



TIG067SS

N-Channel IGBT 400V, 150A, VCE(sat);3.8V Single SOIC8

ON Semiconductor®

<http://onsemi.com>

Features

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

Specifications

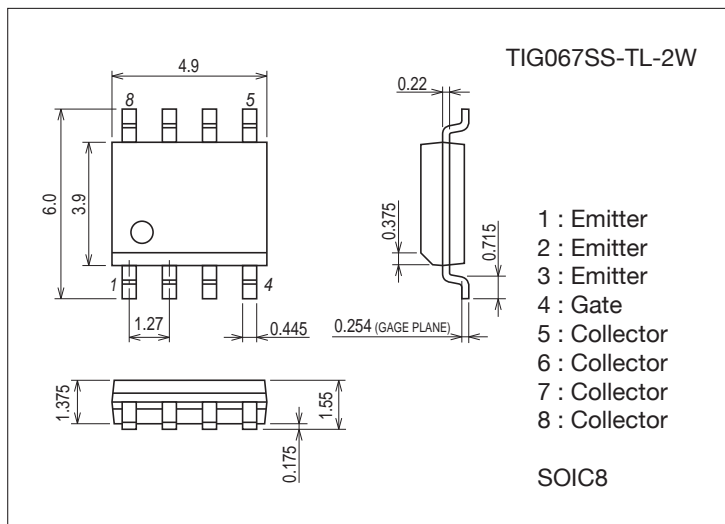
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage (DC)	V _{CE} S		400	V
Collector-to-Emitter Voltage (Pulse)	V _{CE} SP	PW≤1ms	450	V
Gate-to-Emitter Voltage (DC)	V _{GES}		±6	V
Gate-to-Emitter Voltage (Pulse)	V _{GES} P	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

