



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

TIG067SS

N-Channel IGBT
Light-Controlling Flash Applications

Features

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

Specifications

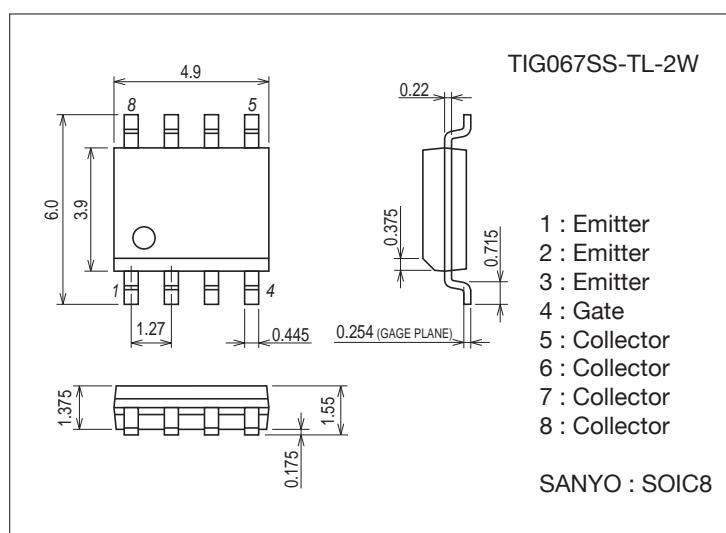
Absolute Maximum Ratings at Ta=25°C

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

Package Dimensions

unit : mm (typ)

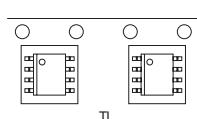
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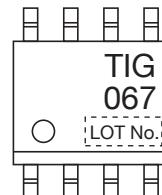
Product & Package Information

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

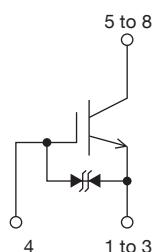
Packing Type: TL



Marking



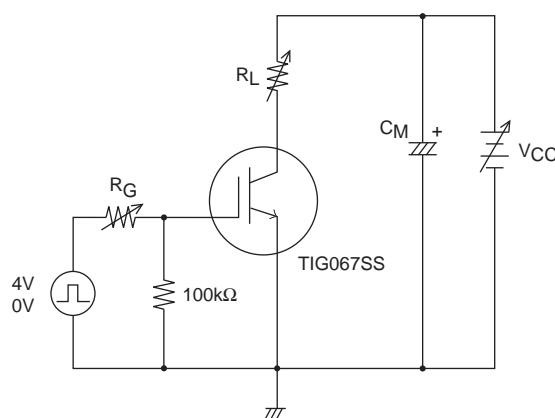
Electrical Connection



Electrical Characteristics at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Breakdown Voltage	$V(BR)_{CES}$	$I_C=2\text{mA}, V_{GE}=0\text{V}$	400			V
Collector-to-Emitter Cutoff Current	I_{CES}	$V_{CE}=320\text{V}, V_{GE}=0\text{V}$			10	μA
Gate-to-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 6\text{V}, V_{CE}=0\text{V}$			± 10	μA
Gate-to-Emitter Threshold Voltage	$V_{GE(\text{off})}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	0.4		1.0	V
Collector-to-Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=150\text{A}, V_{GE}=4\text{V}$		3.8	5	V
Input Capacitance	C_{IES}	$V_{CE}=10\text{V}, f=1\text{MHz}$		5100		pF
Output Capacitance	C_{OES}			59		pF
Reverse Transfer Capacitance	C_{RES}			43		pF
Fall Time	t_f	$I_C=150\text{A}, V_{CC}=320\text{V}, \text{Resistor load } V_{GE}=4\text{V}, R_G=36\Omega$		270		ns

