

TIG065E8 — N-Channel IGBT

Light-Controlling Flash Applications

Features

- Low-saturation voltage
- Enhancement type
- Mounting Height 0.9mm, Mounting Area 8.12mm²
- Halogen free compliance
- Low voltage drive (2.5V)
- Built-in Gate-to-Emitter protection diode
- dv / dt guarantee*

Specifications

Absolute Maximum Ratings at Ta=25°C

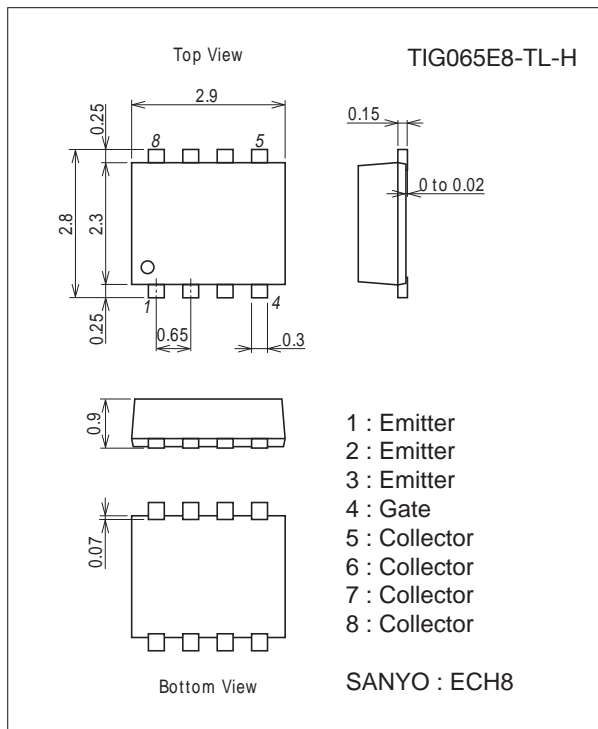
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Emitter Voltage	V _{CES}		400	V
Gate-to-Emitter Voltage (DC)	V _{GES}		±4	V
Gate-to-Emitter Voltage (Pulse)	V _{GES}	PW≤1ms	±5	V
Collector Current (Pulse)	I _{CP}	V _{GE} =2.5V, C _M =100μF	150	A
Maximum Collector-to-Emitter dv / dt	dv / dt	V _{CE} ≤320V, starting T _{ch} =25°C	400	V / μs
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-40 to +150	°C

* : Concerning dv / dt (slope of Collector Voltage at the time of Turn-OFF), will be 100% screen-detected in the circuit shown as Fig. 1.

Package Dimensions

unit : mm (typ)

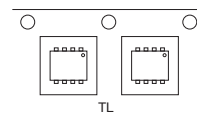
7011A-004



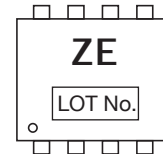
Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3000 pcs./reel

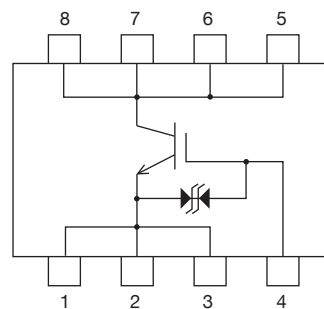
Packing Type: TL



Marking



Electrical Connection

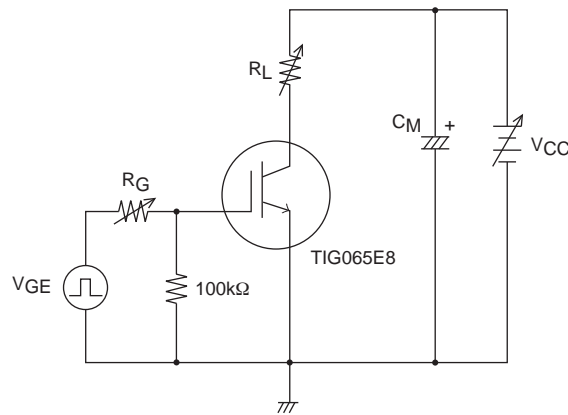


TIG065E8

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	μA	
Gate-to-Emitter Leakage Current	I_{GES}	$V_{GE}=\pm 4V, V_{CE}=0V$			± 10	μA	
Gate-to-Emitter Threshold Voltage	$V_{GE(off)}$	$V_{CE}=10V, I_C=1mA$	0.4		0.9	V	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100A, V_{GE}=2.5V$		4.2	7	V	
Input Capacitance	C_{ies}	$V_{CE}=10V, f=1MHz$		3100		pF	
Output Capacitance	C_{oes}				30		pF
Reverse Transfer Capacitance	C_{res}				23		pF

