

SANYO Semiconductors

DATA SHEET

TIG058E8 — N-Channel IGBT

Light-Controlling Flash Applications

Features

- · Low-saturation voltage.
- Low voltage drive (4V).
- Enhansment 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	VCES		400	V
Gate-to-Emitter Voltage (DC)	VGES		±6	V
Gate-to-Emitter Voltage (Pulse)	VGES	PW≤1ms	±8	V
Collector Current (Pulse)	ICP	С _М =150µF, V _{GE} =4V	150	А
Maximum Collector-to-Emitter dv / dt	dV _{CE} / dt	V _{CE} ≤320V, starting Tch=25°C	400	V/μs
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-40 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Unit
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	VGE=±6V, VCE=0V			±10	μΑ
Marking : ZB				Co	ontinued on	next page.

Marking : ZB

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

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Parameter	Symbol	Conditions		Ratings		
			min	typ	max	Unit
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} =4V		4.0	5.6	V
Input Capacitance	Cies	VCE=10V, f=1MHz		2200		pF
Output Capacitance	Coes	V _{CE} =10V, f=1MHz		32		pF
Reverse Transfer Capacitance	Cres	V _{CE} =10V, f=1MHz		24		pF

Package Dimensions

unit : mm (typ) 7011A-004

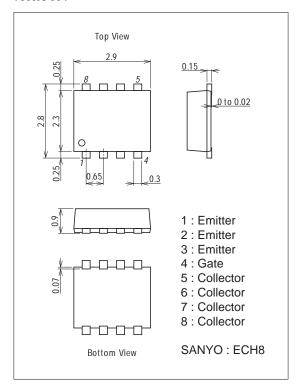
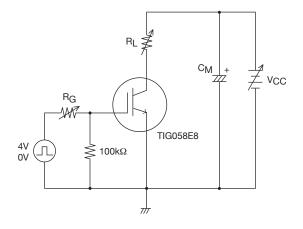


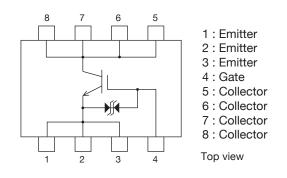
Fig.1 Large Current R Load Screening Circuit

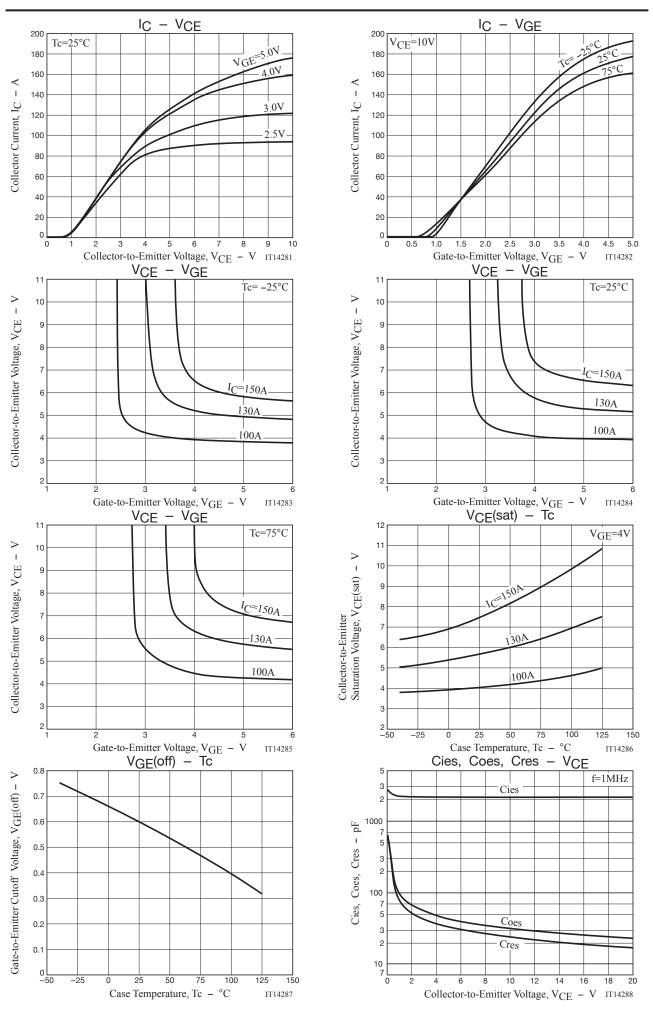


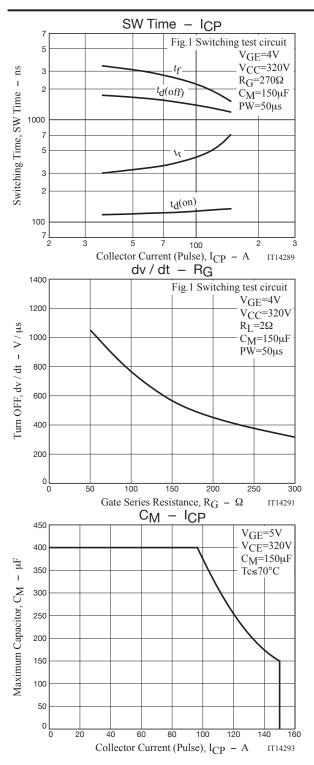
Note1. Gate Series Resistance $R_G \ge 230\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv / dt \le 400V / \mu s$ is satisfied at customer's actual set evaluation, $R_G < 230\Omega$ can also be used.

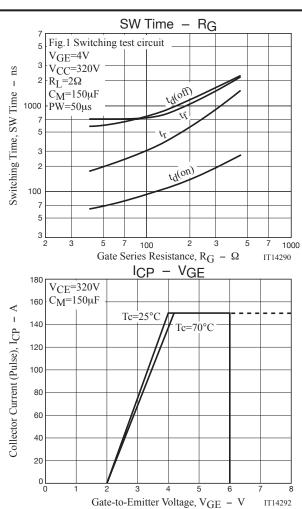
Note2. The collector voltage gradient dv / dt must be smaller than 400V / µs to protect the device when it is turned off.

Electrical Connection









Note : TIG058E8 has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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