



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

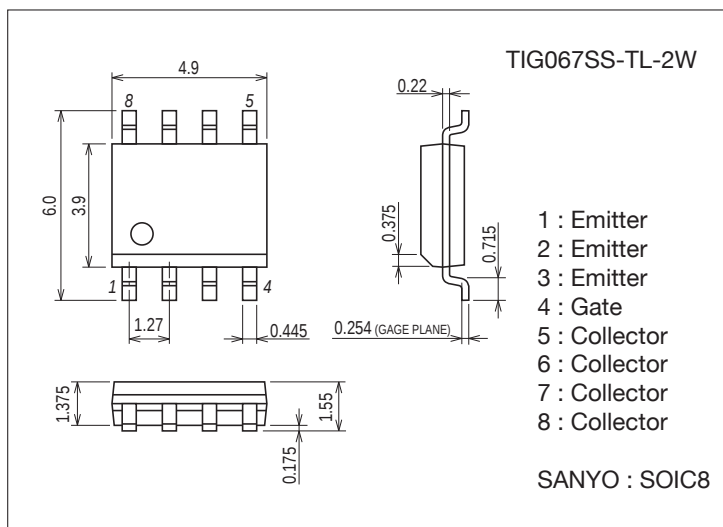
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage (DC)	V _{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 Tch=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)

