

SANYO Semiconductors DATA SHEET

An ON Semiconductor Company

TIG066SS

N-Channel IGBT Light-Controlling Flash Applications

· Built-in Gate-to-Emitter protection diode

Features

- · Low-saturation voltage
- Enhansment type
- High speed switching

Specifications

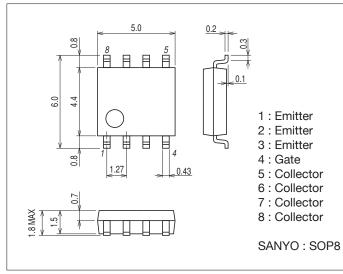
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage (DC)	VCES		400	V
Collector-to-Emitter Voltage (Pulse)	VCESP	PW≤1ms	450	V
Gate-to-Emitter Voltage (DC)	VGES		±6	V
Gate-to-Emitter Voltage (Pulse)	VGESP	PW≤1ms	±8	V
Collector Current (Pulse)	ICP	С _М =600µF	150	А
Maximum Collector-to-Emitter dv / dt	dv / dt	VCE≤320V, starting Tch=25°C	1500	V/μs
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-40 to +150	°C

• 4.0V drive

Package Dimensions

unit : mm (typ) 7005A-008

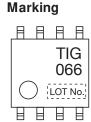


Product & Package Information

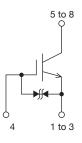
- : SOP8
- JEITA, JEDEC : SC-87, SOT96
- Minimum Packing Quantity : 1000 pcs./reel

Packing Type: TL

• Package



Electrical Connection

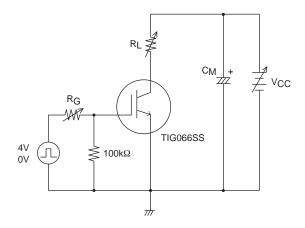


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Electrical Characteristics at Ta= $25^{\circ}C$

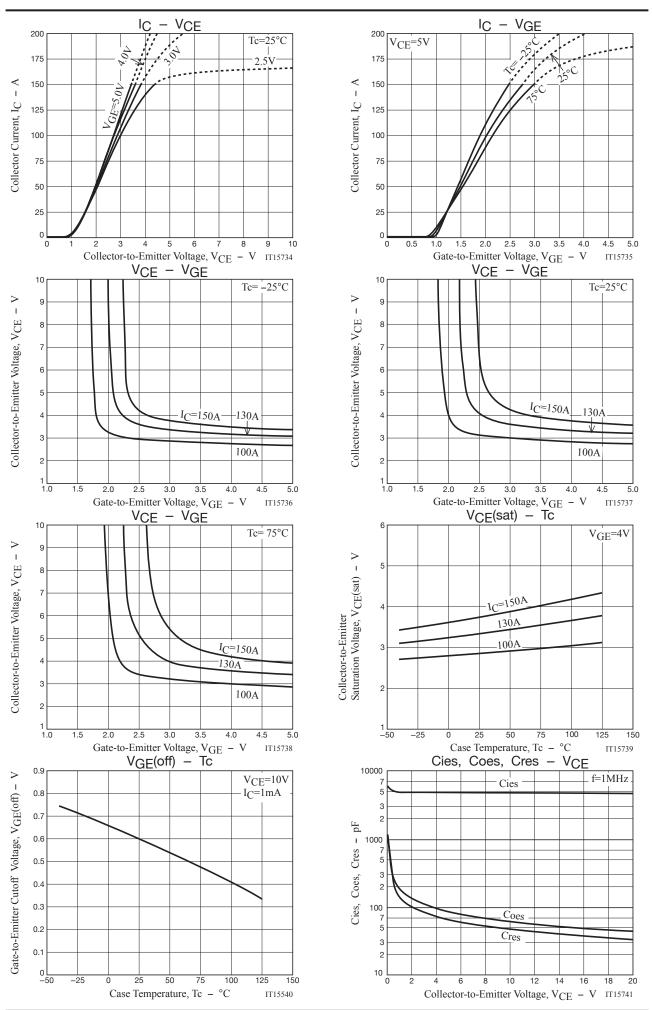
Parameter	Symbol	Conditions	Ratings			1.1
			min	typ	max	Unit
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=2mA, VGE=0V	400			V
Collector-to-Emitter Cutoff Current	ICES	V _{CE} =320V, V _{GE} =0V			10	μA
Gate-to-Emitter Leakage Current	IGES	V _{GE} =±6V, V _{CE} =0V			±10	μA
Gate-to-Emitter Threshold Voltage	V _{GE} (off)	V _{CE} =10V, I _C =1mA	0.4		1.0	V
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=150A, VGE=4V		3.8	5	V
Input Capacitance	Cies	V _{CE} =10V, f=1MHz		5100		pF
Output Capacitance	Coes	V _{CE} =10V, f=1MHz		59		pF
Reverse Transfer Capacitance	Cres	V _{CE} =10V, f=1MHz		43		pF
Fall Time	tf	IC=150A, VCC=320V, Resistor load VGE=4V, RG=36 Ω		270		ns