Fig1 Large Current R Load Switching Circuit



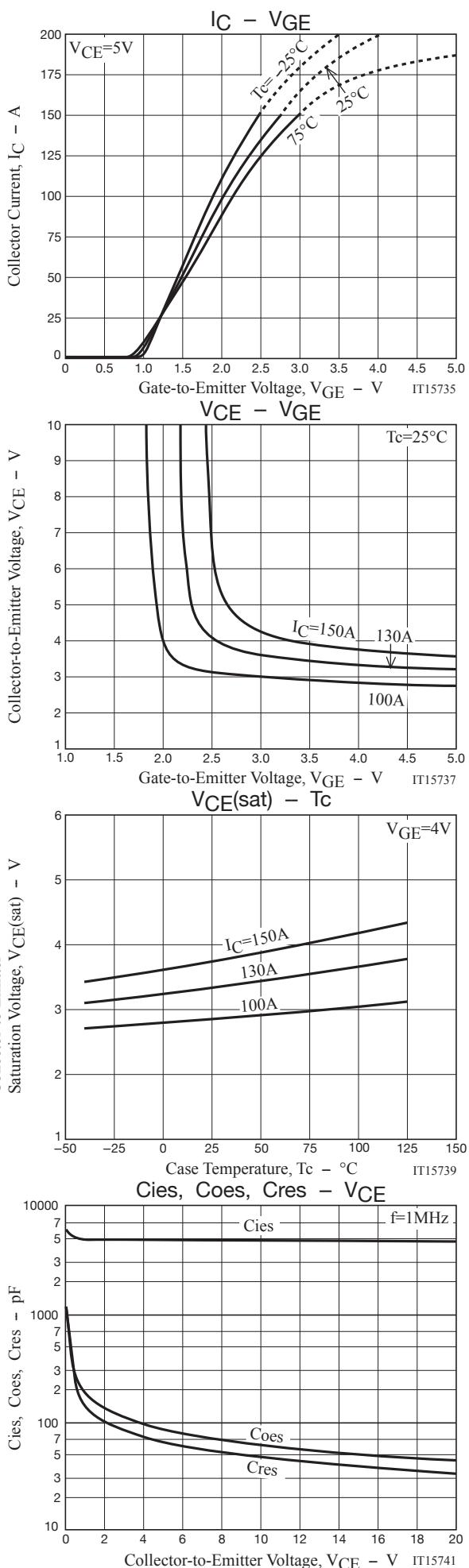
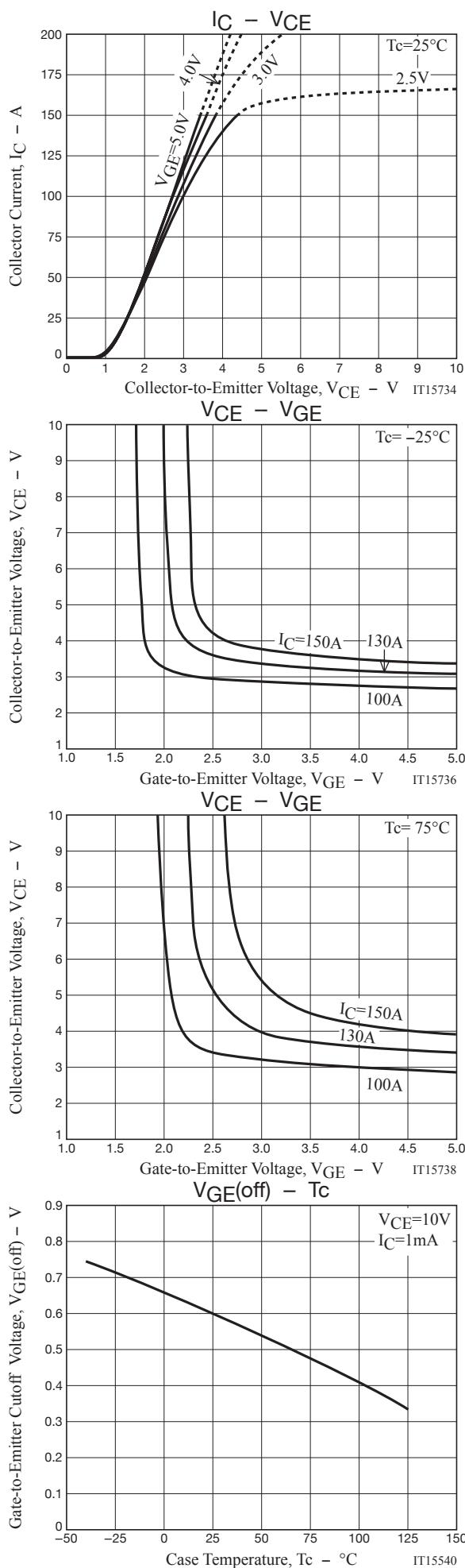
Note1. Gate Series Resistance $R_G \geq 36\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv/dt \leq 1500/\mu\text{s}$ is satisfied at customer's actual set evaluation, $R_G < 36\Omega$ can also be used.