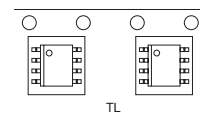
7072-002



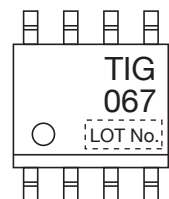
Product & Package Information

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

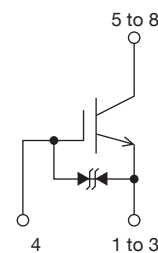
Packing Type: TL



Marking



Electrical Connection

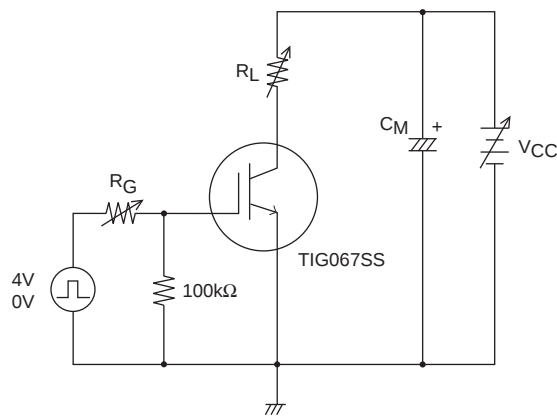


TIG067SS

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

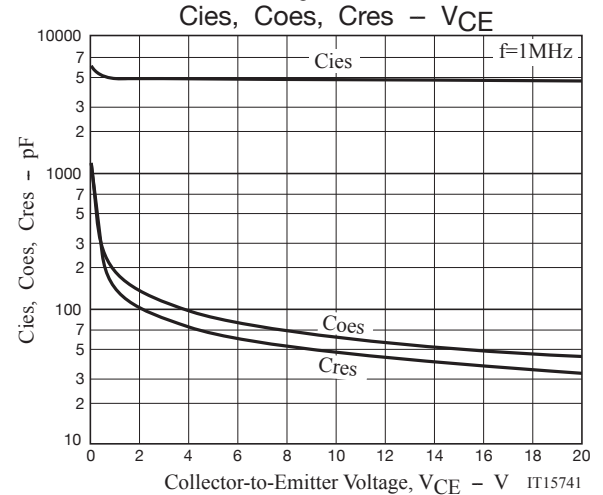
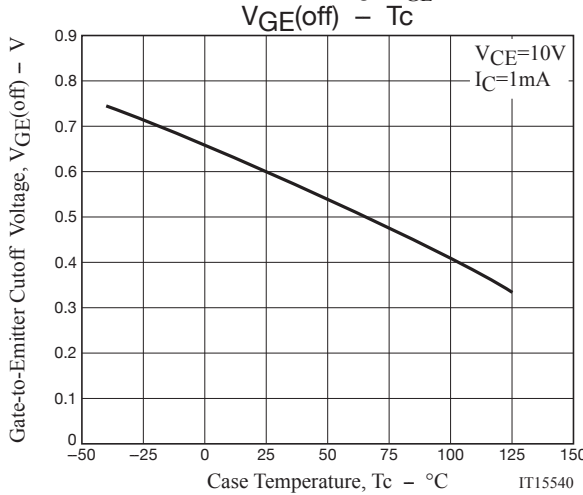
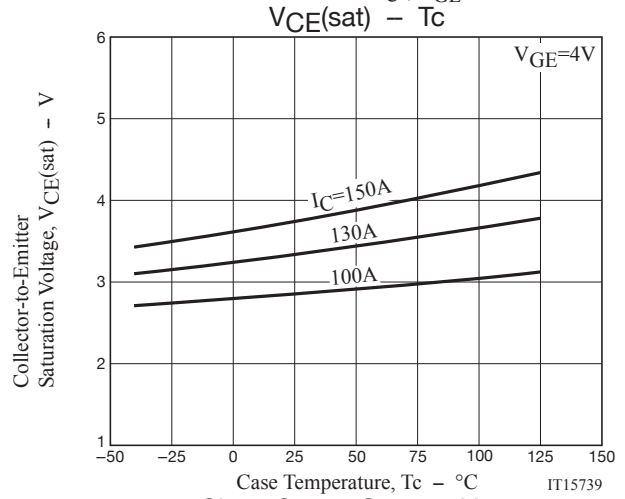
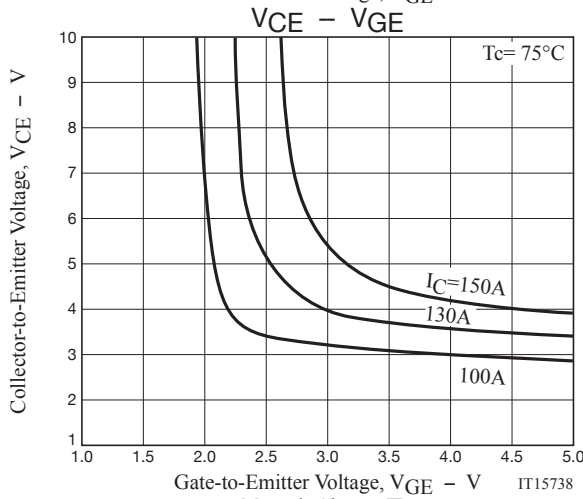
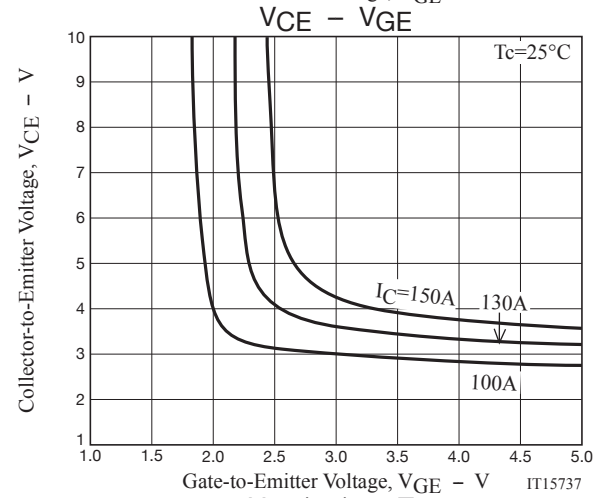
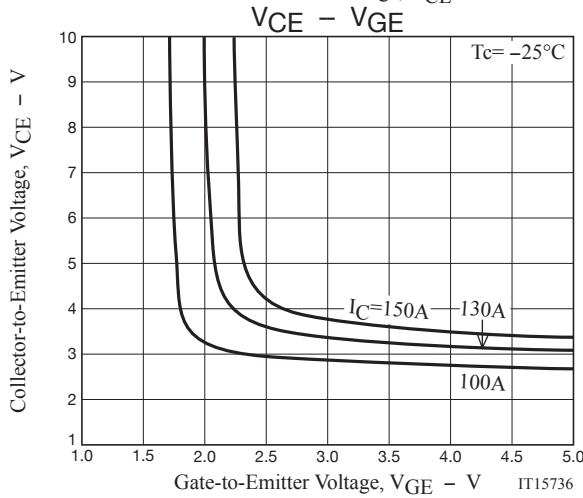
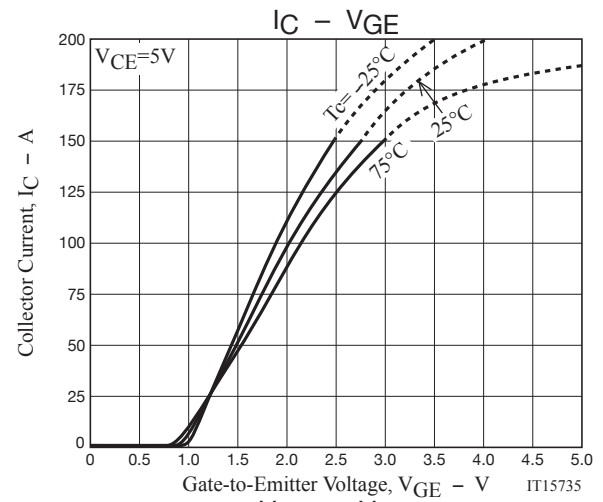
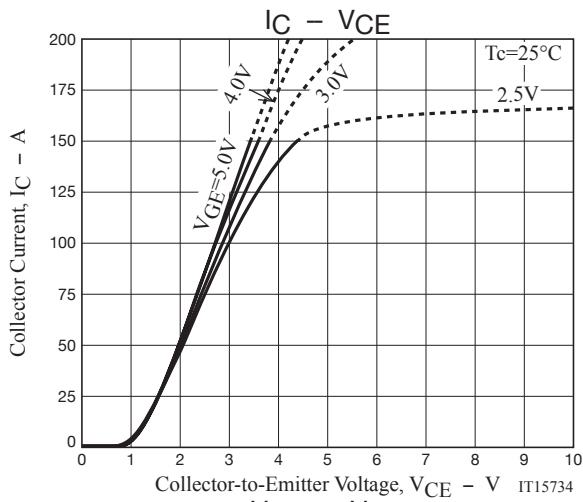


