

# TIG067SS



## IGBT

400V, 150A, VCE(sat);3.8V Single N-Channel

ON Semiconductor®

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### Features

- Low-saturation Voltage
- Enhancement Type
- High Speed Switching
- 4.0V Drive
- Built-in Gate-to-Emitter Protection Diode
- Pb-Free, Halogen Free and RoHS Compliance

### Applications

- Light-controlling Flash

### Specifications

Absolute Maximum Ratings at Ta=25°C

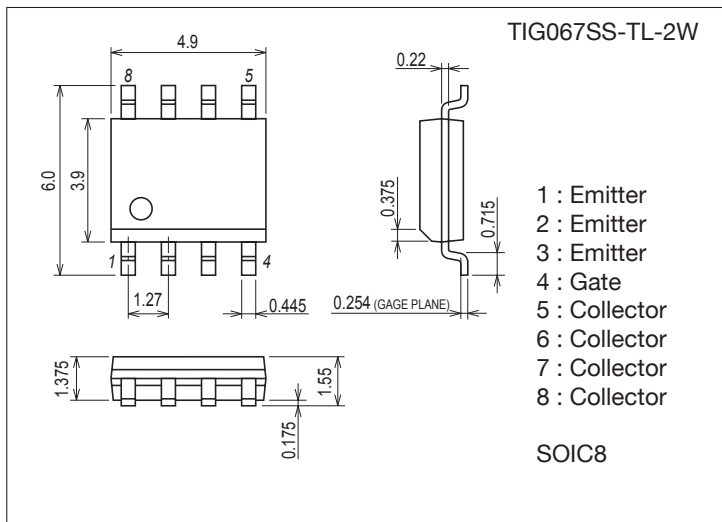
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage (DC)	V <sub>CES</sub>		400	V
Collector-to-Emitter Voltage (Pulse)	V <sub>CESP</sub>	PW≤1ms	450	V
Gate-to-Emitter Voltage (DC)	V <sub>GES</sub>		±6	V
Gate-to-Emitter Voltage (Pulse)	V <sub>GESP</sub>	PW≤1ms	±8	V
Collector Current (Pulse)	I <sub>CP</sub>	C <sub>M</sub> =600μF	150	A
Maximum Collector-to-Emitter dv / dt	dv / dt	V <sub>CE</sub> ≤320V, starting T <sub>ch</sub> =25°C	1500	V / μs
Allowable Power Dissipation	P <sub>D</sub>	When mounted on FR4 substrate (11,680mm <sup>2</sup> ×1.6mm)	1.2	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-40 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

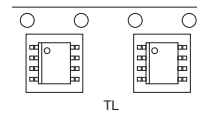
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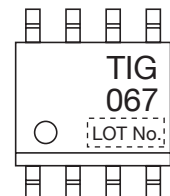
### Product & Package Information

- Package : SOIC8
- JEITA, JEDEC : SC-87, SOT-96
- Minimum Packing Quantity : 2500 pcs./reel

