



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

# TIG067SS — N-Channel IGBT

## Light-Controlling Flash Applications

### Features

- Low-saturation voltage
- Enhansment type
- High speed switching
- 4.0V drive
- Built-in Gate-to-Emitter protection diode
- Halogen free compliance

### Specifications

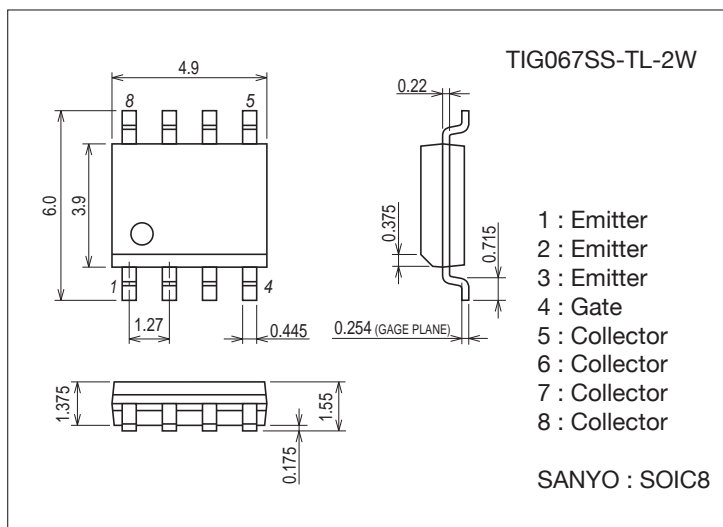
Absolute Maximum Ratings at Ta=25°C

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 Tch=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

### Package Dimensions

unit : mm (typ)