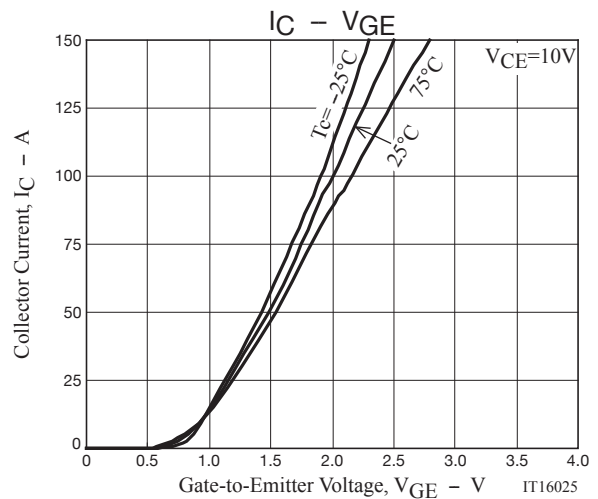
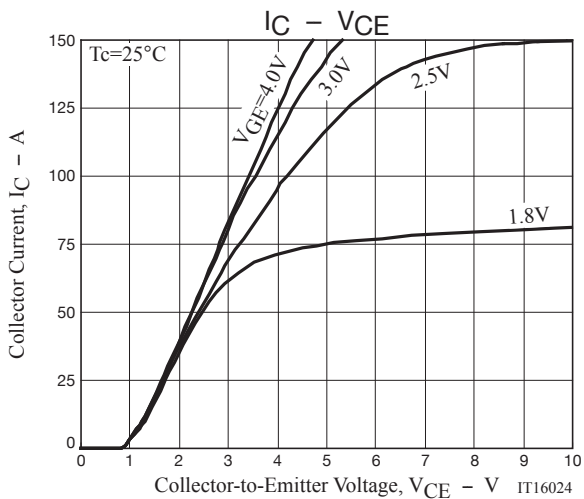
Fig.1 Large Current R Load Switching Circuit