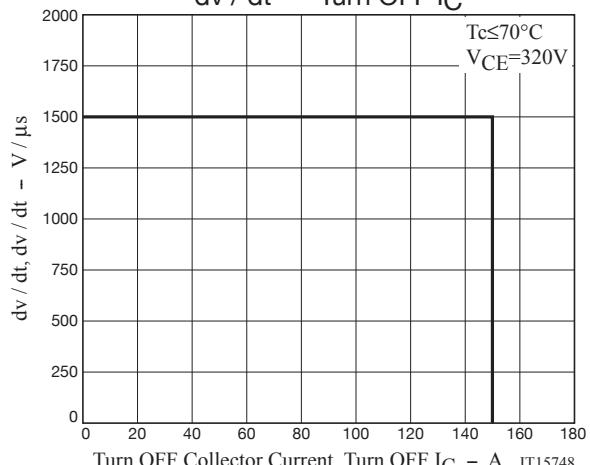
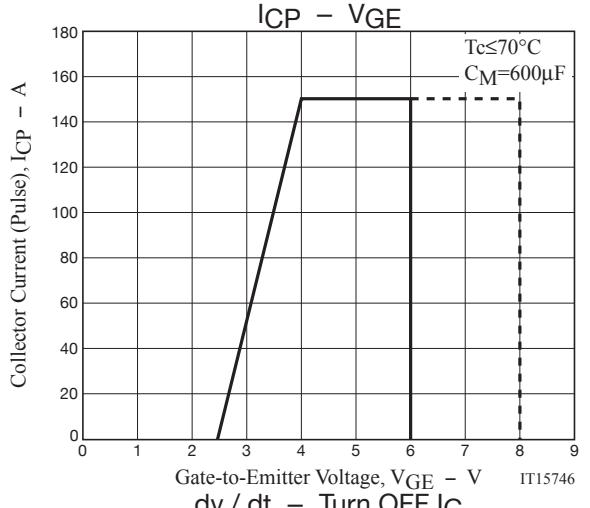
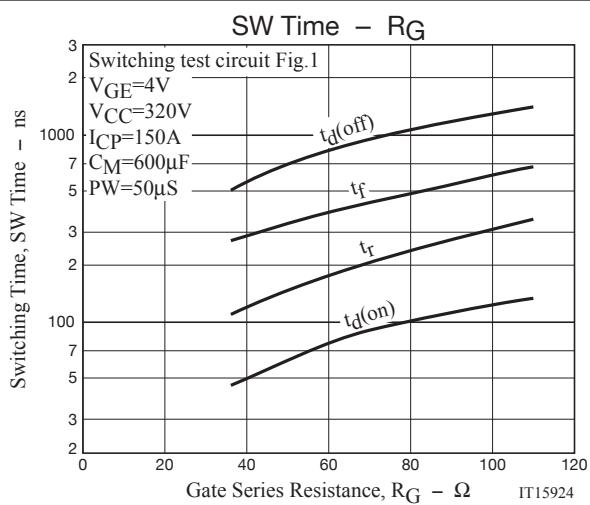
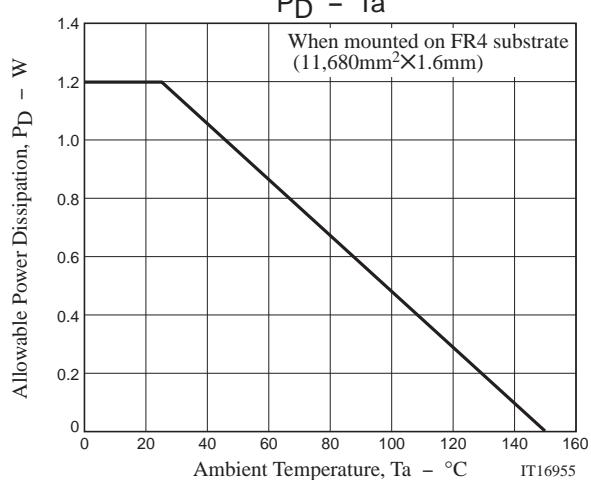
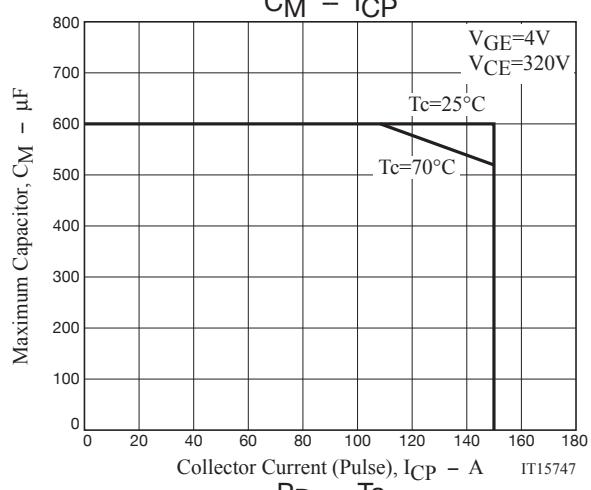