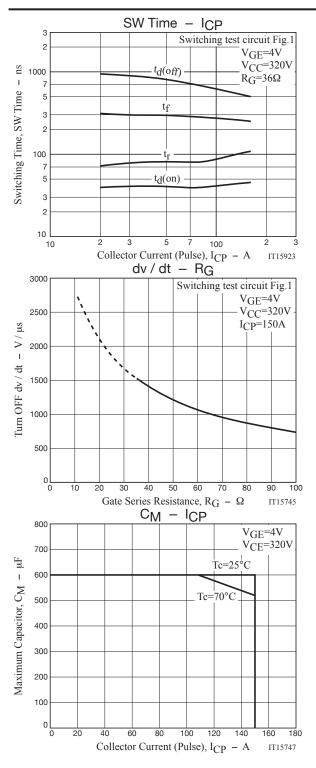
Fig1 Large Current R Load Switching Circuit

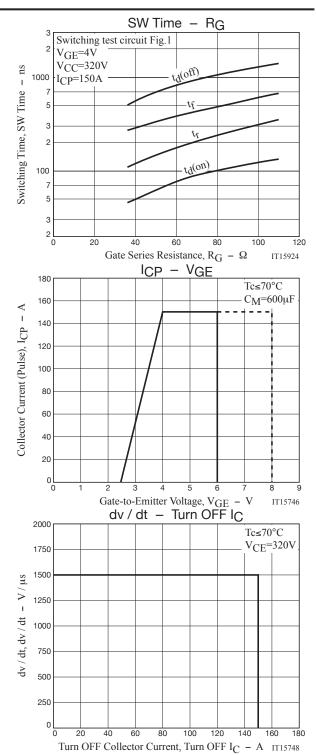


Note1. Gate Series Resistance $R_G \ge 36\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv / dt \le 1500V / \mu s$ is satisfied at customer's actual set evaluation, $R_G < 36\Omega$ can also be used.

Note2. The collector voltage gradient dv / dt must be smaller than $1500V / \mu s$ to protect the device when it is turned off.





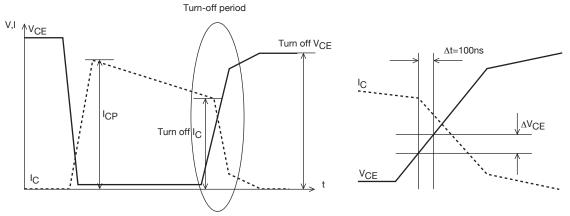


Definition of dv/dt

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

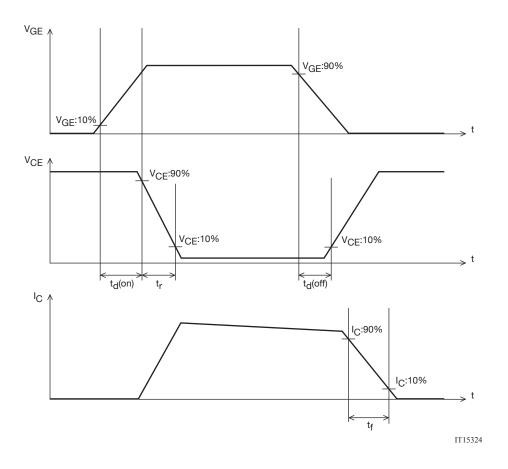
Overall waveform

Enlarged picture of turn-off period



IT15323

Definition of Switching Time



Note : TIG066SS has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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