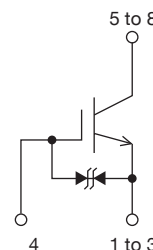
### Packing Type: TL



### Marking



### Electrical Connection



### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

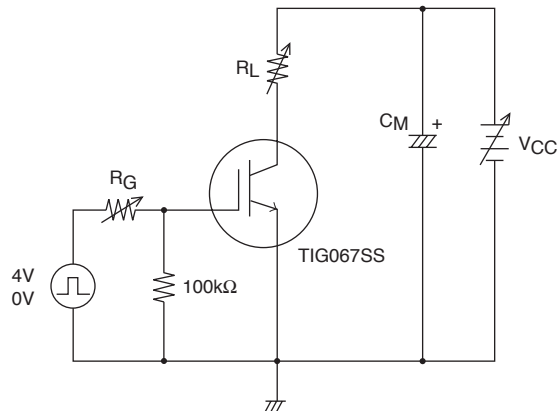
# TIG067SS

## 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	$\mu A$
Gate-to-Emitter Leakage Current	$I_{GES}$	$V_{GE}=\pm 6V, V_{CE}=0V$			$\pm 10$	$\mu A$
Gate-to-Emitter Threshold Voltage	$V_{GE(off)}$	$V_{CE}=10V, I_C=1mA$	0.4		1.0	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150A, V_{GE}=4V$		3.8	5	V
Input Capacitance	$C_{ies}$			5100		pF
Output Capacitance	$C_{oes}$	$V_{CE}=10V, f=1MHz$		59		pF
Reverse Transfer Capacitance	$C_{res}$			43		pF
Fall Time	$t_f$	$I_C=150A, V_{CC}=320V, \text{Resistor load } V_{GE}=4V, R_G=36\Omega$		270		ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