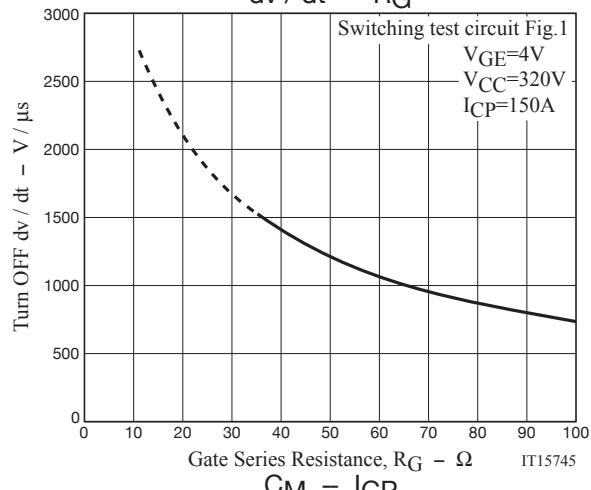
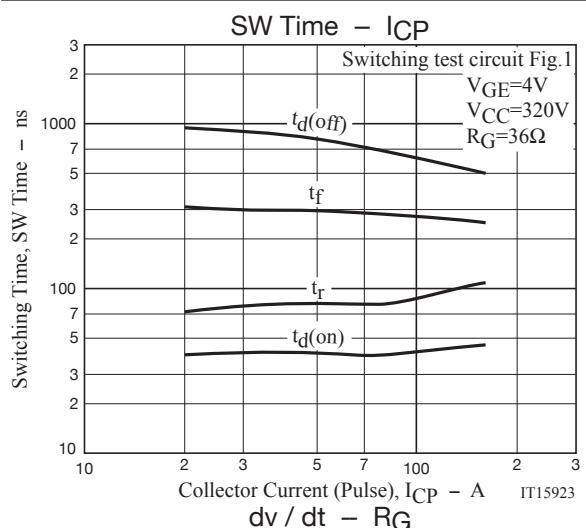
Note2. The collector voltage gradient dv/dt must be smaller than $1500\text{V}/\mu\text{s}$ to protect the device when it is turned off.