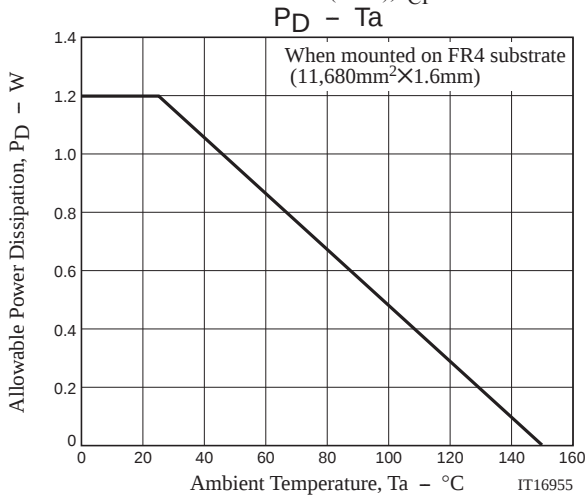
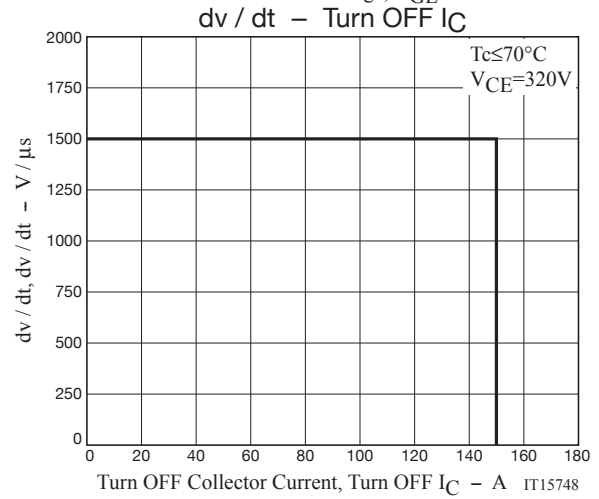
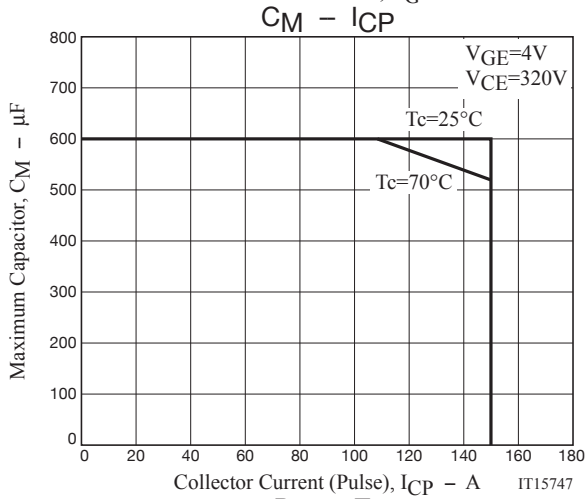
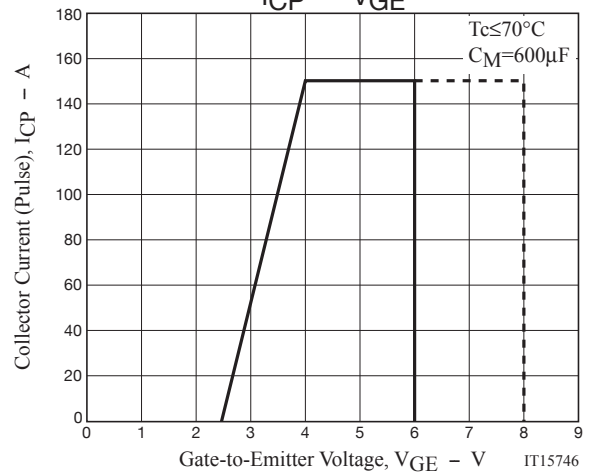
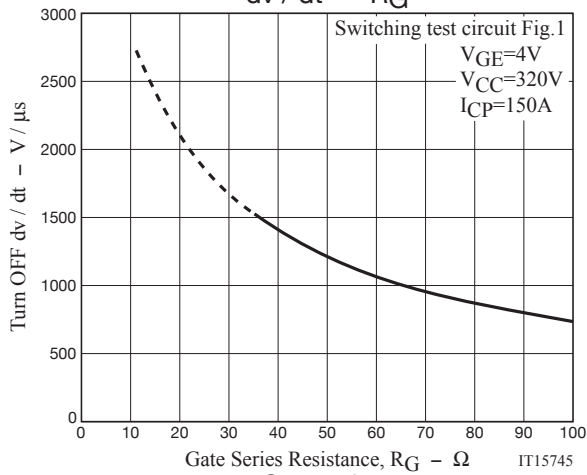
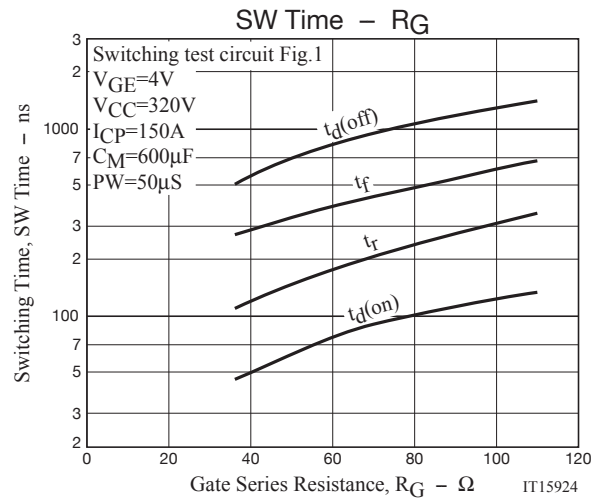
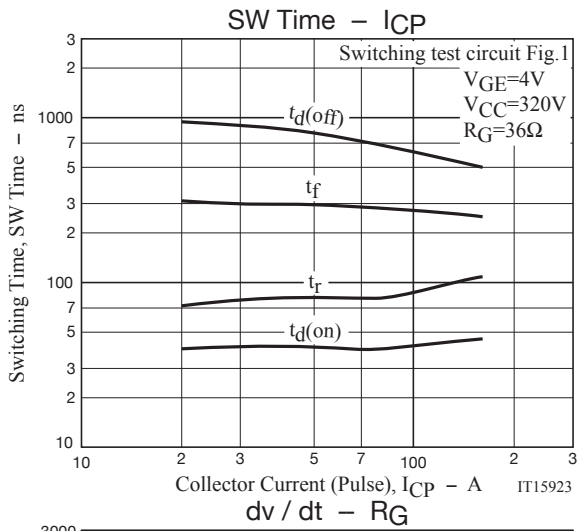
Note1. Gate Series Resistance $R_G \geq 36\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv / dt \leq 1500 / \mu s$ is satisfied at customer's actual set evaluation, $R_G < 36\Omega$ can also be used.