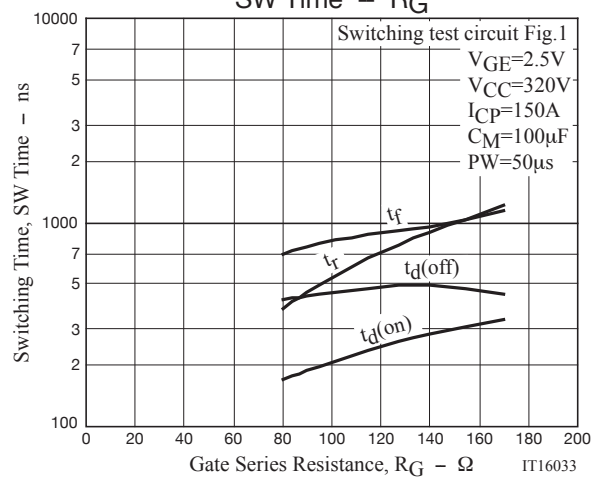
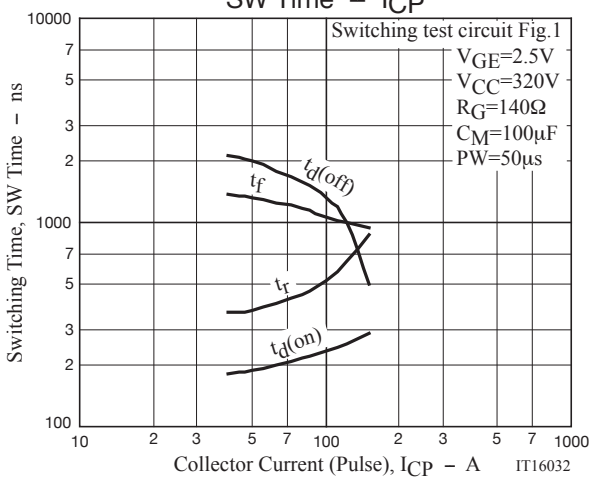
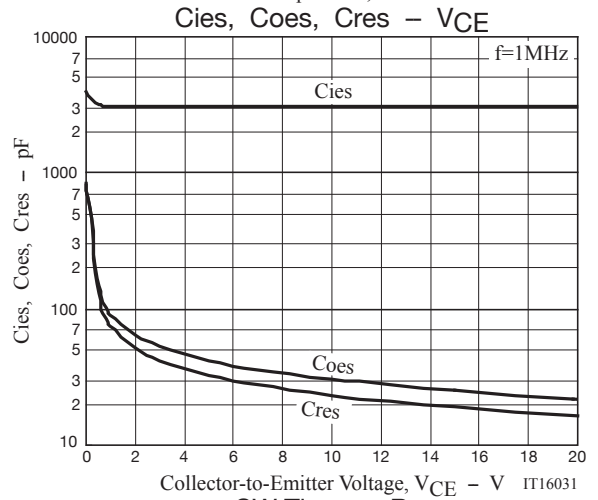
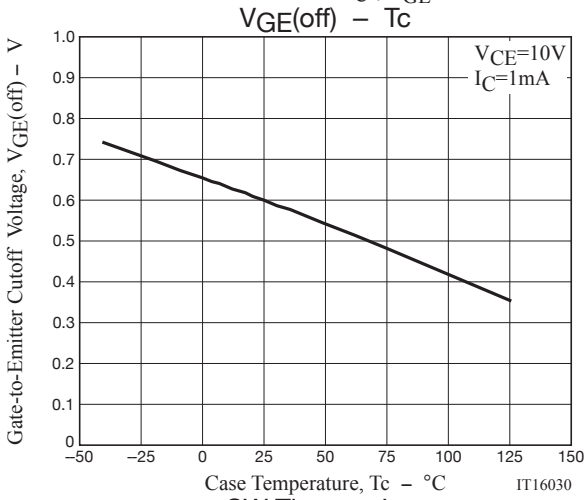
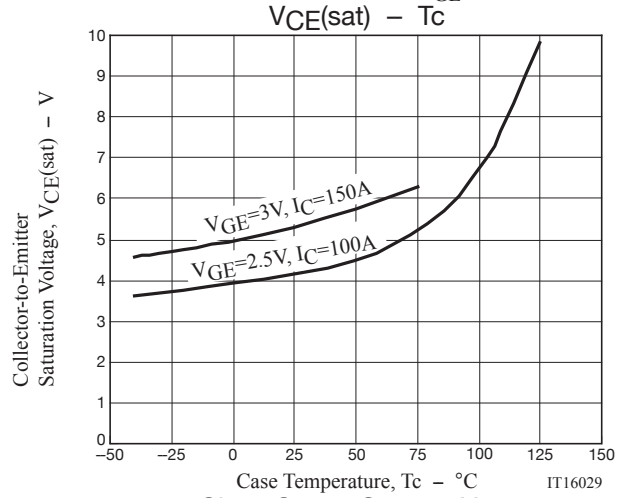
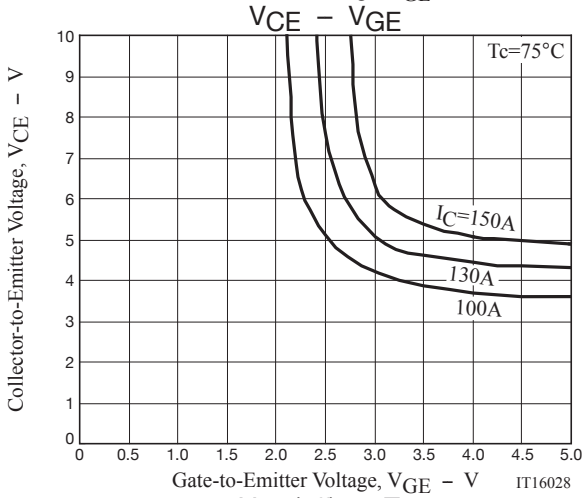
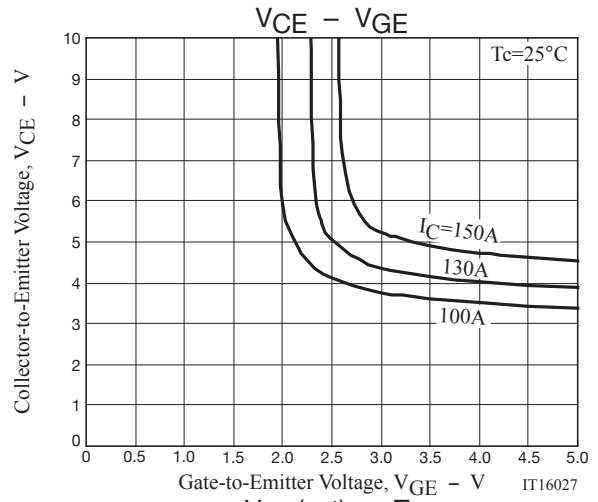
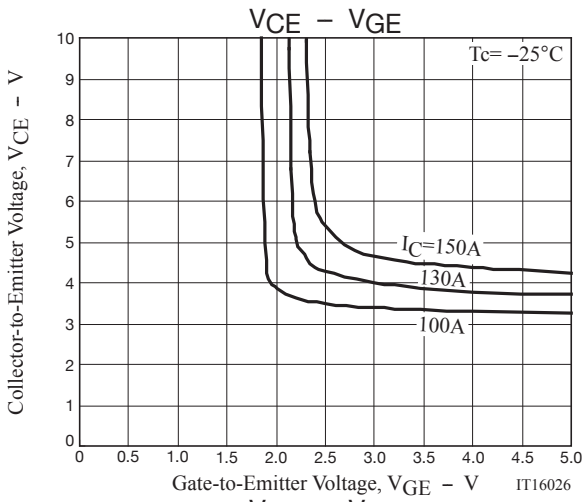