Ordering Information

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

TIG067SS

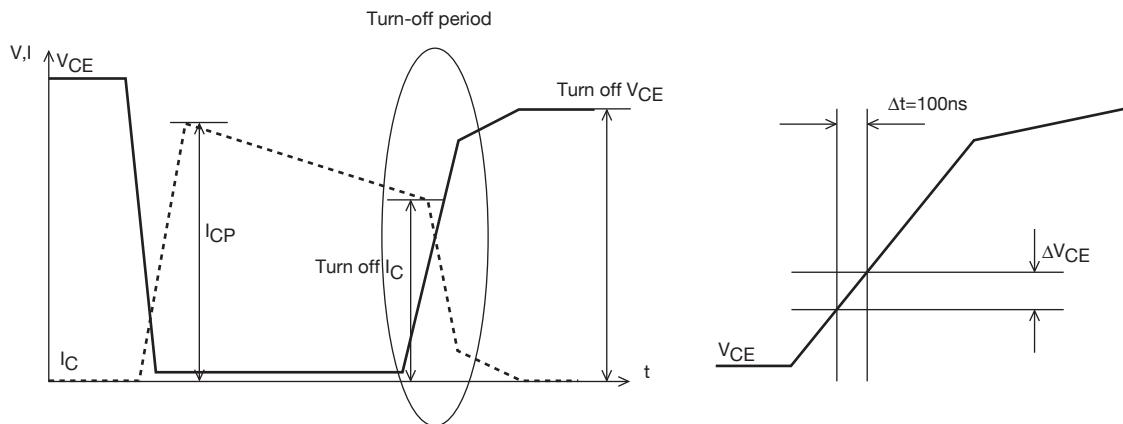




Definition of dv/dt

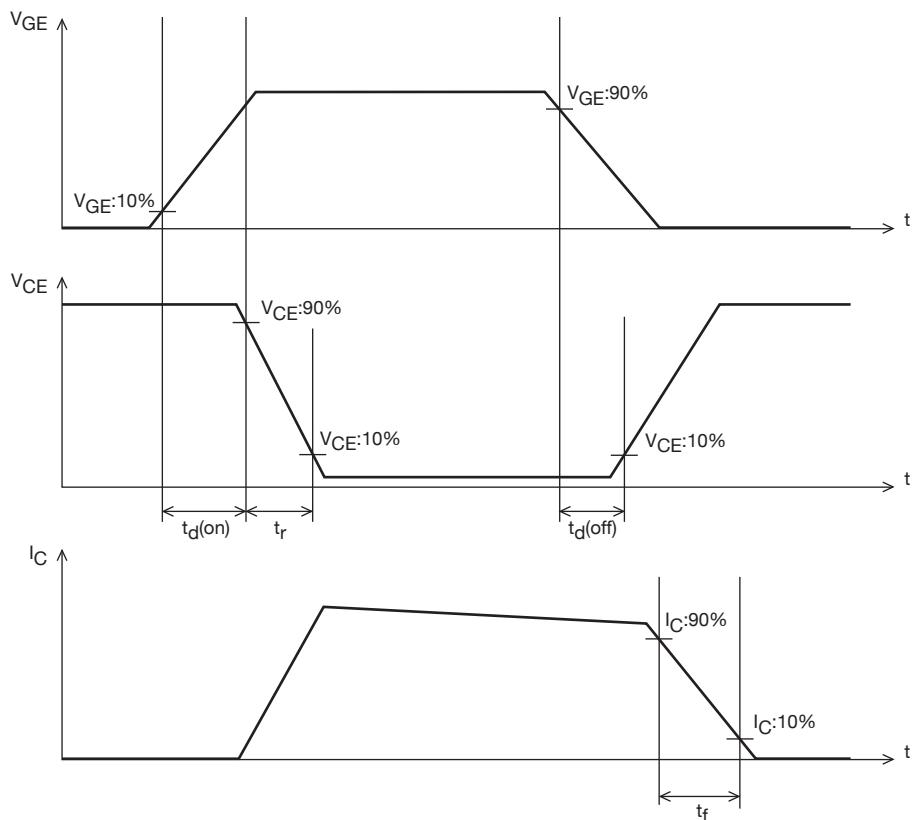
dv/dt is defined as the maximum slope of the below V_{CE} curve during turn-off period.
 $dv/dt = \Delta V_{CE}/\Delta t = \Delta V_{CE}/100\text{ns}$