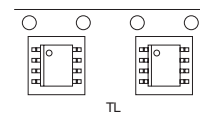
7072-002



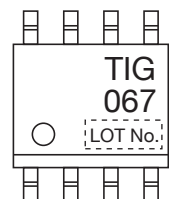
### Product & Package Information

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

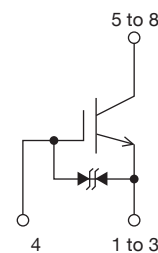
### Packing Type: TL



### Marking



### Electrical Connection

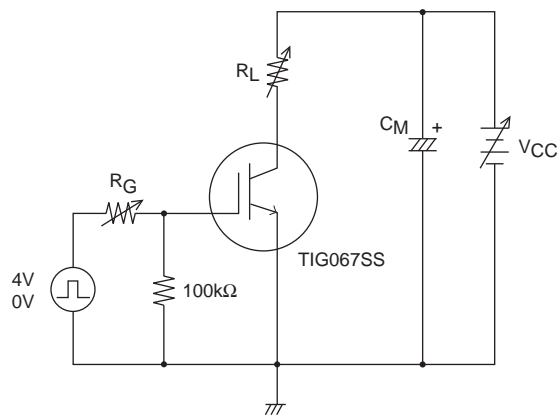


TIG067SS

Electrical Characteristics at Ta=25°C