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

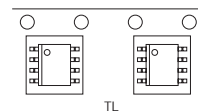
unit : mm (typ)
7072-002



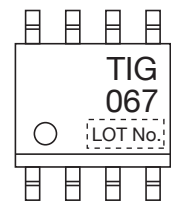
Product & Package Information

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

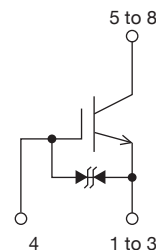
Packing Type: TL



Marking



Electrical Connection

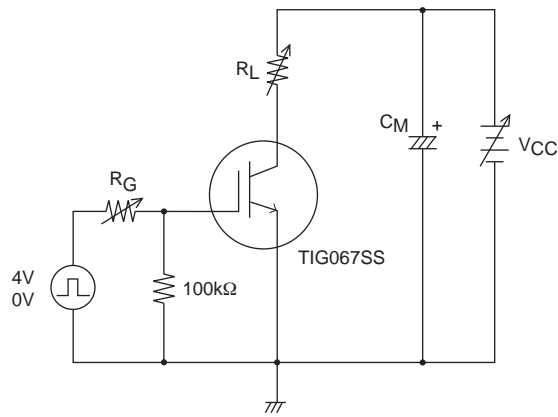


TIG067SS

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

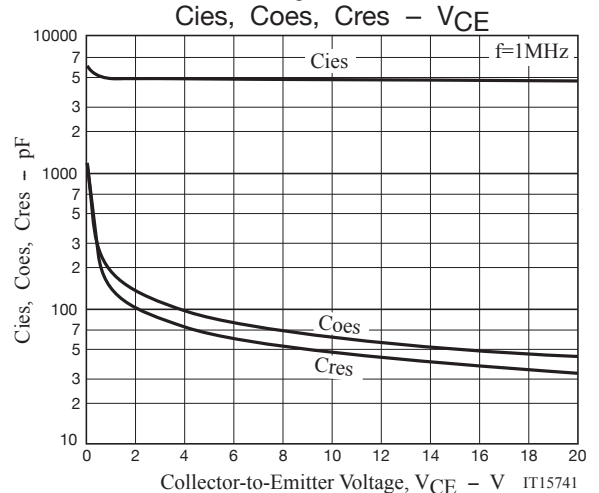
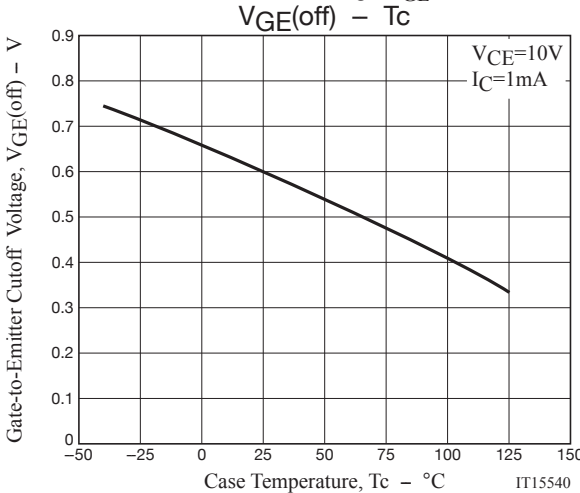
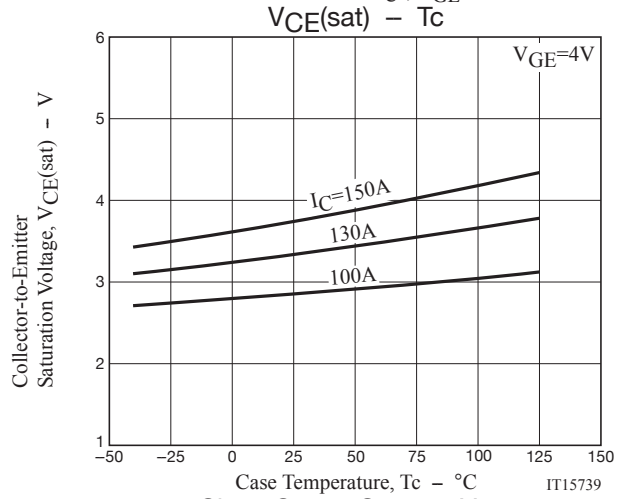
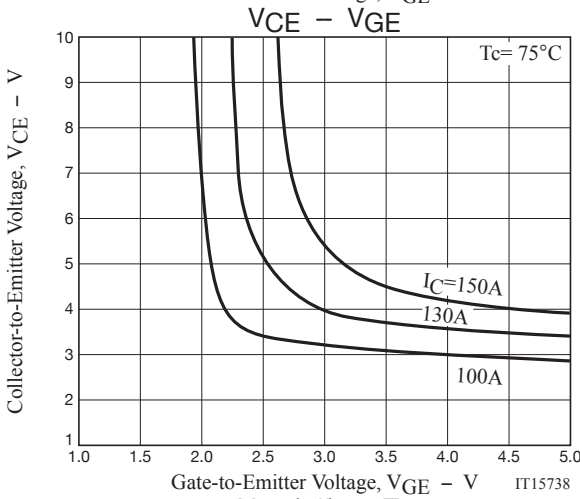
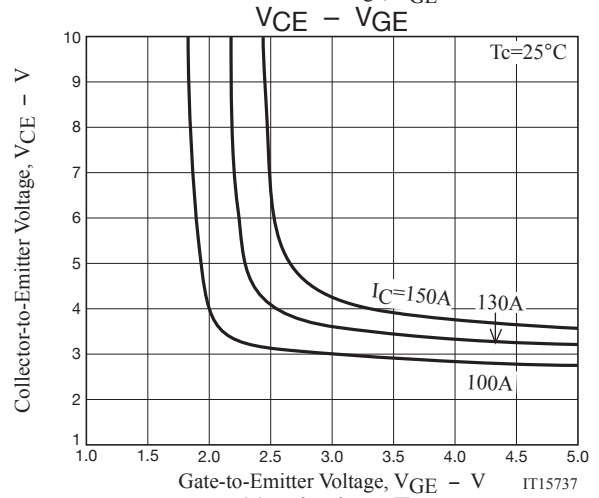
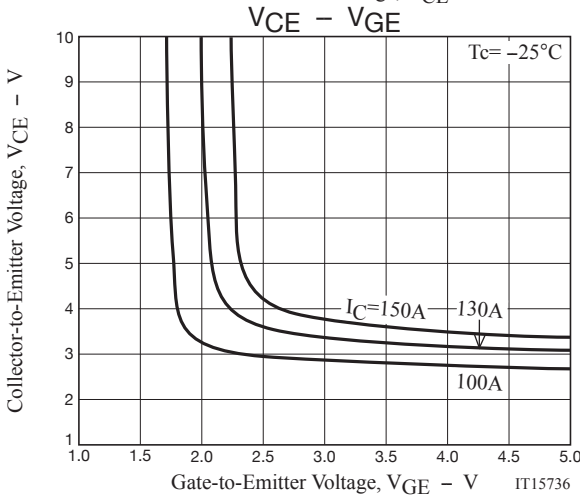
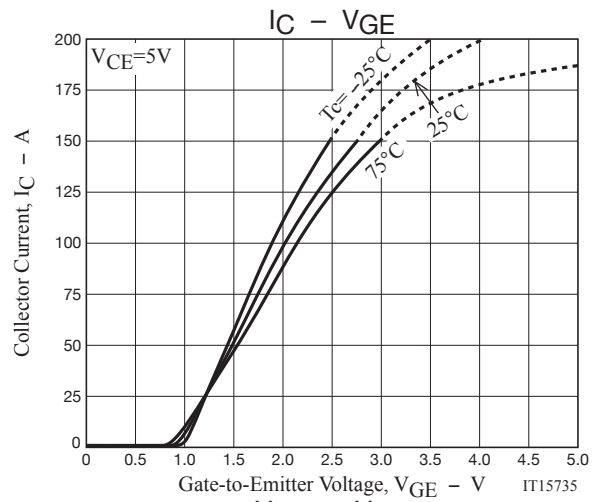
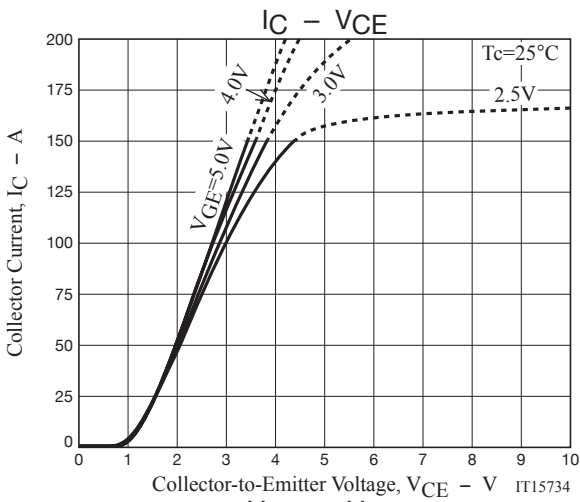