Overall waveform



Enlarged picture of turn-off period

Definition of Switching Time

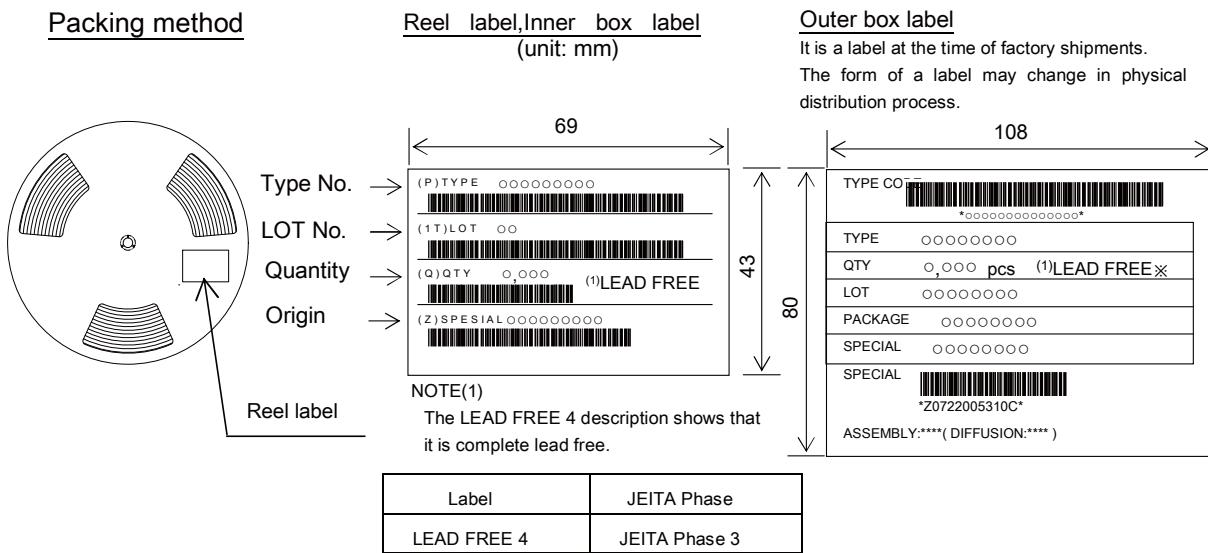


Taping Specification

TIG067SS-TL-2W

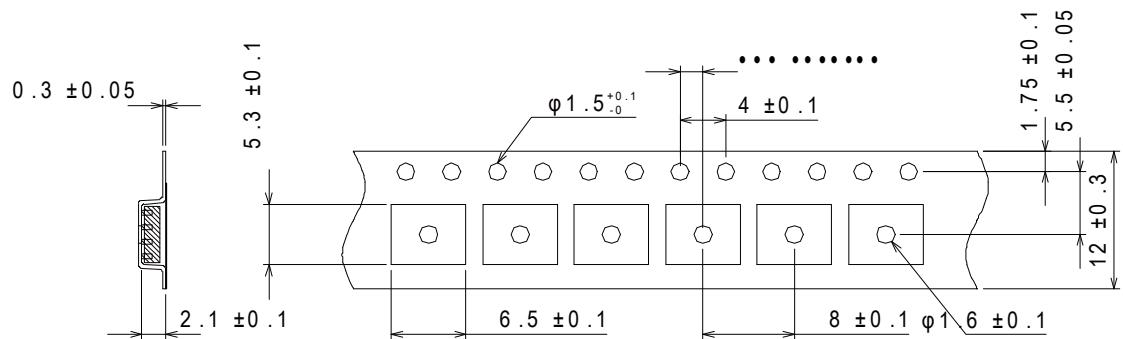