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

Fig1 Large Current R Load Switching Circuit

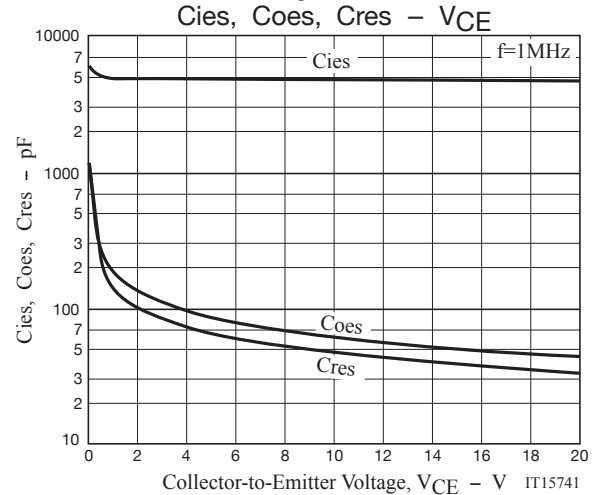
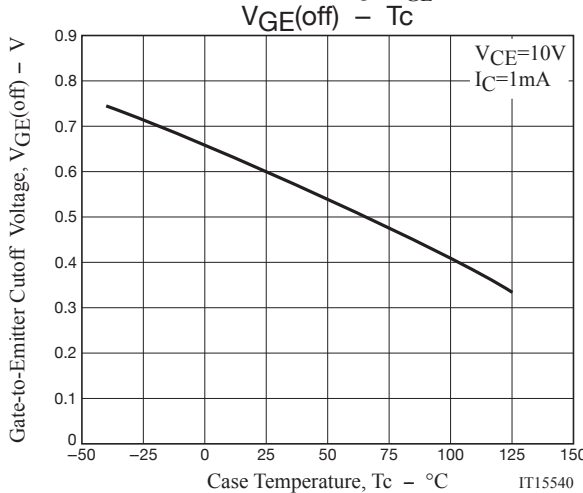
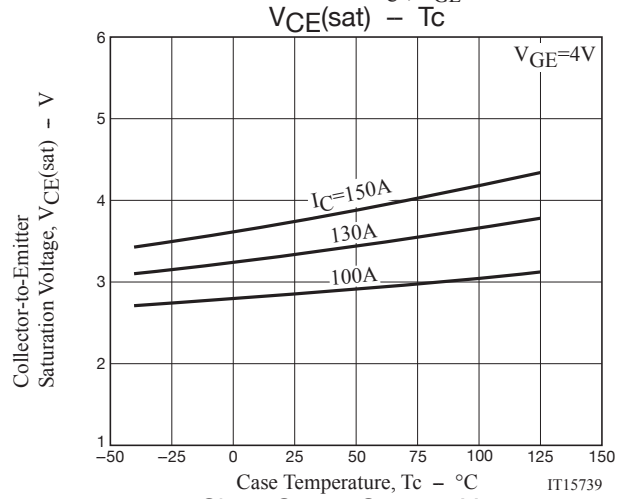
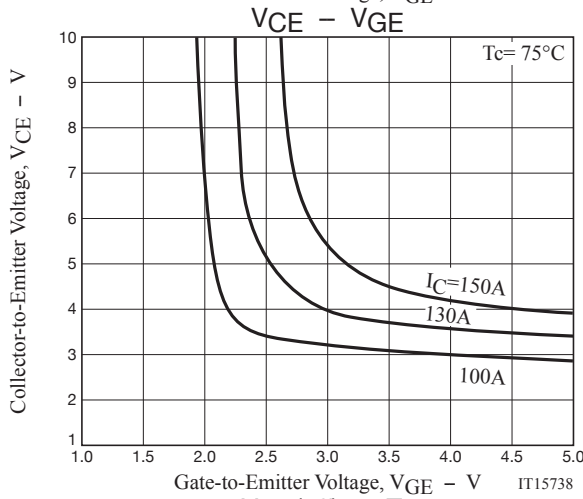
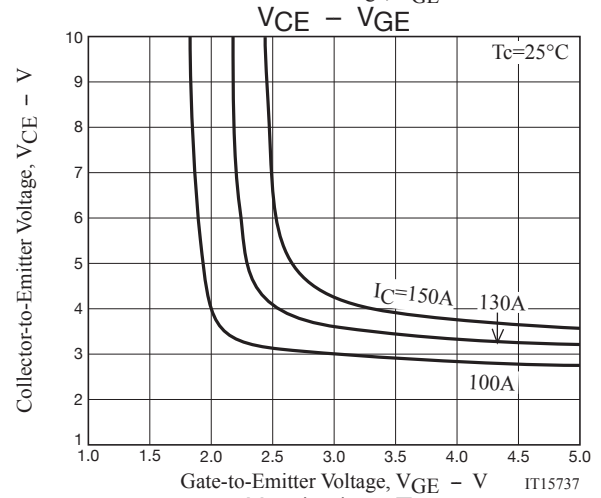
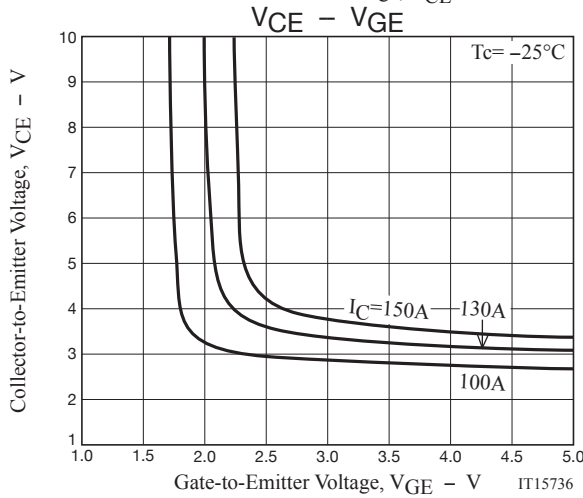
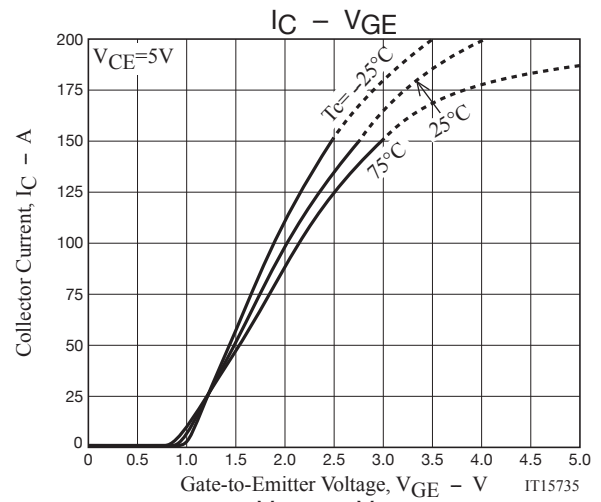
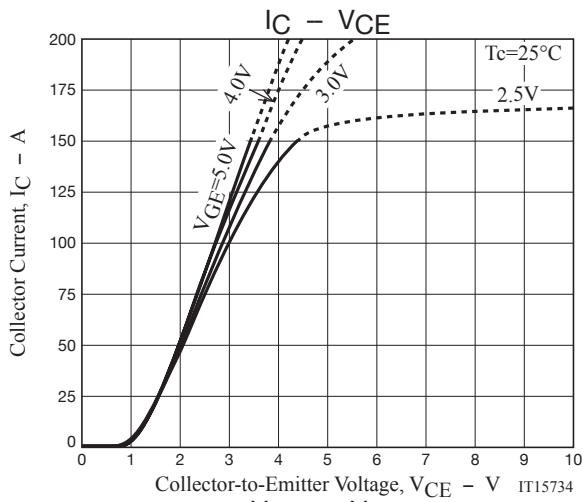