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



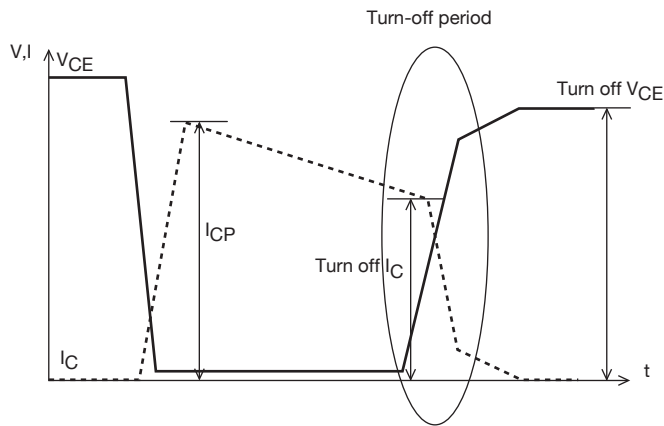


Definition of dv/dt

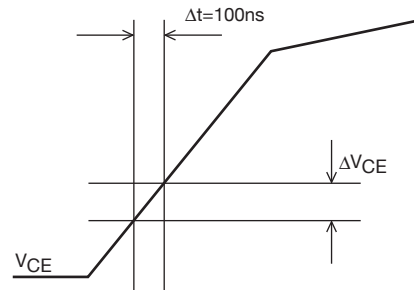
dv/dt is defined as the maximum slope of the below V_{CE} curve during turn-off period.