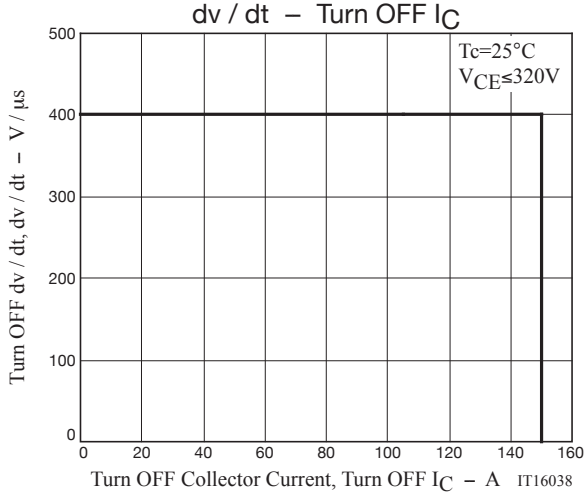
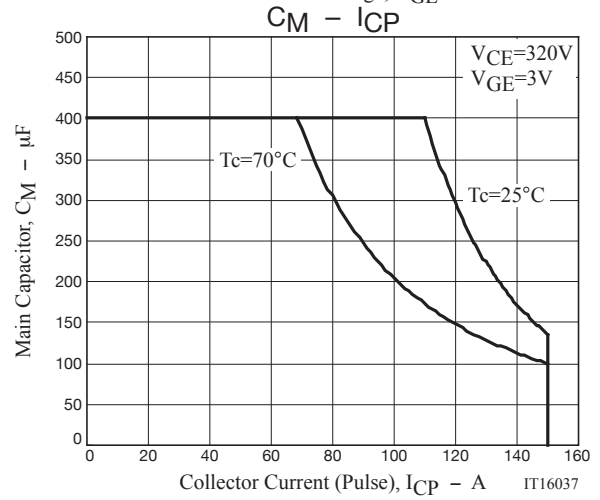
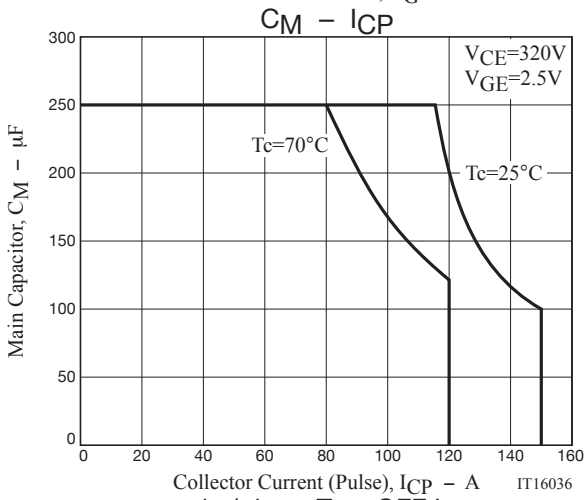
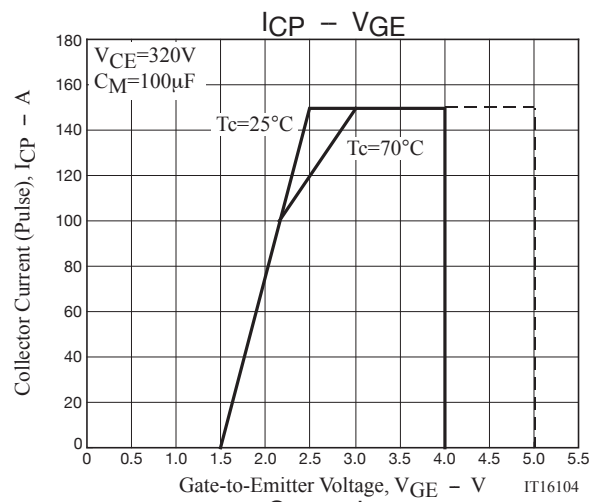
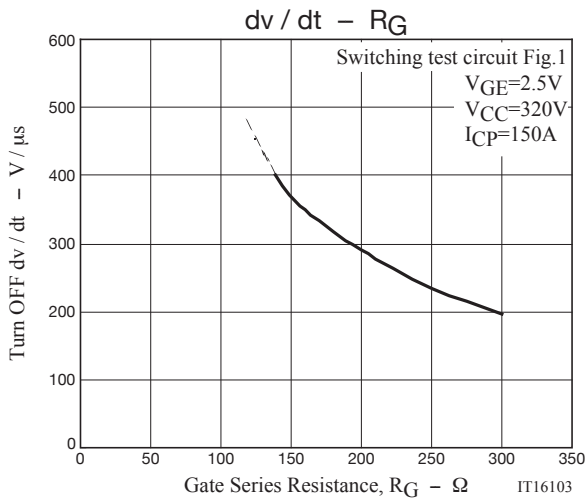
Note1. The collector voltage gradient dv / dt must be smaller than $400V / \mu s$ to protect the device of gate-series resistance R_G when it is turned off.

