



TIG030TS — N-Channel IGBT

Light-Controlling Flash Applications

Features

- Low-saturation voltage.
- 4V drive.
- Enhancement type.
- Built-in gate-to-emitter protection diode.
- Mounting height 1.1mm, mounting area 19.2mm².
- dv / dt guarantee.*

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 _{CP}	PW≤500μs, duty cycle≤0.5%, C _M =400μF	150	A
Maximum Collector-to-Emitter dv / dt	dV _{CE} / dt	V _{CE} ≤320V, starting T _{ch} =25°C	400	V / μs
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-40 to +150	°C

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} =±6V, V _{CE} =0V			±10	μA

Marking : G030

Continued on next page.

* : Conduct 100% screening of dv / dt (slope of collector voltage at the time of turn-off) by dv / dt > 400V/μs.

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TIG030TS

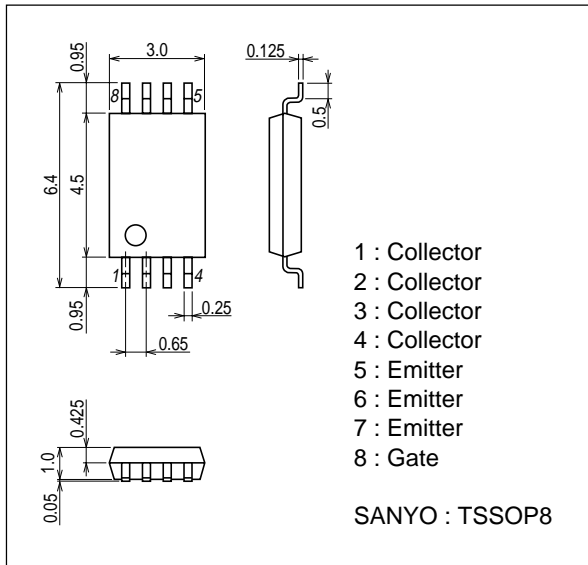
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Emitter Threshold Voltage	$V_{GE(off)}$	$V_{CE}=10V, I_C=1mA$	0.5		1.2	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150A, V_{GE}=4V$		3.7	5.4	V
Input Capacitance	Cies	$V_{CE}=10V, f=1MHz$		2610		pF
Output Capacitance	Coes	$V_{CE}=10V, f=1MHz$		59		pF
Reverse Transfer Capacitance	Cres	$V_{CE}=10V, f=1MHz$		36		pF

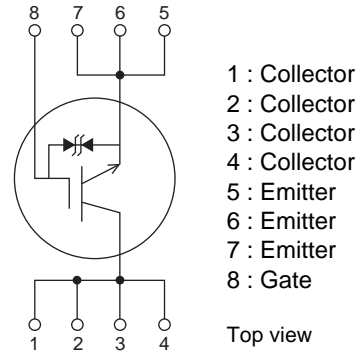
Package Dimensions

unit : mm (typ)