1. Packing Format

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

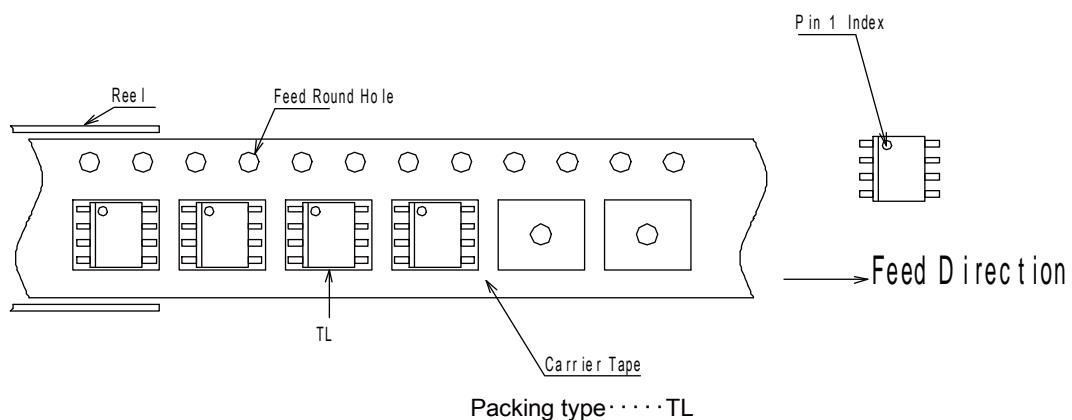


2. Taping configuration

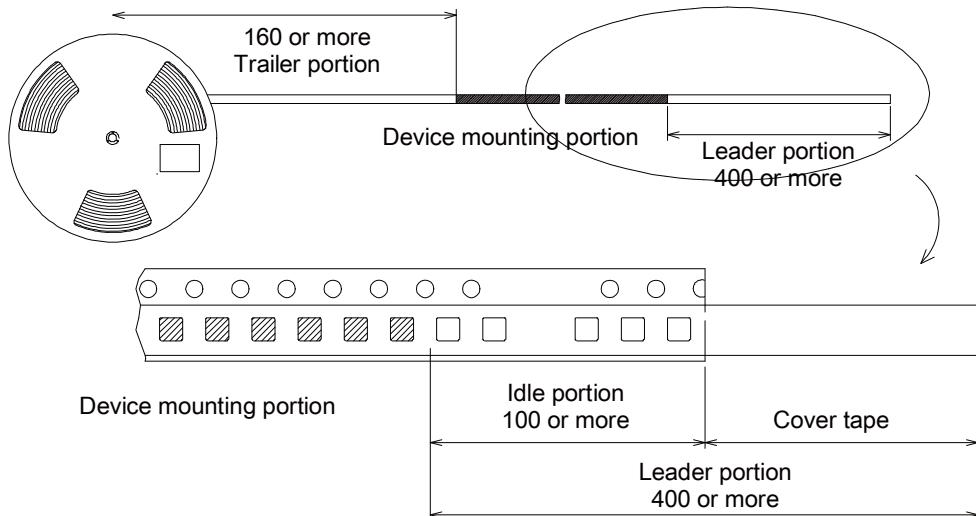
2-1. Carrier tape size (unit: mm)