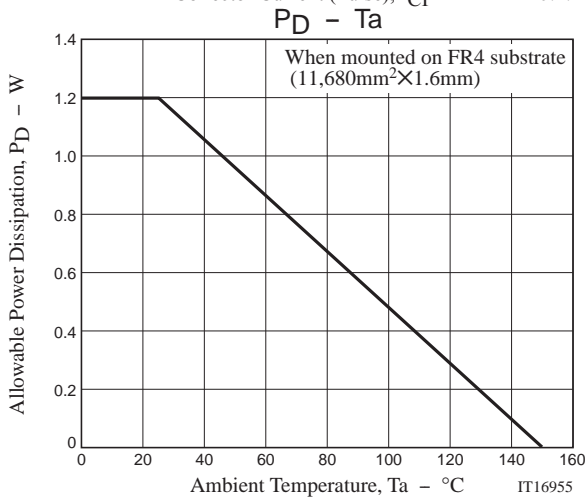
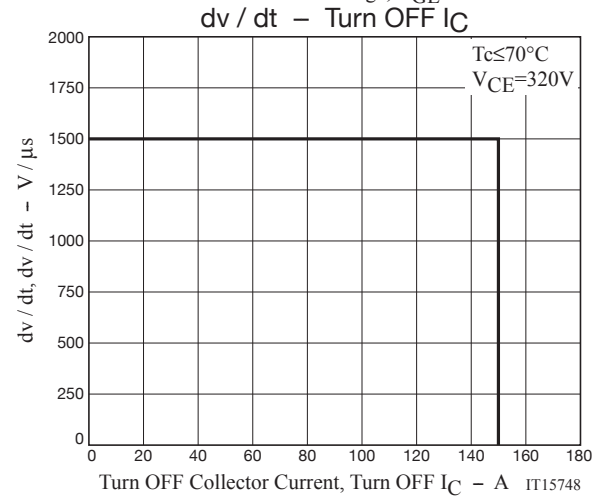
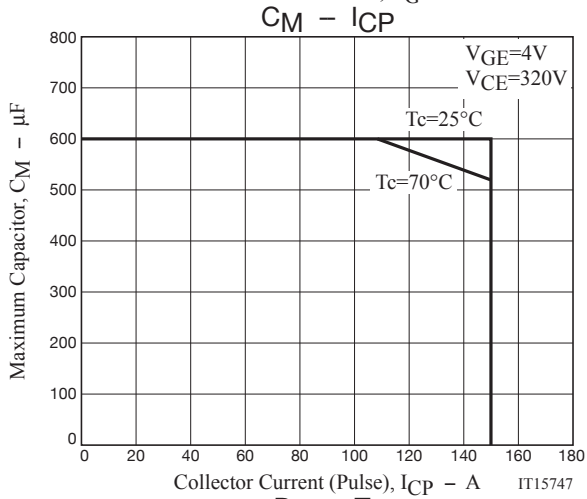
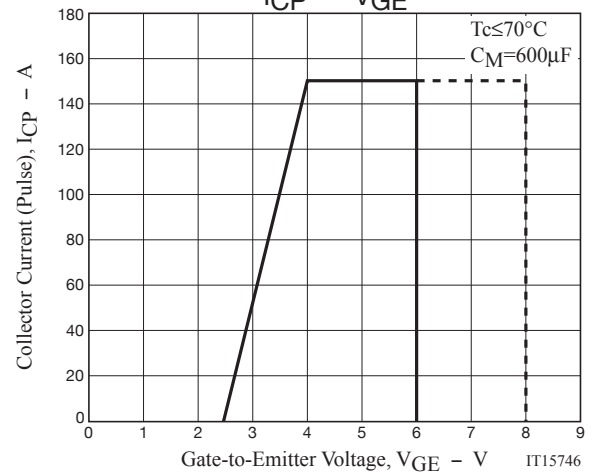
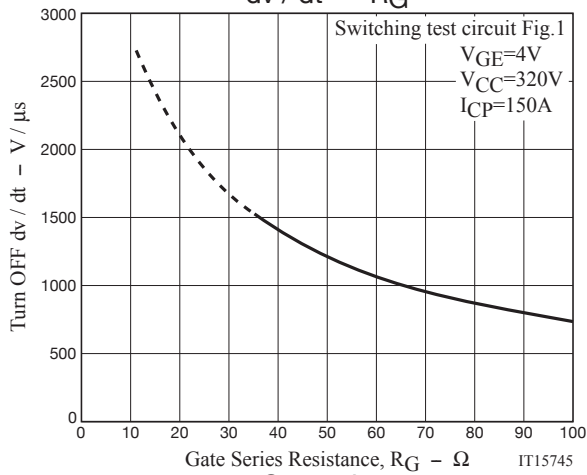
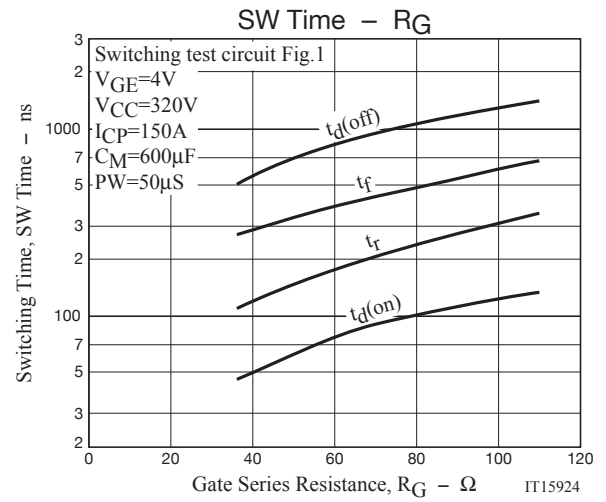
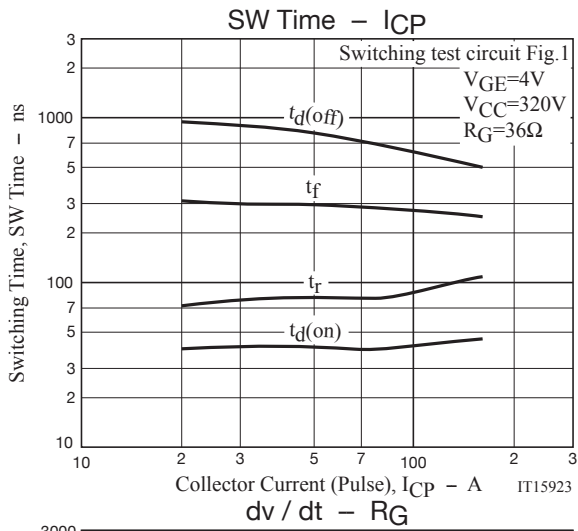
Note1. Gate Series Resistance  $R_G \geq 36\Omega$  is recommended for protection purpose at the time of turn OFF. However, if  $dv / dt \leq 1500 / \mu s$  is satisfied at customer's actual set evaluation,  $R_G < 36\Omega$  can also be used.