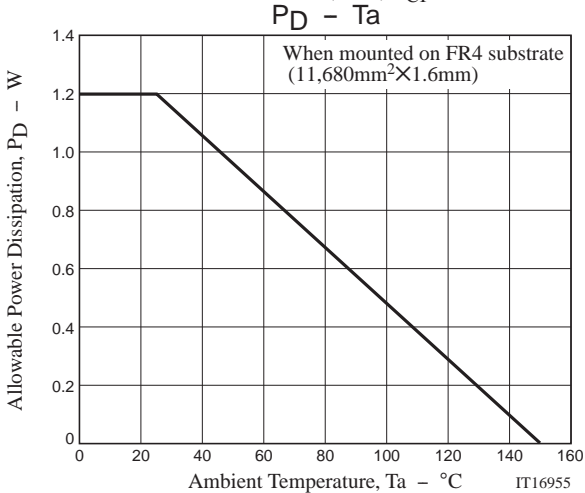
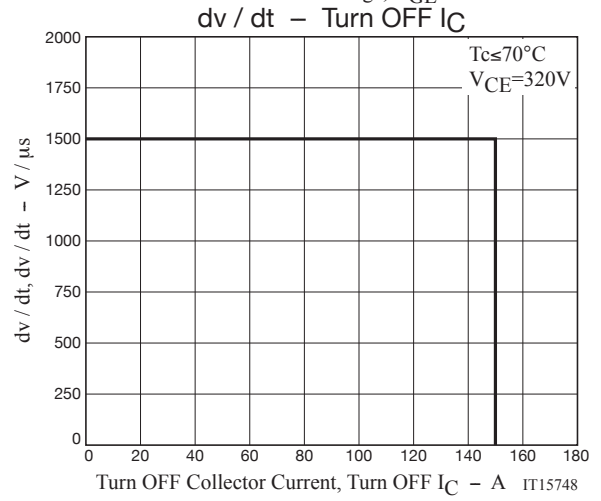
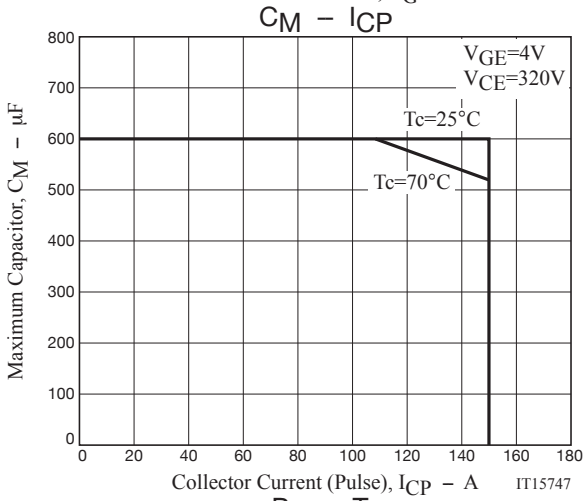
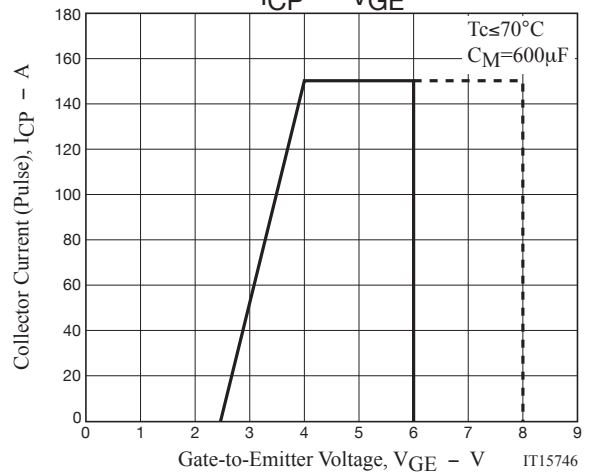
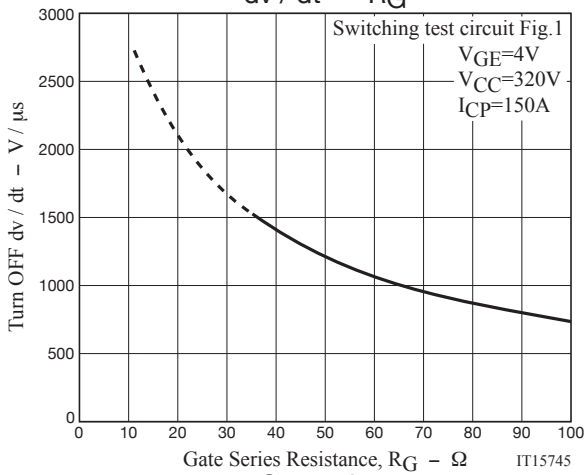
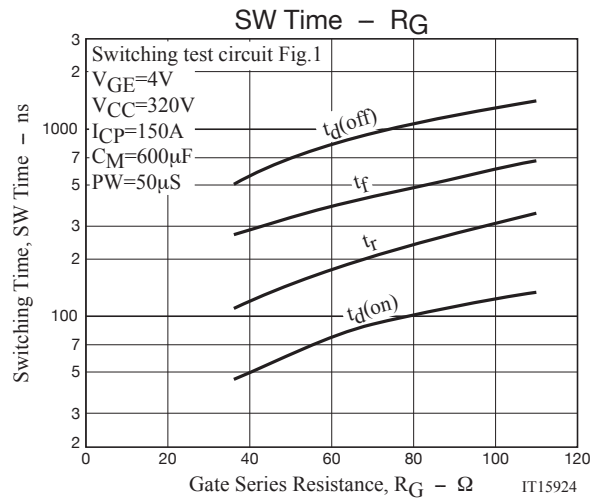
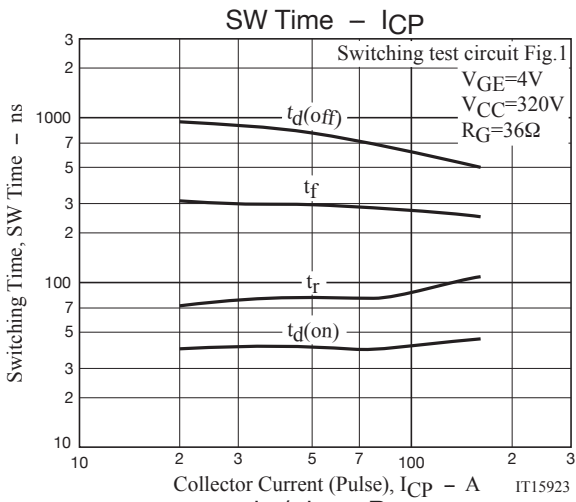
Note1. Gate Series Resistance $R_G \geq 36\Omega$ is recommended for protection purpose at the time of turn OFF. However, if $dv / dt \leq 1500 / \mu s$ is satisfied at customer's actual set evaluation, $R_G < 36\Omega$ can also be used.

