

SANYO Semiconductors DATA SHEET

An ON Semiconductor Company

TIG065E8 — N-Channel IGBT Light-Controlling Flash Applications

Features

- · Low-saturation voltage
- · Enhansment type
- · Mounting Height 0.9mm, Mounting Area 8.12mm²
- · Halogen free compliance

- · Low voltage drive (2.5V)
- · Built-in Gate-to-Emitter protection diode
- dv / dt guarantee*

Specifications

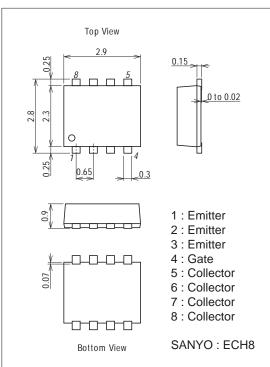
Absolute Maximum Ratings at Ta=25°C

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 _{GE} =2.5V, C _M =100μF	150	Α
Maximum Collector-to-Emitter dv / dt	dv / dt	V _{CE} ≤320V, starting Tch=25°C	400	V/μs
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-40 to +150	°C

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

Package Dimensions

unit : mm (typ) 7011A-004



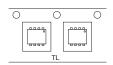
Product & Package Information

• Package : ECH8

• JEITA, JEDEC :-

• Minimum Packing Quantity : 3000 pcs./reel

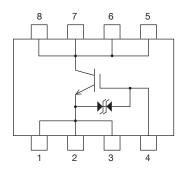
Packing Type: TL



Marking



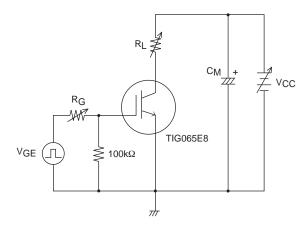
Electrical Connection



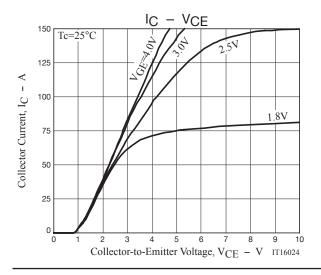
Electrical Characteristics at Ta=25°C

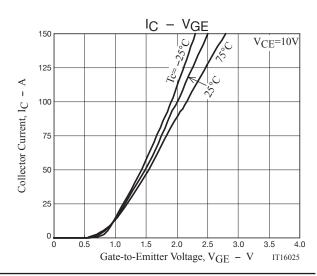
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=2mA, VGE=0V	400			V
Collector-to-Emitter Cutoff Current	ICES	V _{CE} =320V, V _{GE} =0V			10	μΑ
Gate-to-Emitter Leakage Current	IGES	V _{GE} =±4V, V _{CE} =0V			±10	μΑ
Gate-to-Emitter Threshold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

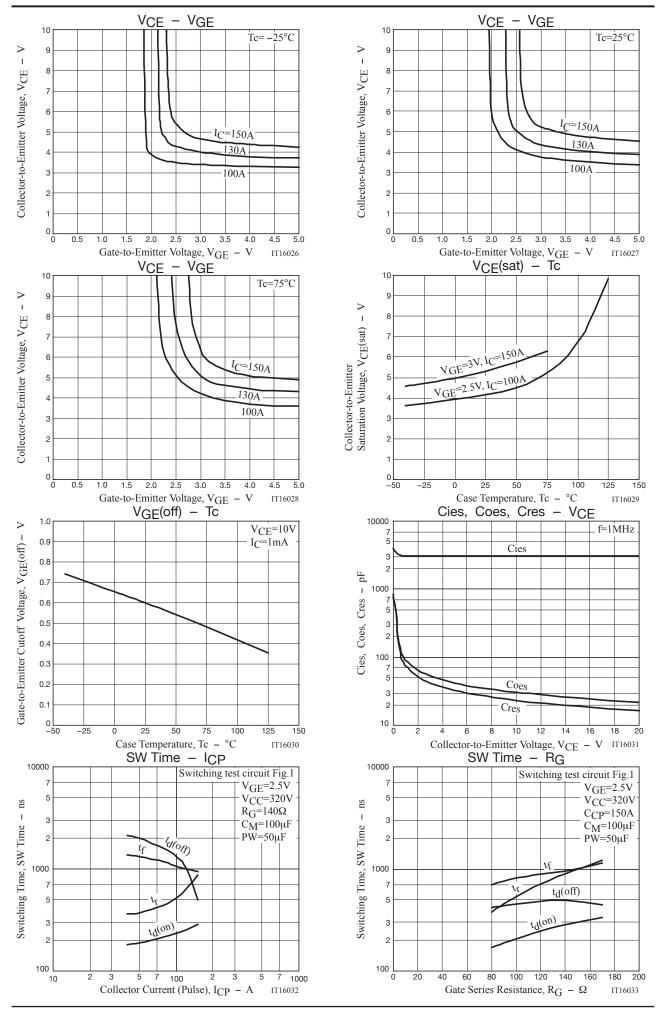
Fig.1 Large Current R Load Switching Circuit