**Fig1 Large Current R Load Switching Circuit**

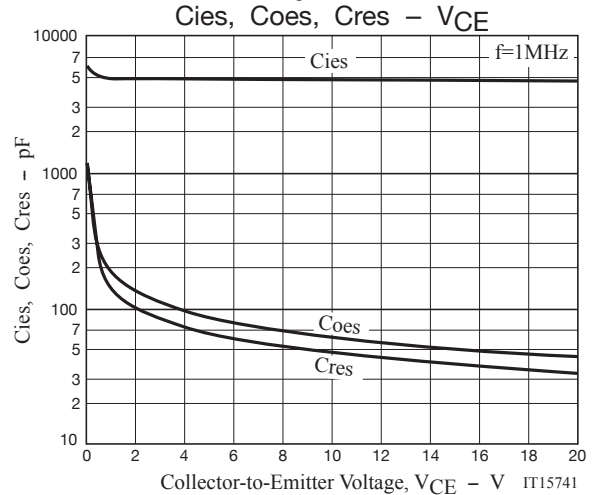
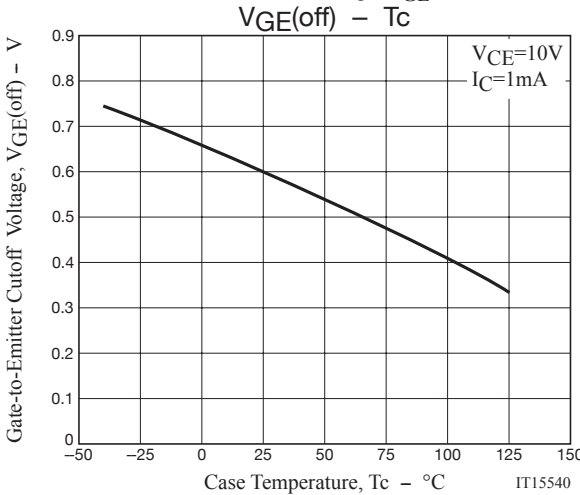
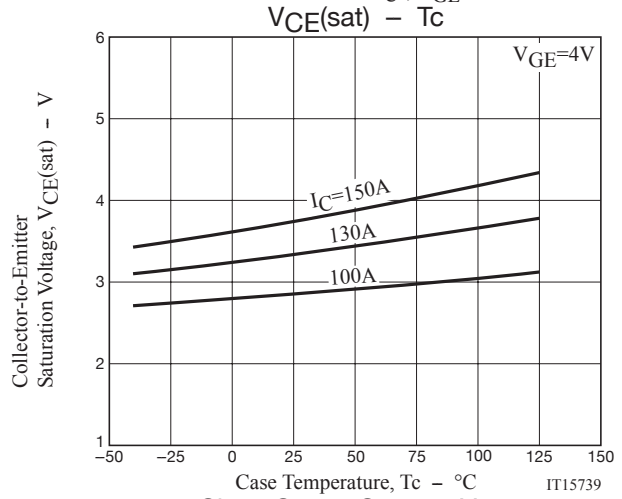