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





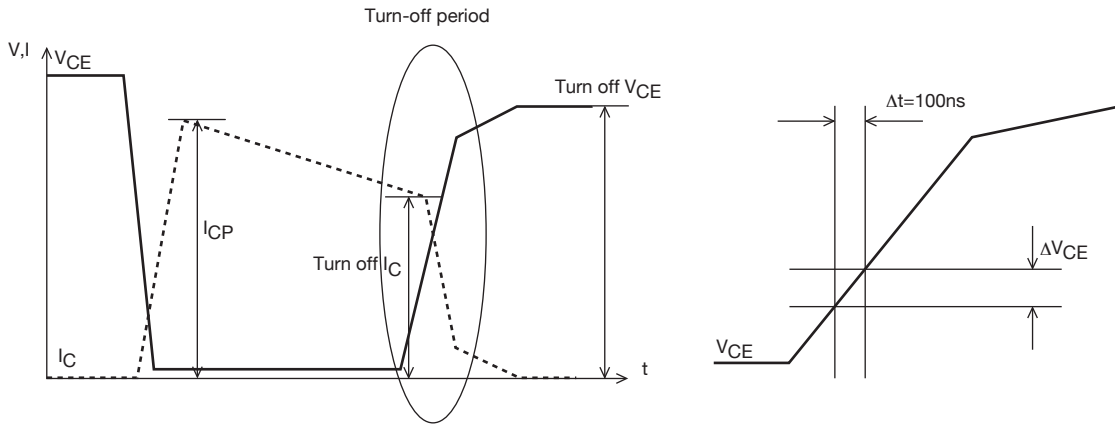
Definition of dv/dt

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

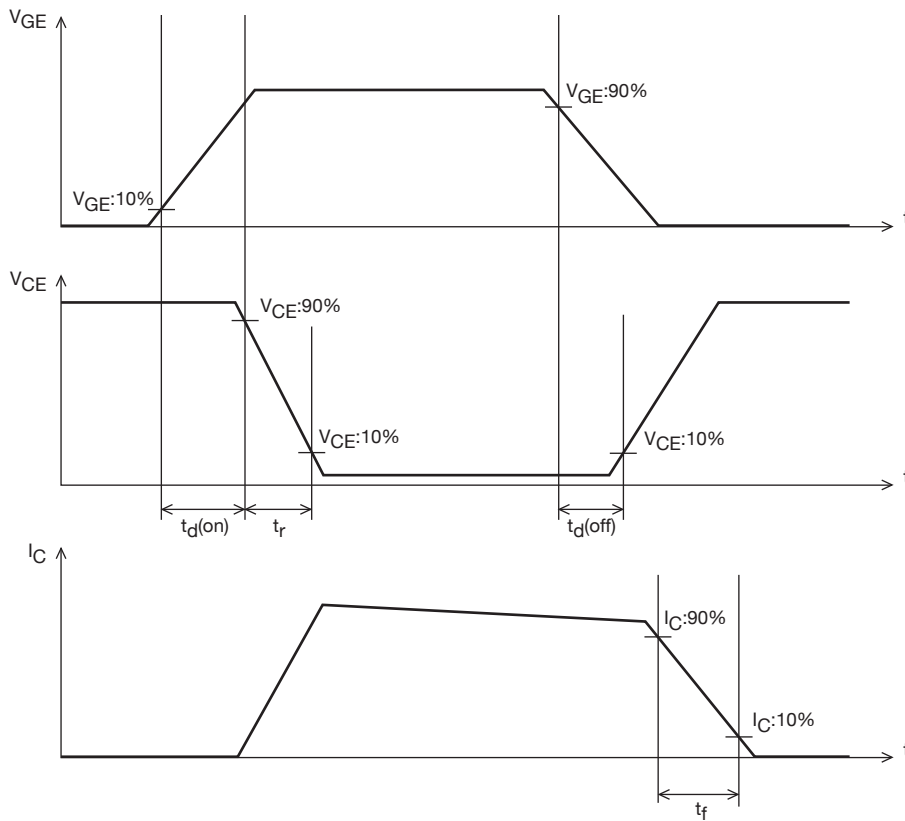
$$dv/dt = \Delta V_{CE} / \Delta t = \Delta V_{CE} / 100ns$$

Overall waveform

Enlarged picture of turn-off period



Definition of Switching Time



Taping Specification

TIG067SS-TL-2W

1. Packing Format

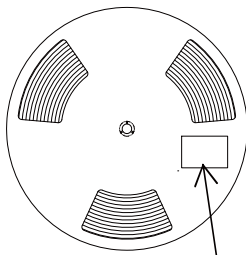
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX W206-112	Outer BOX W207-124
SOIC8	B202-101	2,500	12,500	25,000	5 reels contained Dimensions :mm(external) 340×95×340	2 inner boxes contained Dimensions :mm(external) 360×210×375

Packing method

Reel label, Inner box label
(unit: mm)

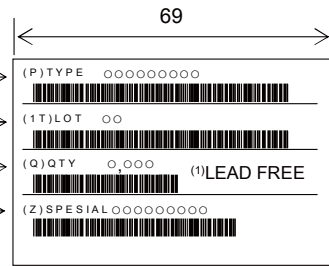
Outer box label

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



Type No. →
LOT No. →
Quantity →
Origin →

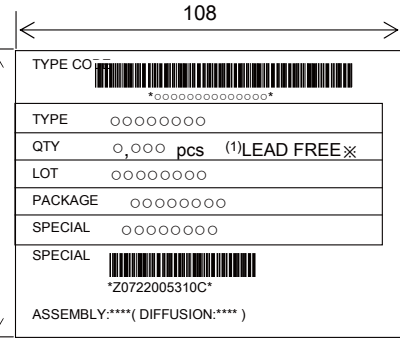
Reel label



NOTE(1)

The LEAD FREE 4 description shows that it is complete lead free.