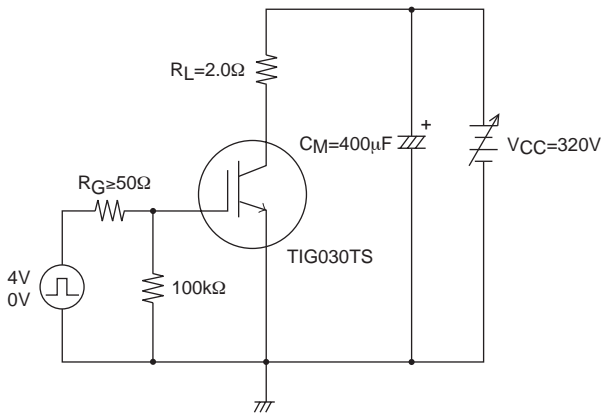
7006A-007



Electrical Connection



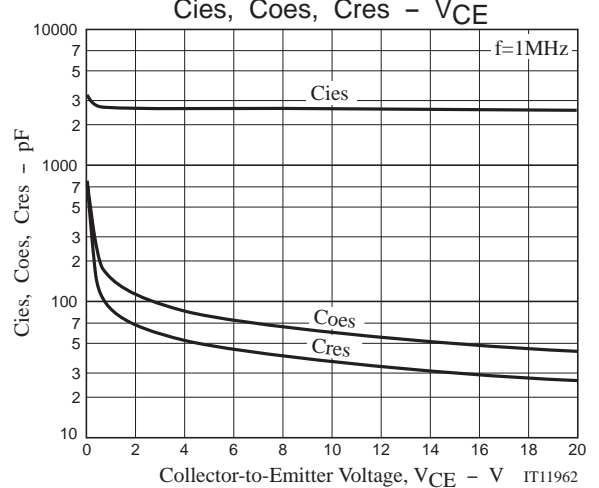
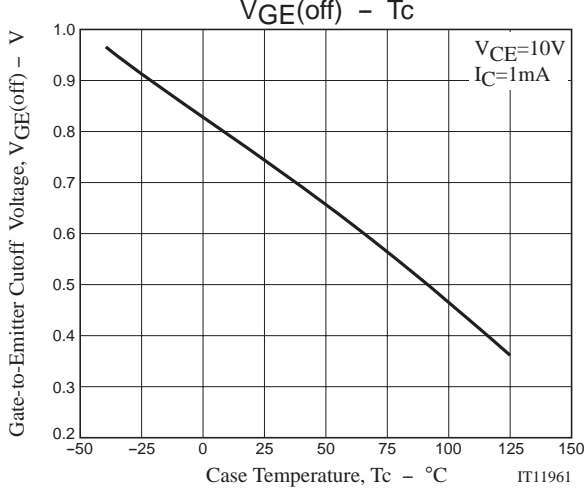
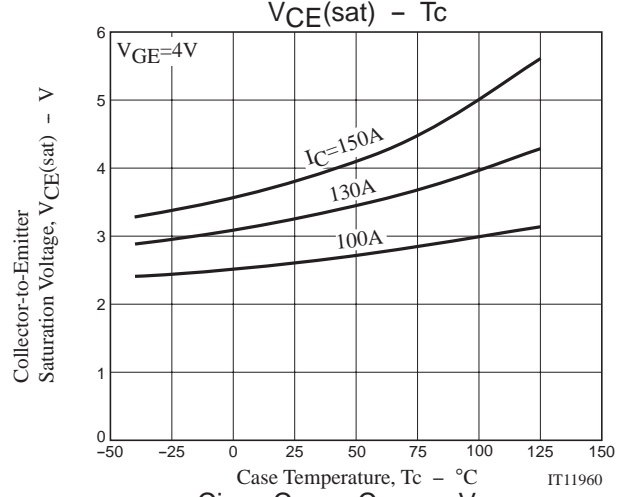
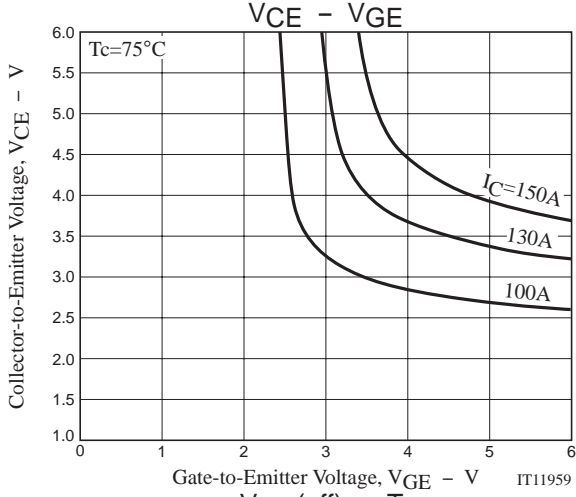