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



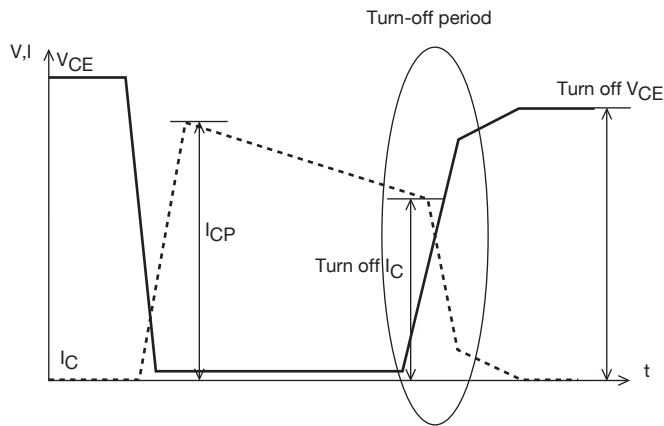


### Definition of $dv/dt$

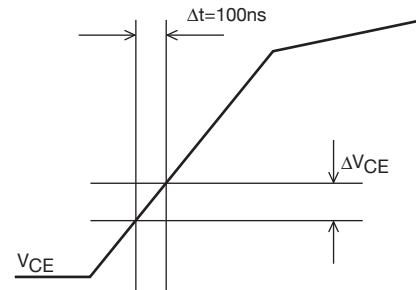
$dv/dt$  is defined as the maximum slope of the below  $V_{CE}$  curve during turn-off period.