2-2. Device placement direction

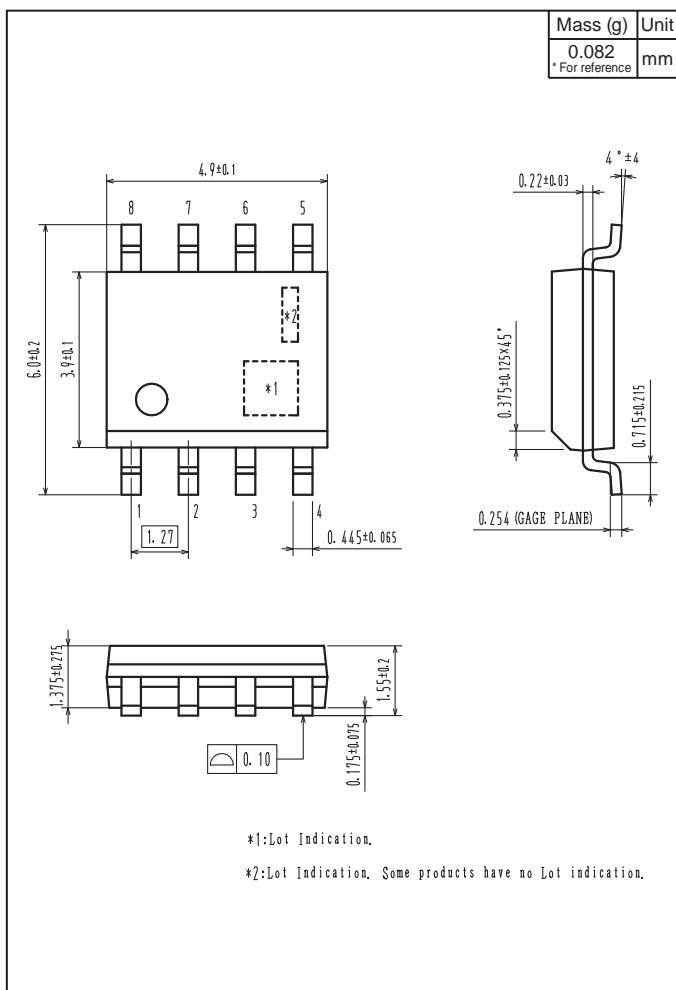


2-3. Leader portion and trailer portion (unit: mm)

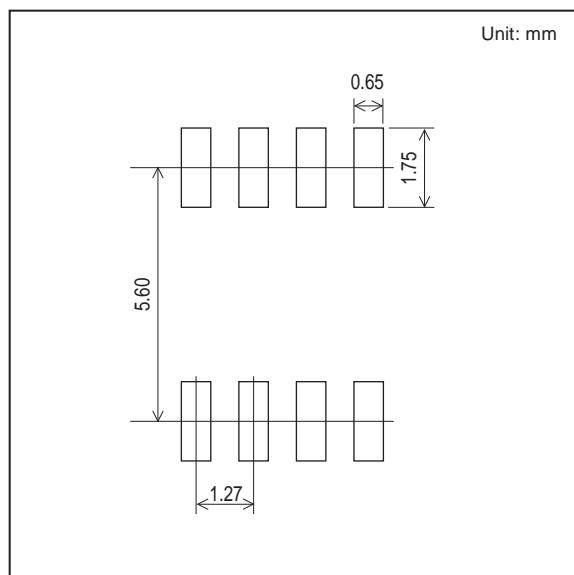


Outline Drawing

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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