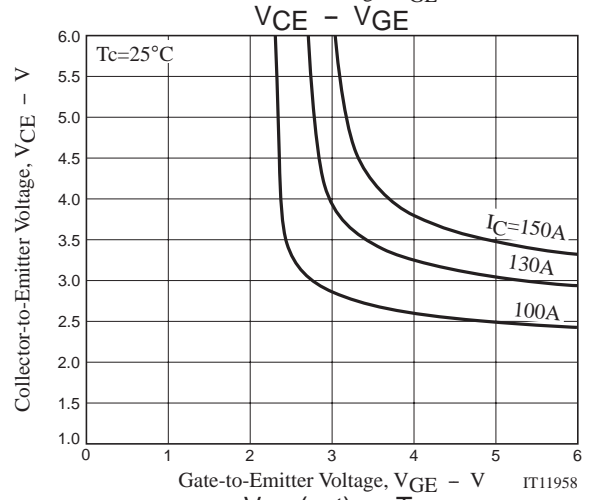
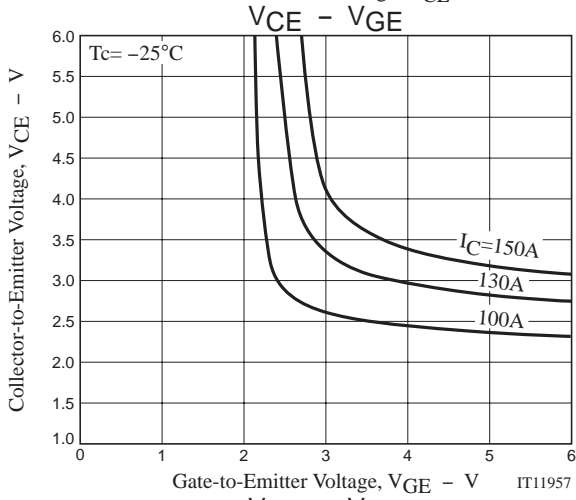
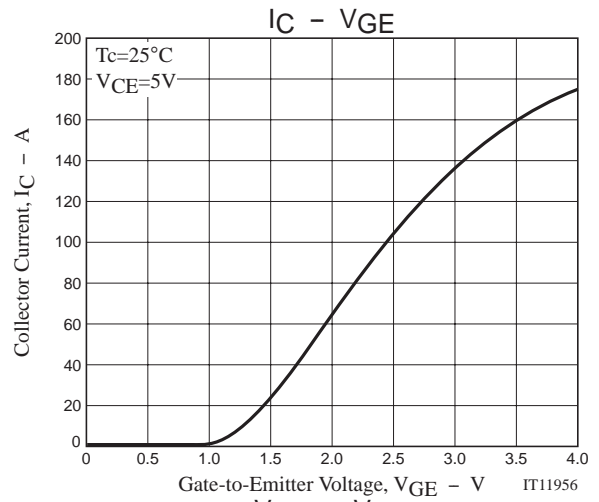
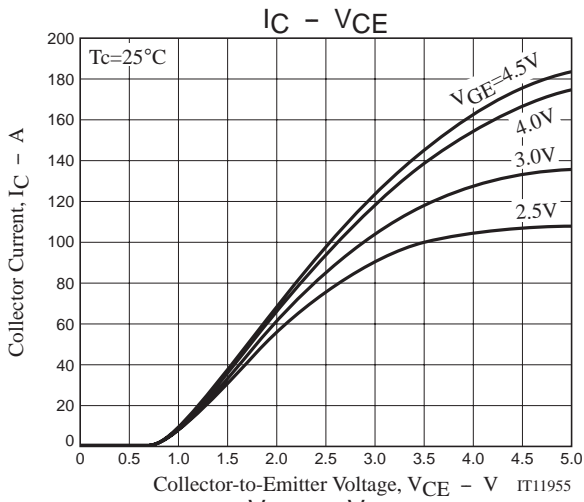
Large Current R Load Screening Circuit