$$dv/dt = \Delta V_{CE} / \Delta t = \Delta V_{CE} / 100ns$$

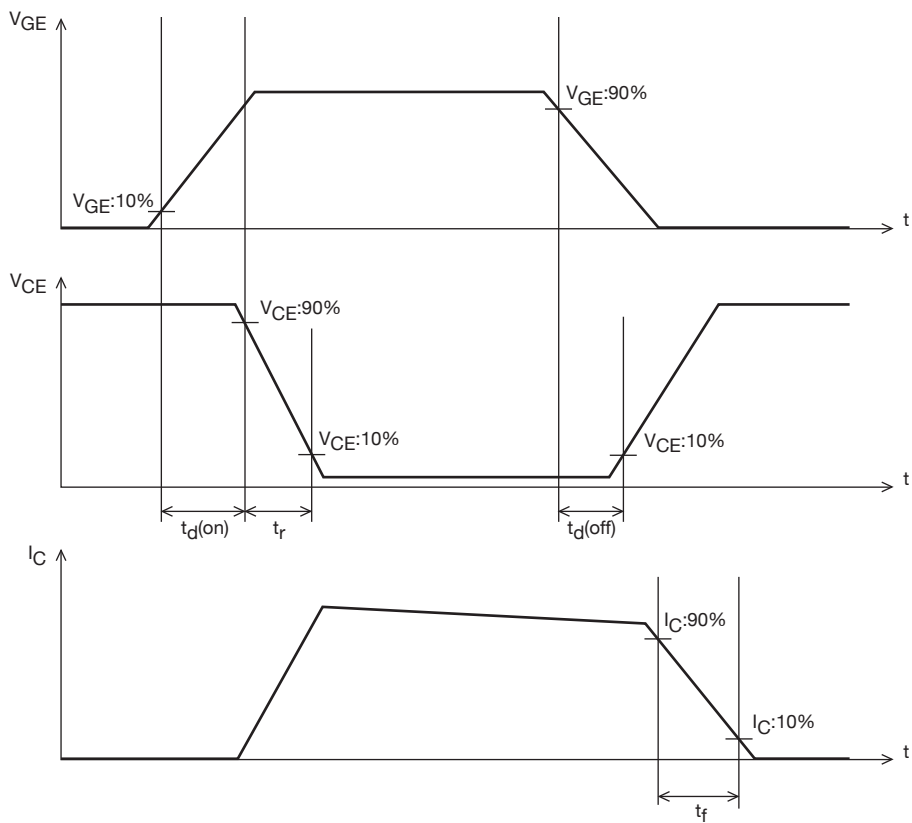
### Overall waveform



### Enlarged picture of turn-off period



### Definition of Switching Time



## Taping Specification

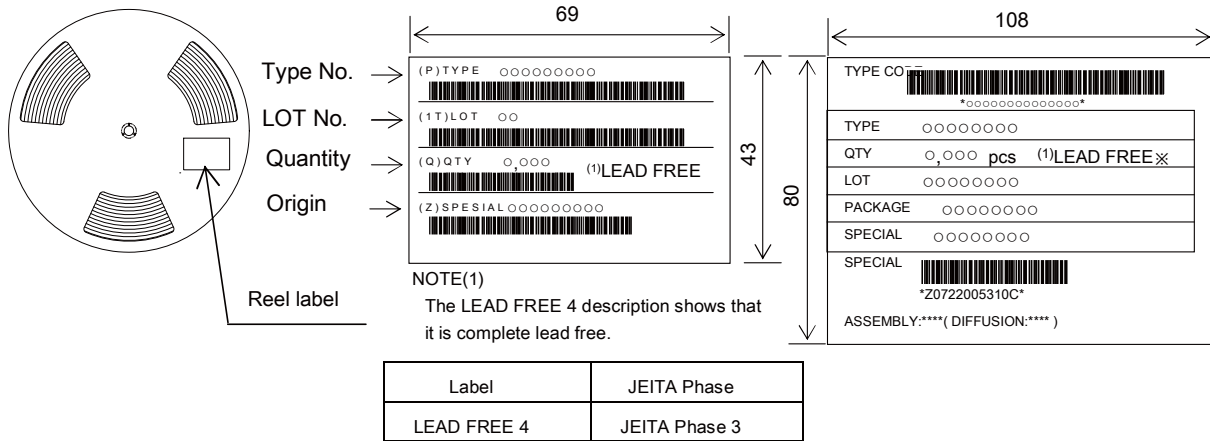
TIG067SS-TL-2W

## 1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX W206-112	Outer BOX W207-124
SOIC8	B202-101	2,500	12,500	25,000	5 reels contained Dimensions :mm(external) 340×95×340	2 inner boxes contained Dimensions :mm(external) 360×210×375