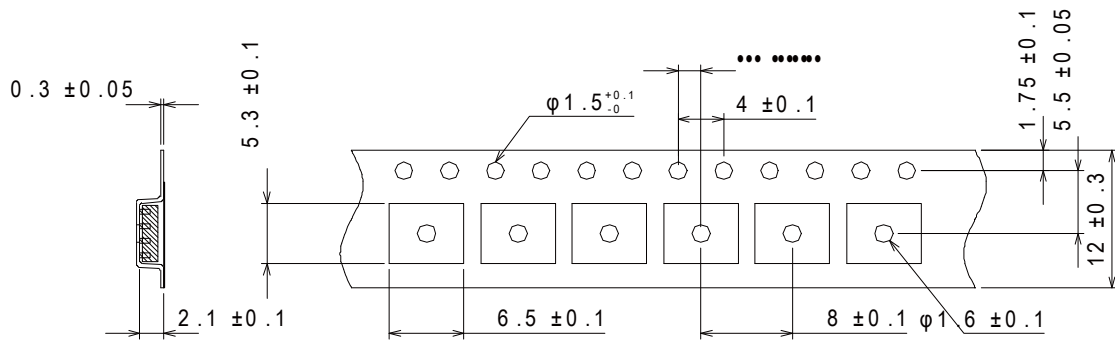
43
80



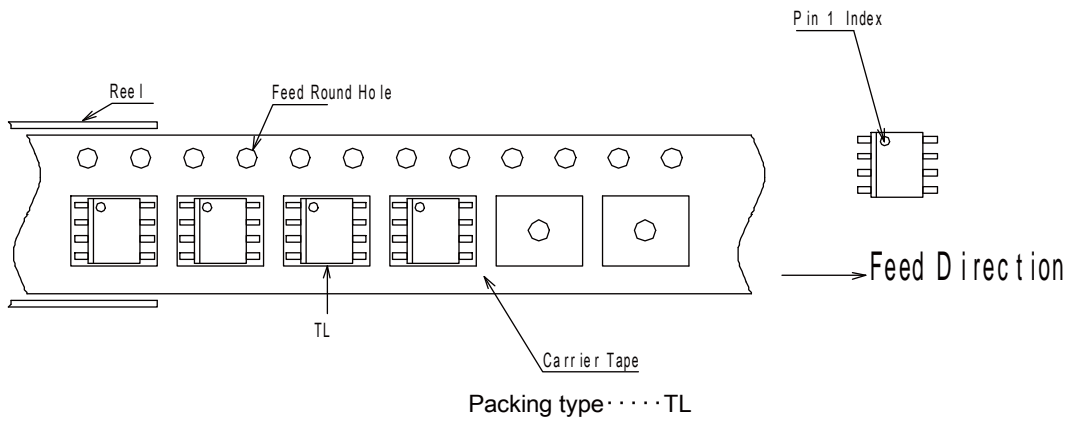
Label	JEITA Phase
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

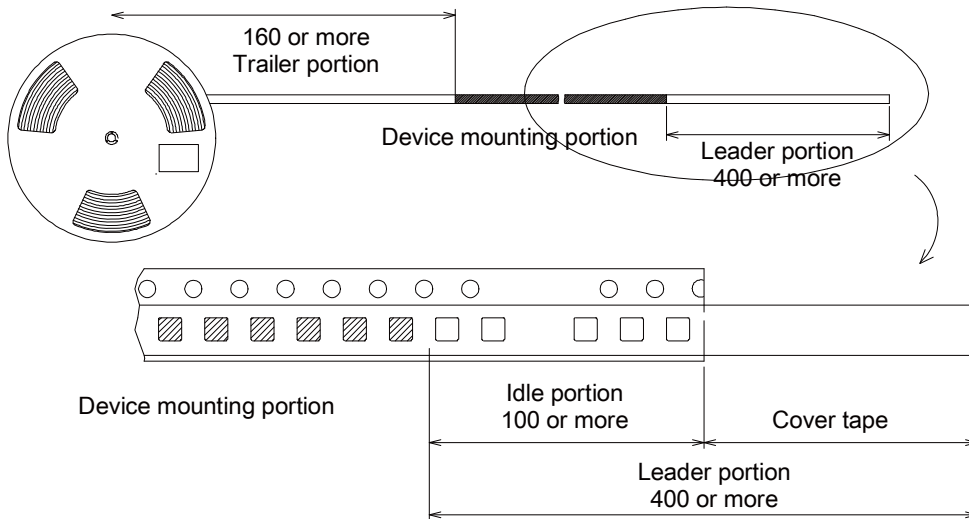
2-1. Carrier tape size (unit: mm)