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

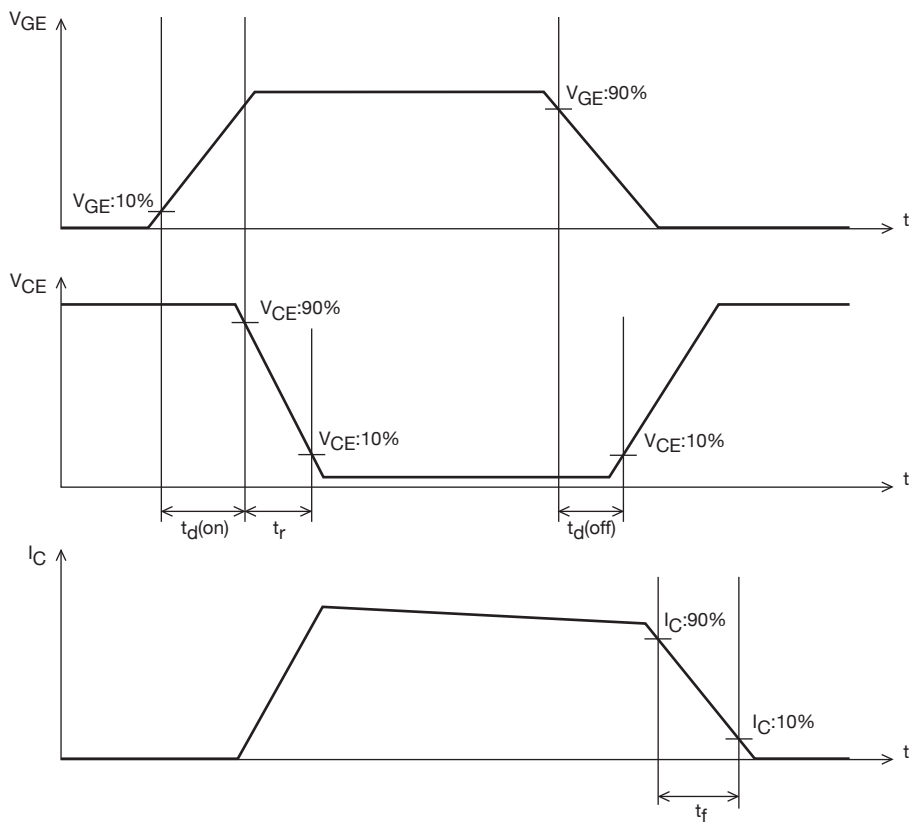
Overall waveform



Enlarged picture of turn-off period

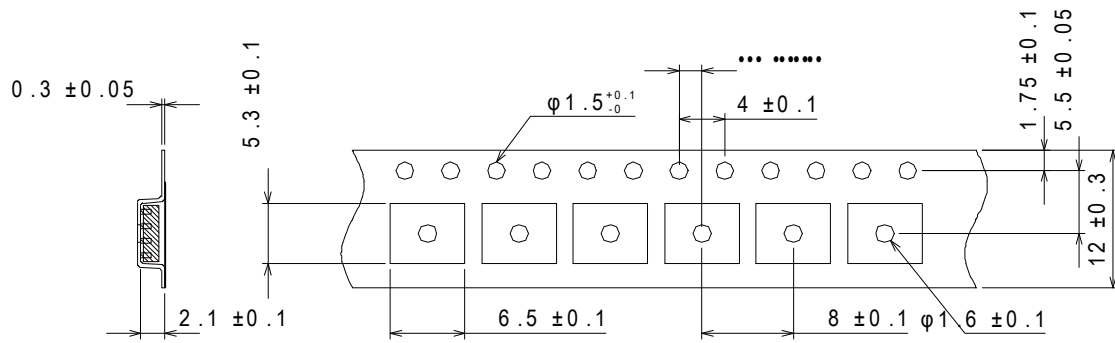


Definition of Switching Time

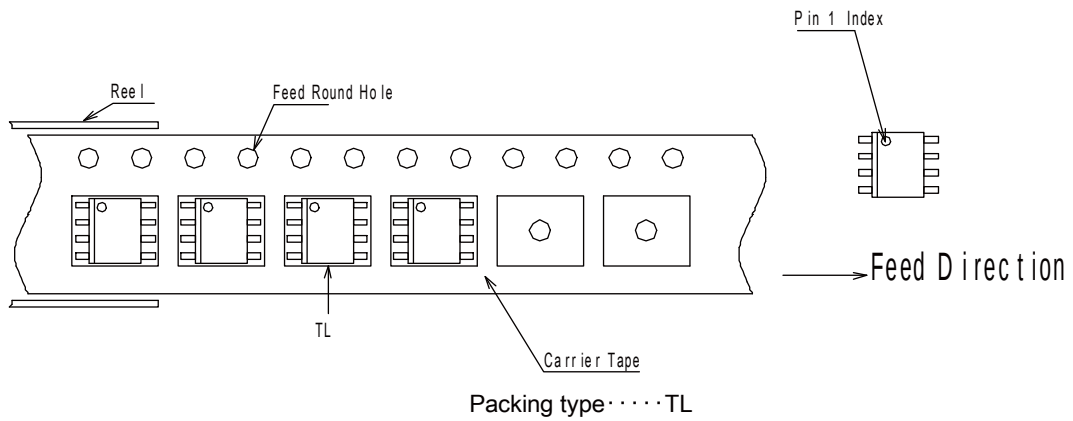


2. Taping configuration

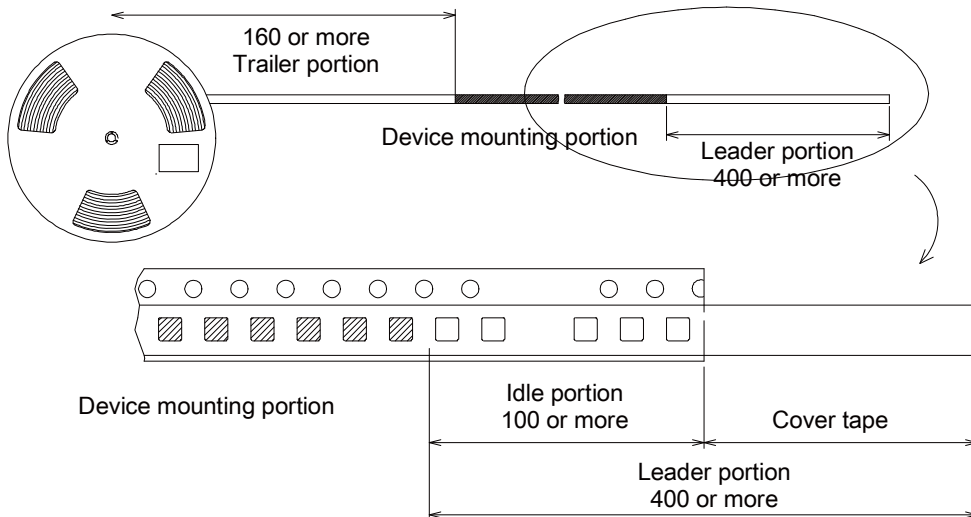
2-1. Carrier tape size (unit: mm)