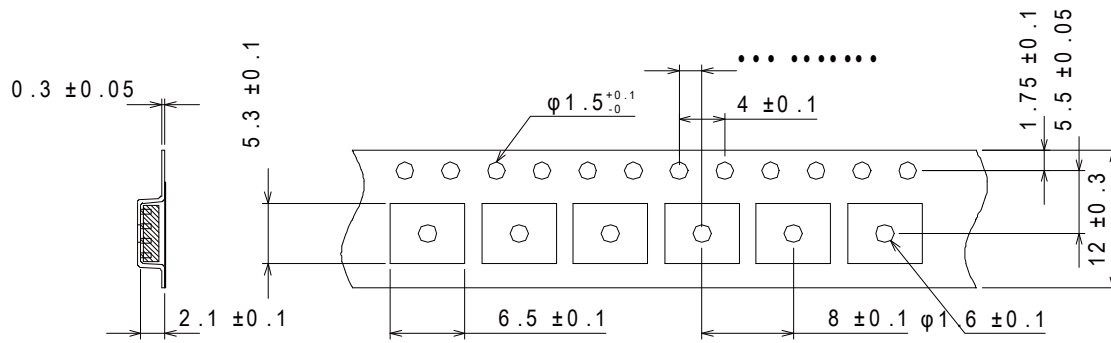
Packing methodReel label, Inner box label  
(unit: mm)Outer box label

It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

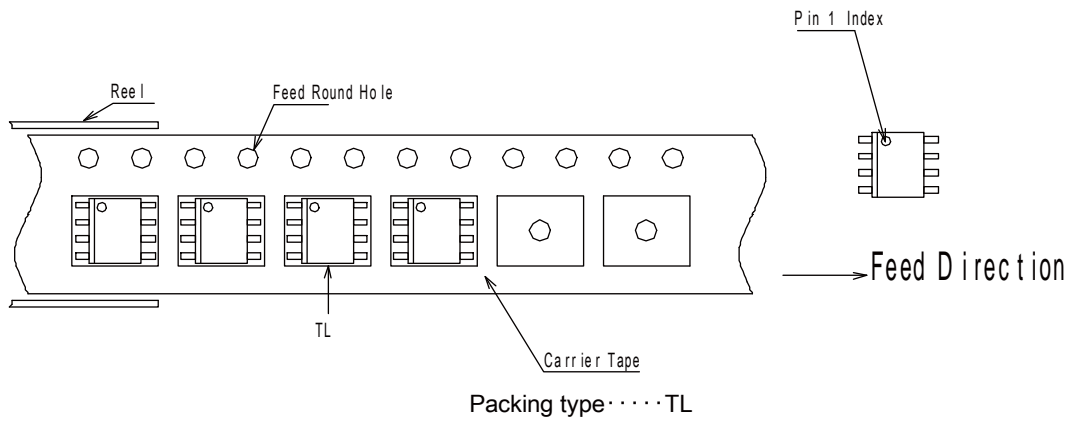


## 2. Taping configuration

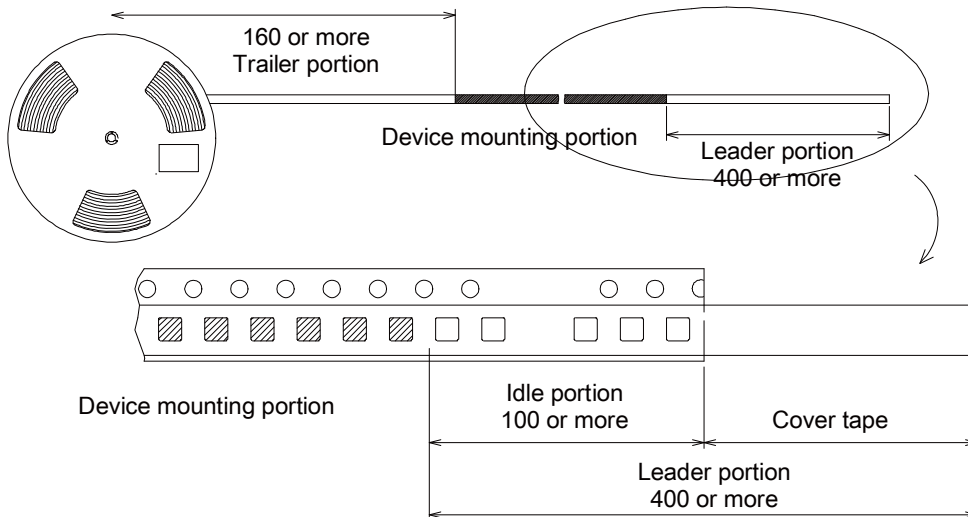
### 2-1. Carrier tape size (unit: mm)