2-2. Device placement direction

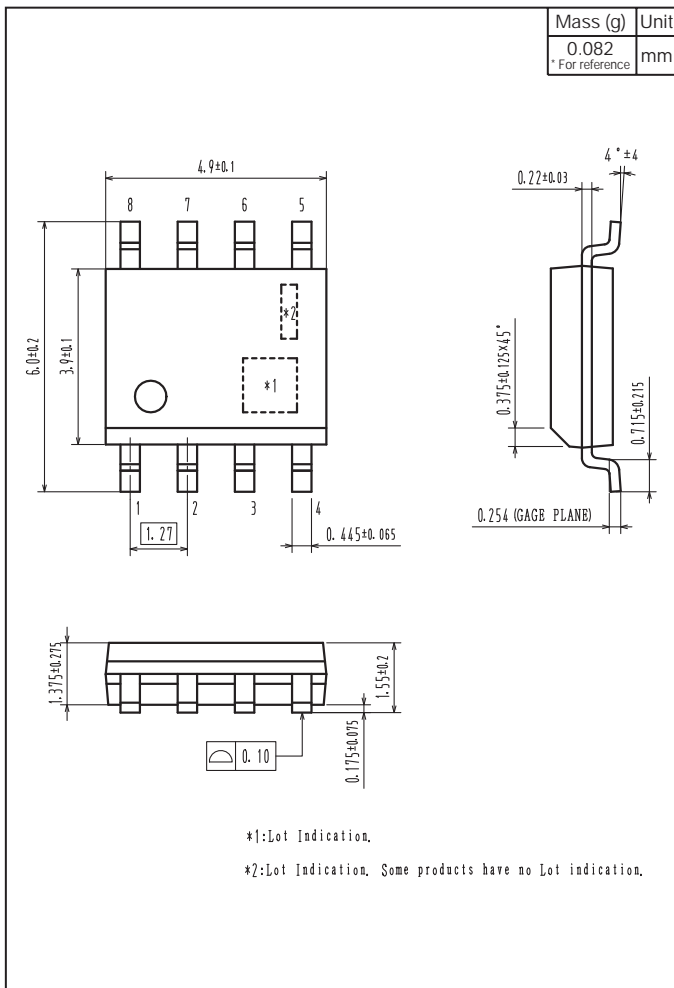


2-3. Leader portion and trailer portion (unit: mm)

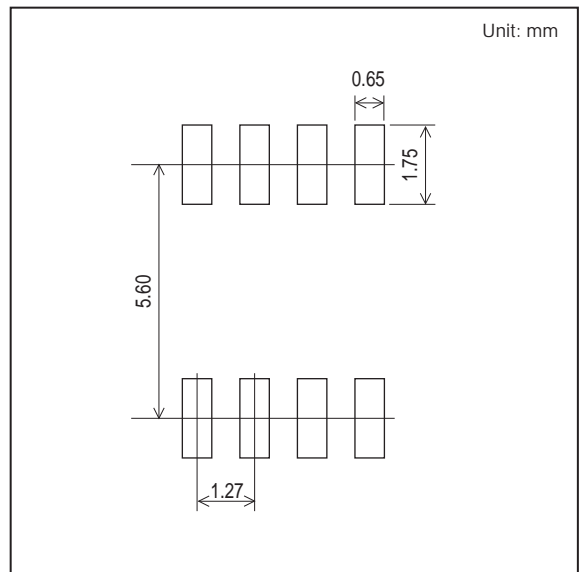


TIG067SS

Outline Drawing TIG067SS-TL-2W



Land Pattern Example



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