Ordering Information

Device	Package	Shipping	memo
TIG065E8-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





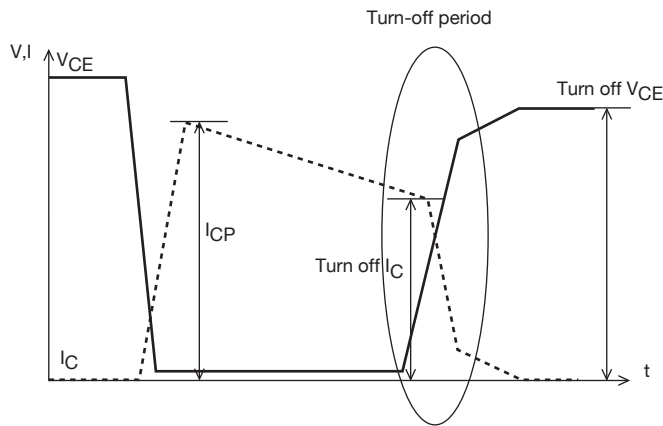


Definition of dv/dt

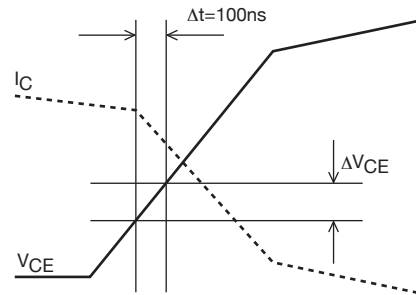
dv/dt is defined as the maximum slope of the below V_{CE} curve during turn-off period.