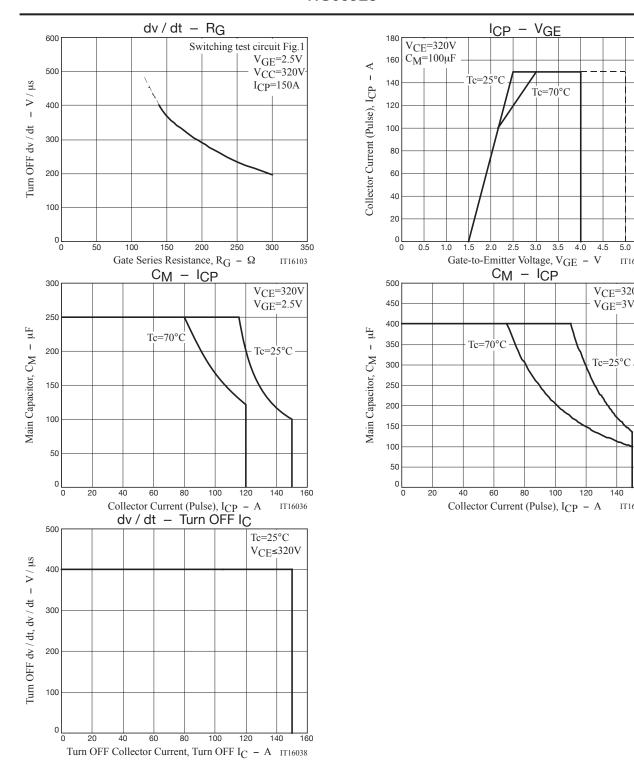


Note1. The collector voltage gradient dv / dt must be smaller than 400V / μs to protect the device of gate-series resistance RG when it is turned off.









V_{CE}=320V

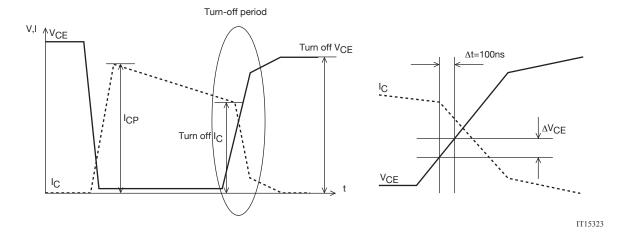
 $V_{GE}=3V$

Definition of dv/dt

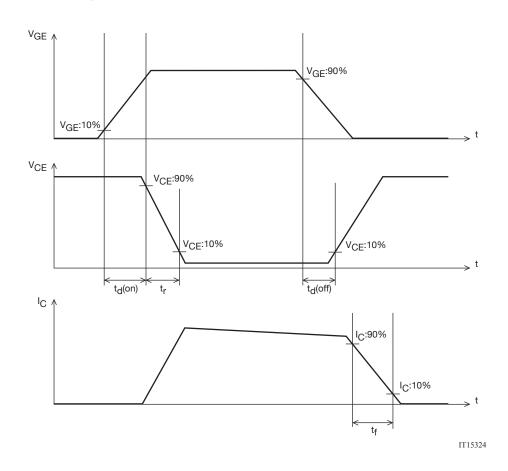
dv/dt is defined as the maximum slope of the below VCE curve during turn-off period. dv/dt= $\Delta VCE/\Delta t$ = $\Delta VCE/100ns$

Overall waveform

Enlarged picture of turn-off period



Definition of Switching Time



Note: TIG065E8 has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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