### 2-2. Device placement direction



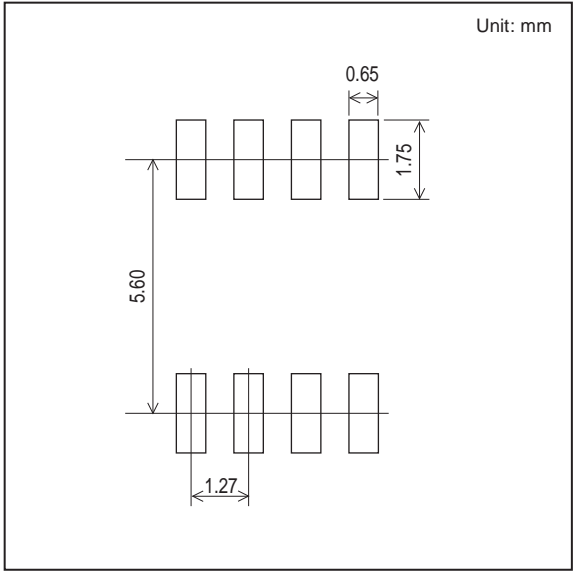
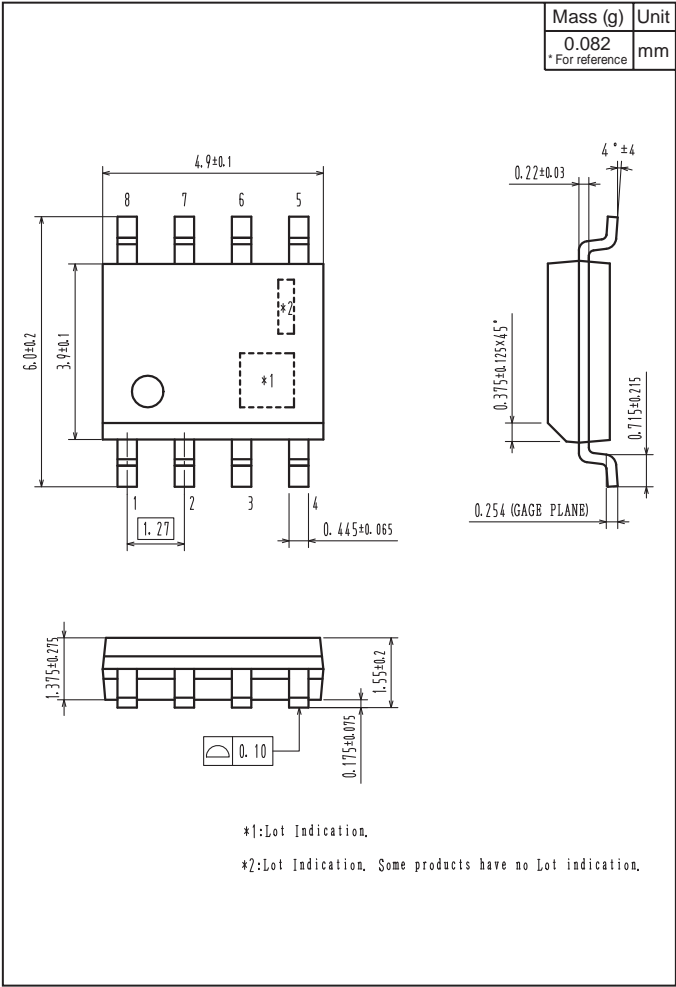
### 2-3. Leader portion and trailer portion (unit: mm)



Outline Drawing

TIG067SS-TL-2W

Land Pattern Example





Note : TIG067SS has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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