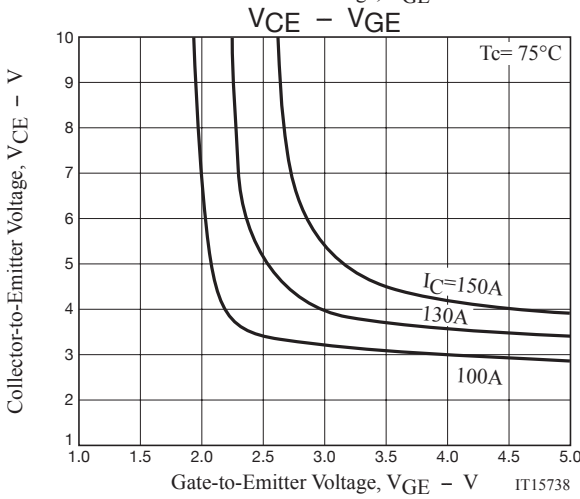
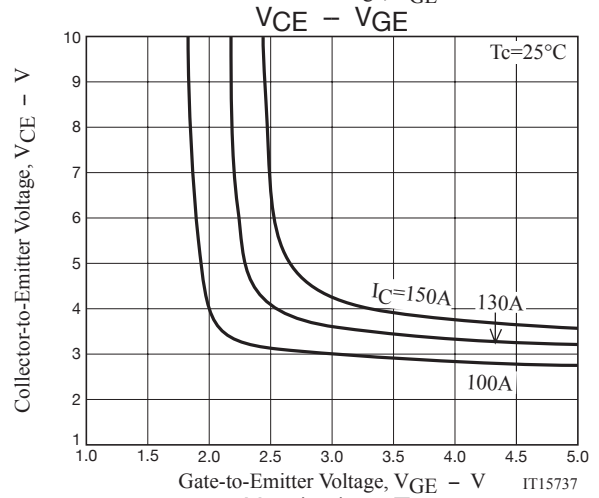
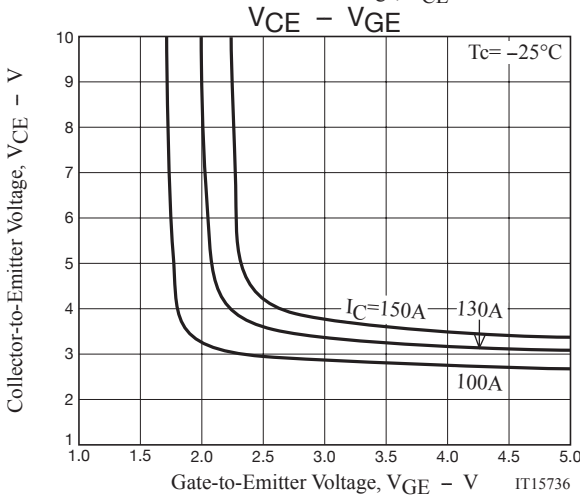
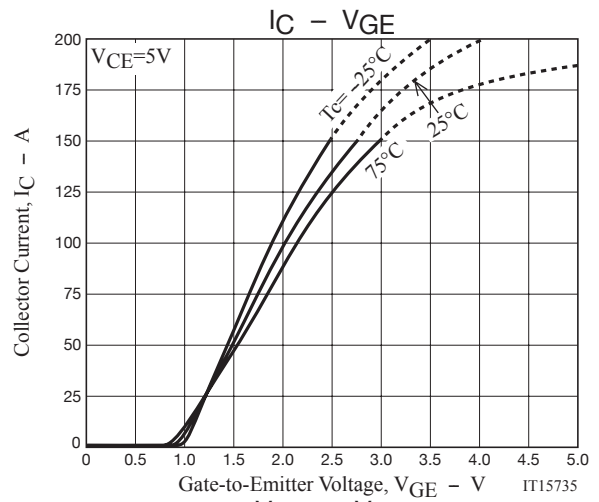
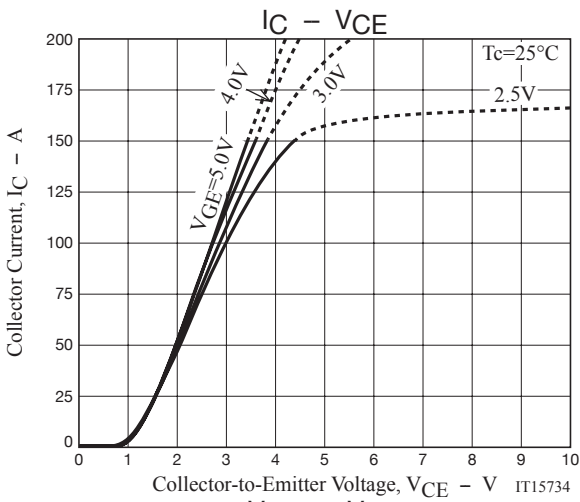