2-2. Device placement direction

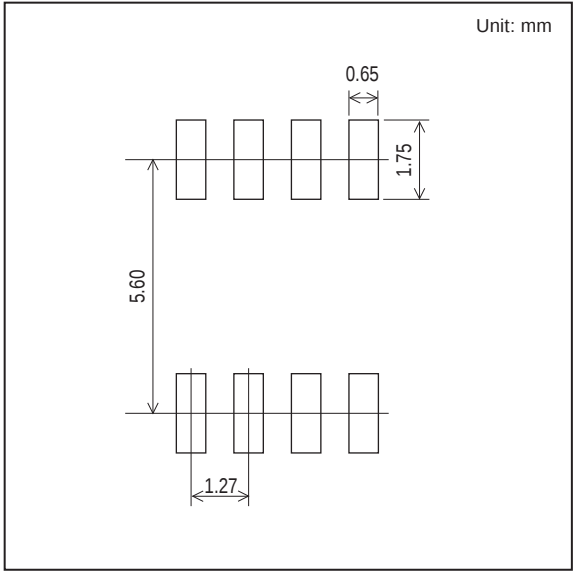
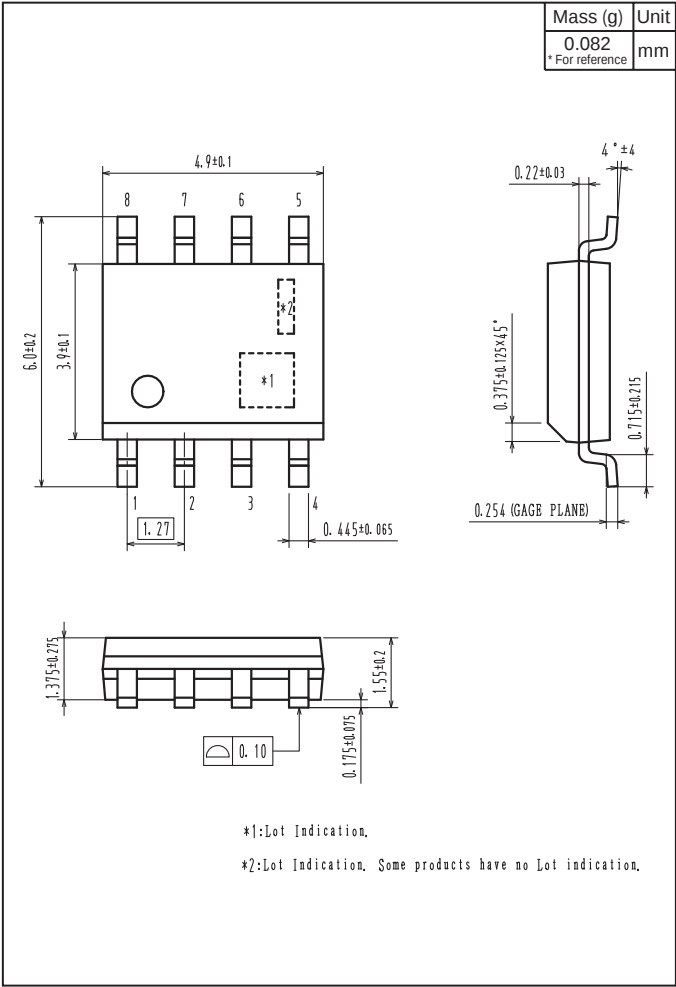


2-3. Leader portion and trailer portion (unit: mm)



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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