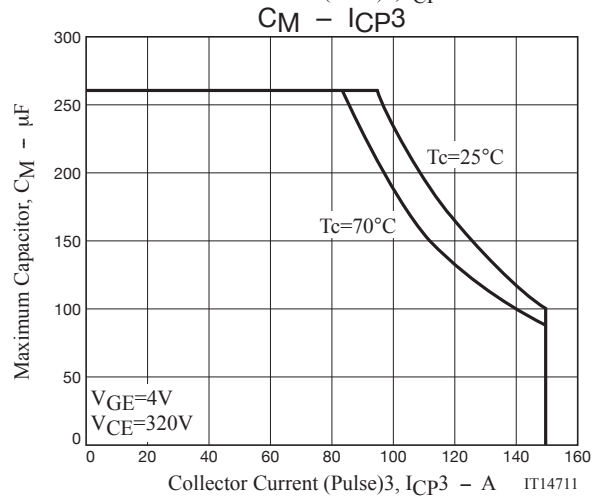
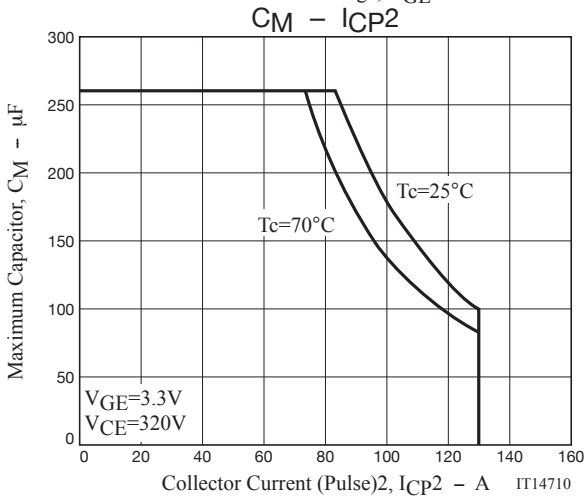
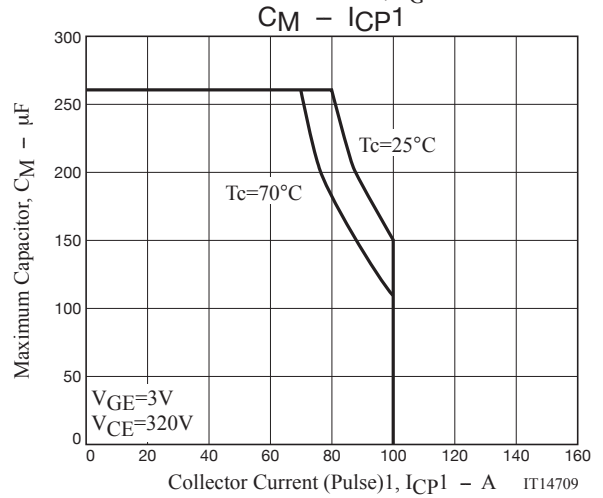
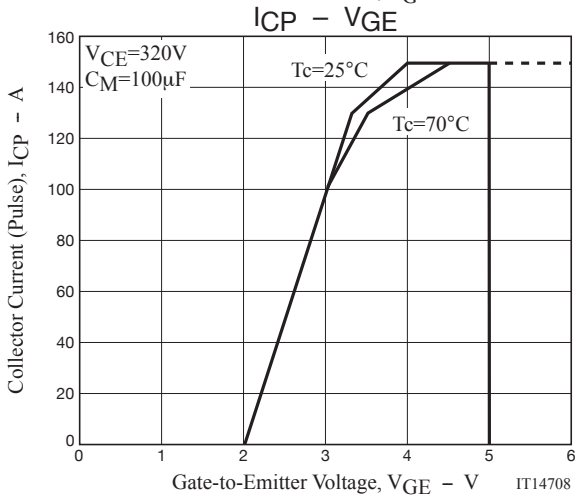
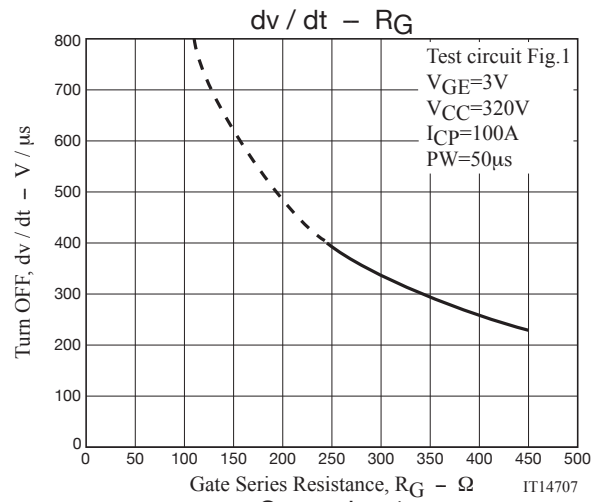
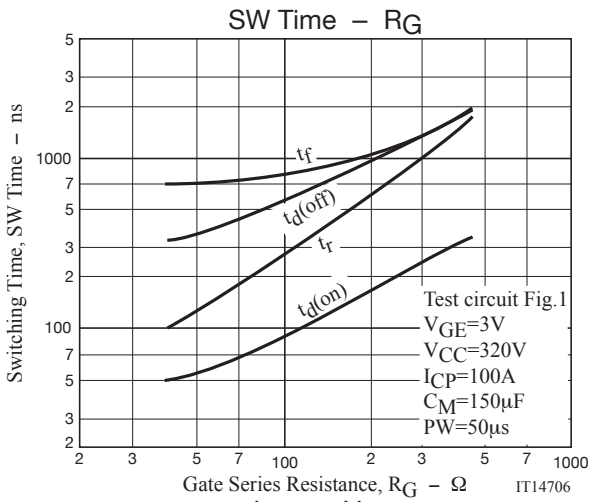
Fig.1 Large Current R Load Switching Circuit



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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