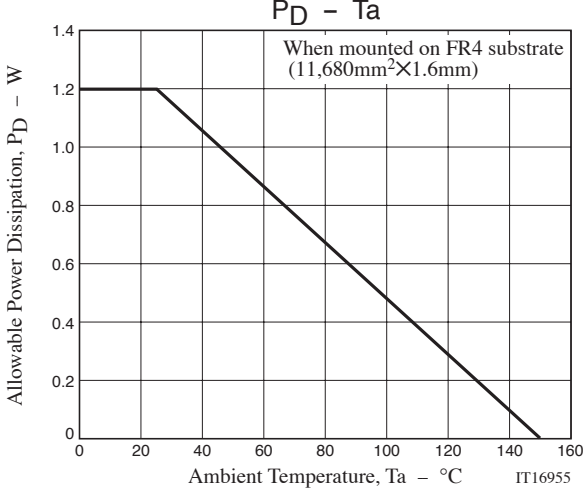
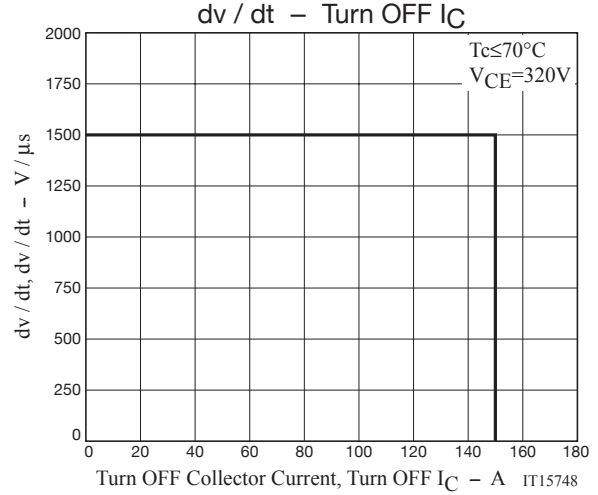
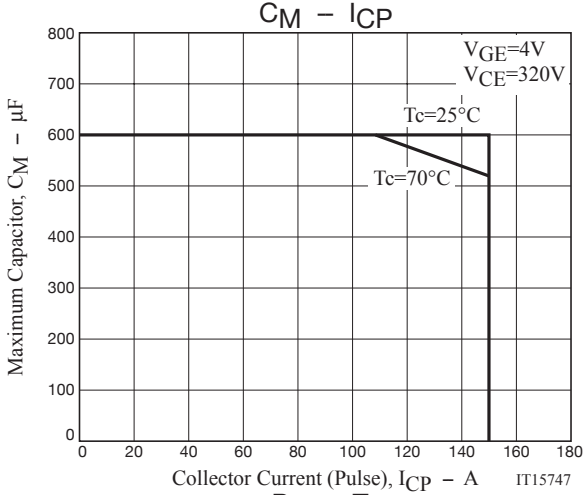
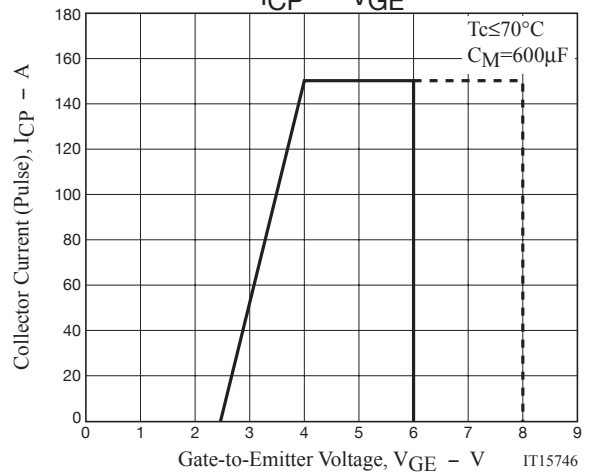
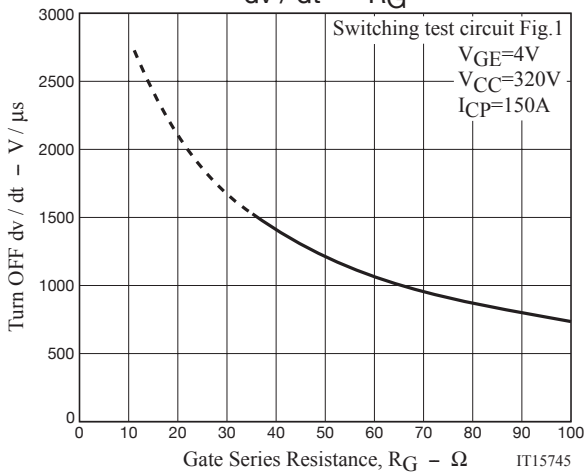
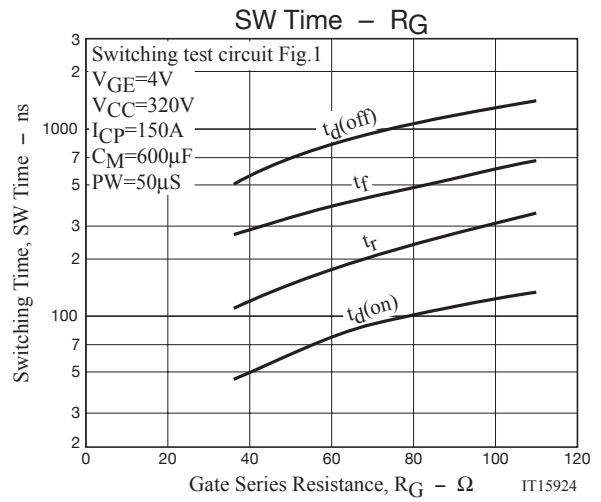
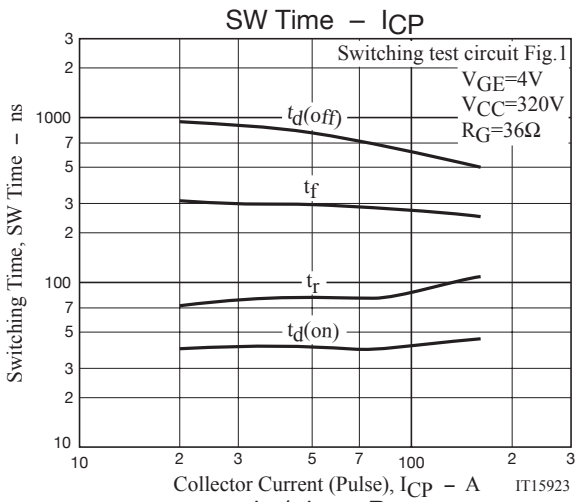
Note1. Gate Series Resistance  $R_G \geq 36\Omega$  is recommended for protection purpose at the time of turn OFF. However, if  $dv/dt \leq 1500/\mu s$  is satisfied at customer's actual set evaluation,  $R_G < 36\Omega$  can also be used.