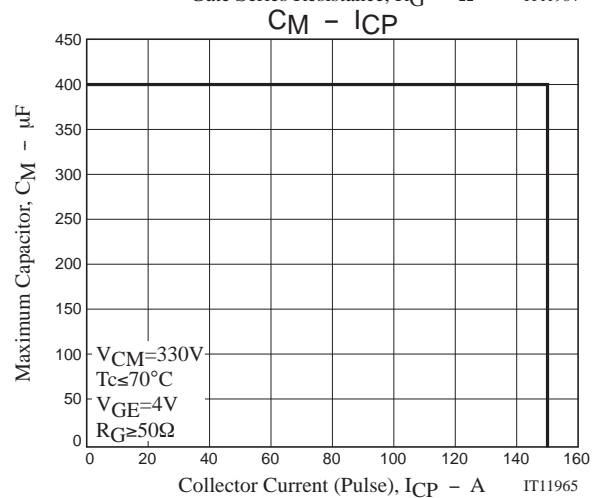
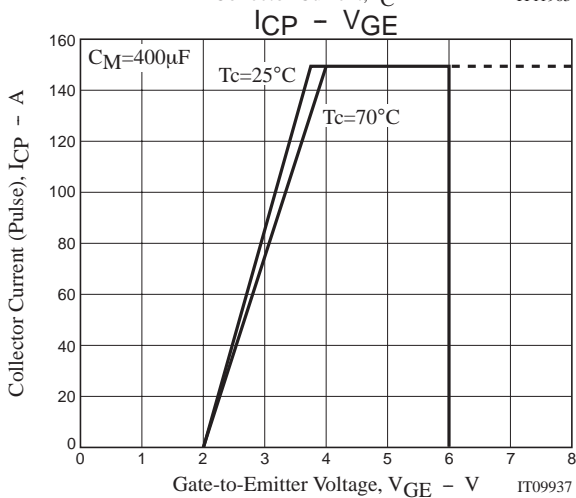
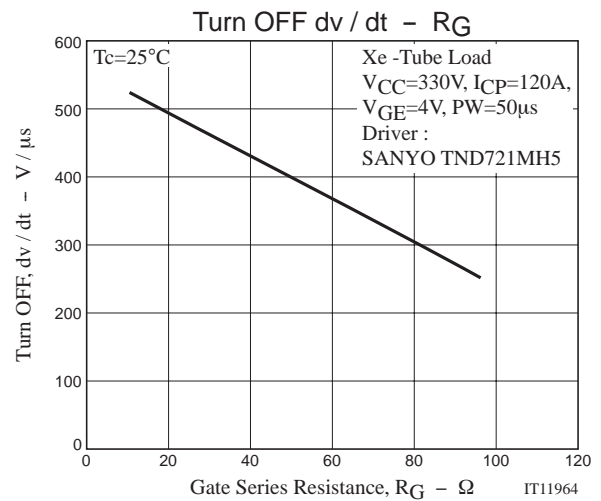
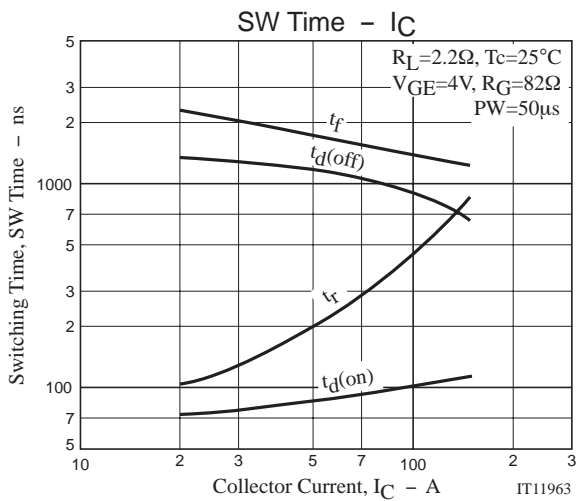
Note1. Gate Series Resistance $R_G \geq 50\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv/dt \leq 400V/\mu s$ is satisfied at customer's actual set evaluation, $R_G < 50\Omega$ can also be used.

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

TIG030TS



TIG030TS





Note : TIG030TS has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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