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

## ORDERING INFORMATION

Device	Package	Shipping	memo
TIG067SS-TL-2W	SOIC8	2,500pcs./reel	Pb-Free and Halogen Free



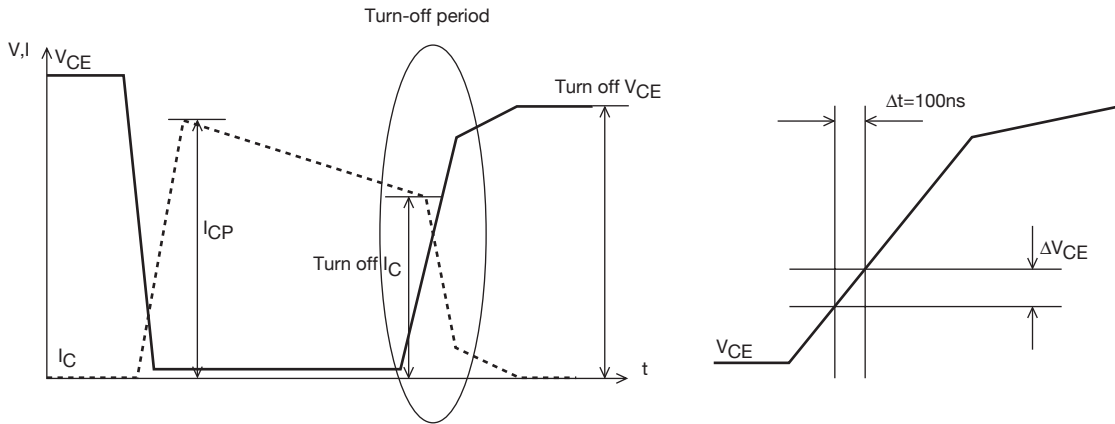


**Definition of dv/dt**

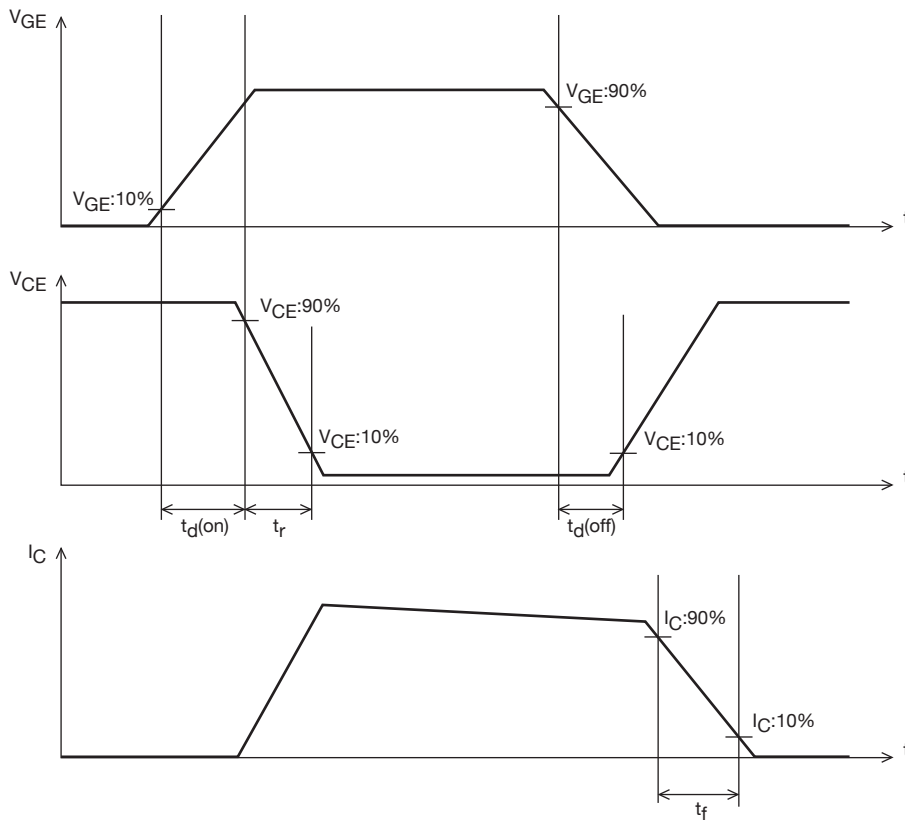
dv/dt is defined as the maximum slope of the below V<sub>CE</sub> curve during turn-off period.  
 $dv/dt = \Delta V_{CE} / \Delta t = \Delta V_{CE} / 100ns$

**Overall waveform**

**Enlarged picture of turn-off period**

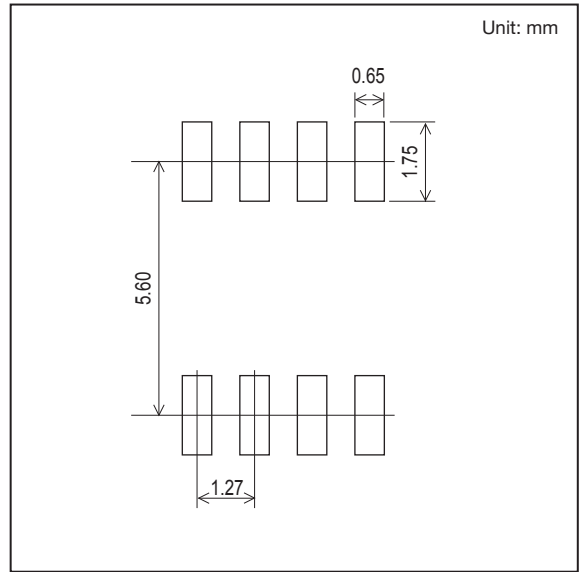
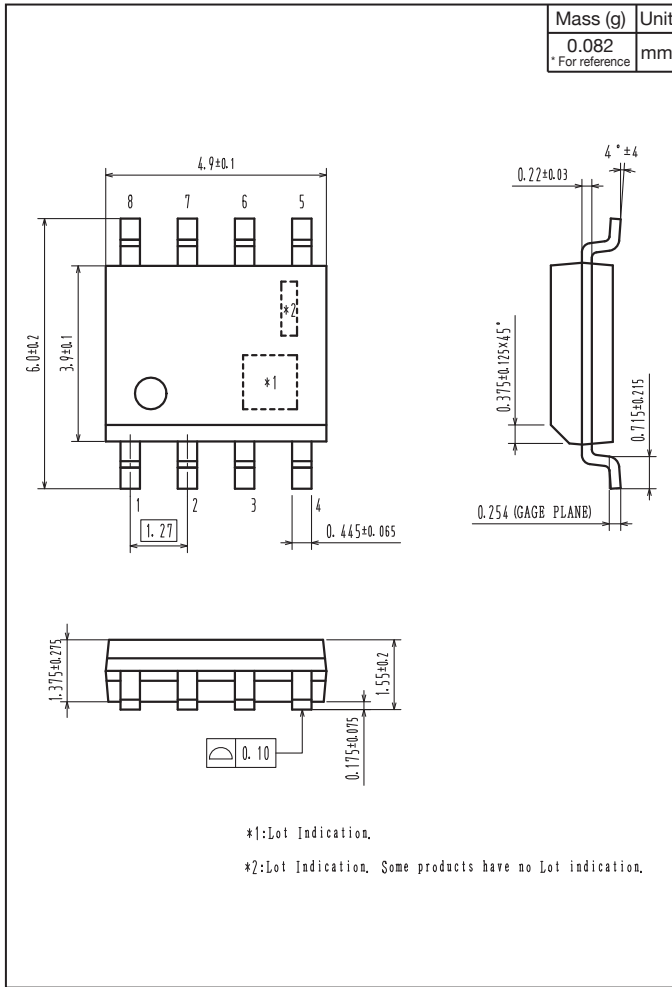


**Definition of Switching Time**



Outline Drawing  
TIG067SS-TL-2W

Land Pattern Example



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