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

Overall waveform

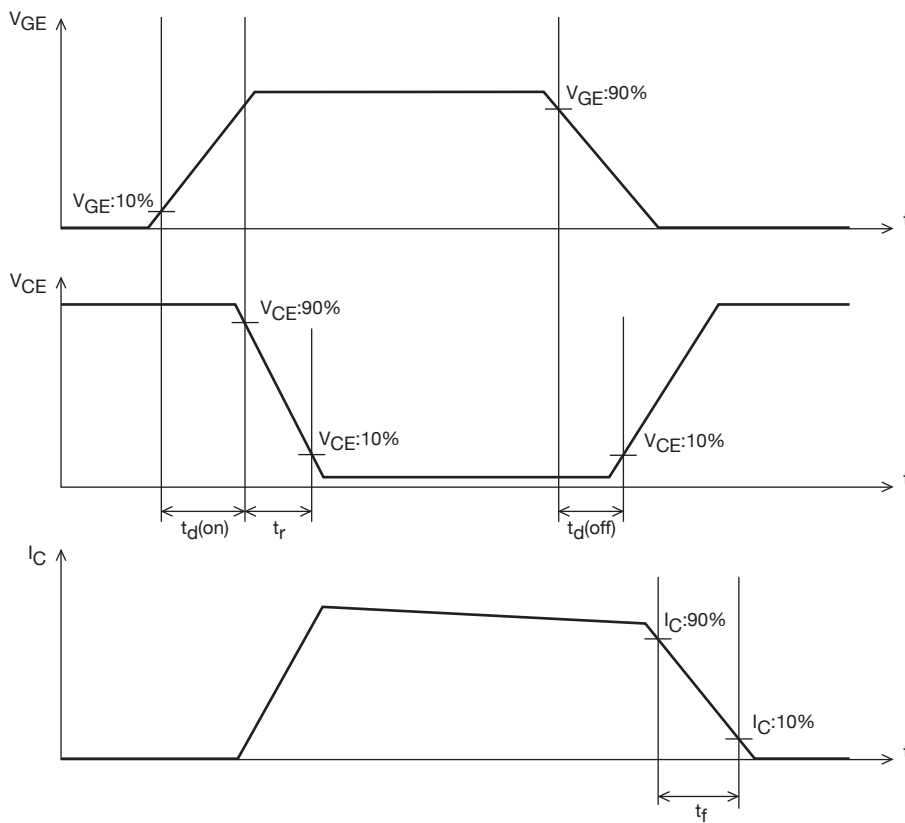


Enlarged picture of turn-off period



IT15323

Definition of Switching Time



IT15324

Embossed Taping Specification

TIG065E8-TL-H

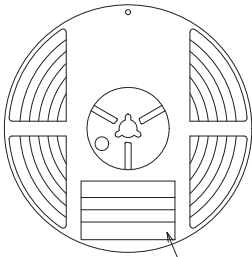
1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
ECH8	CPH6	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit :mm)

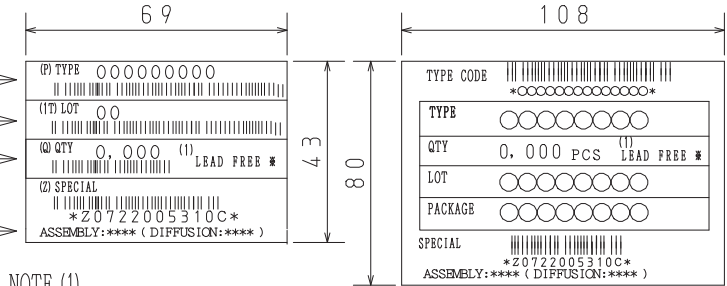
Outer box label
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



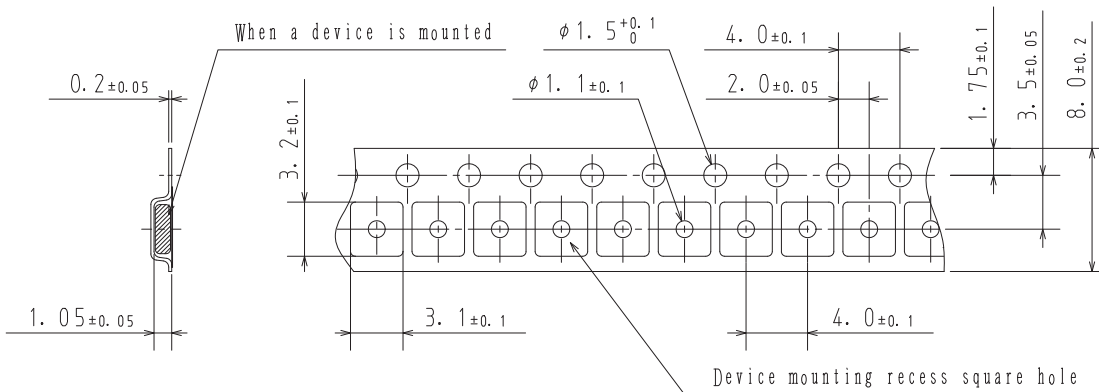
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

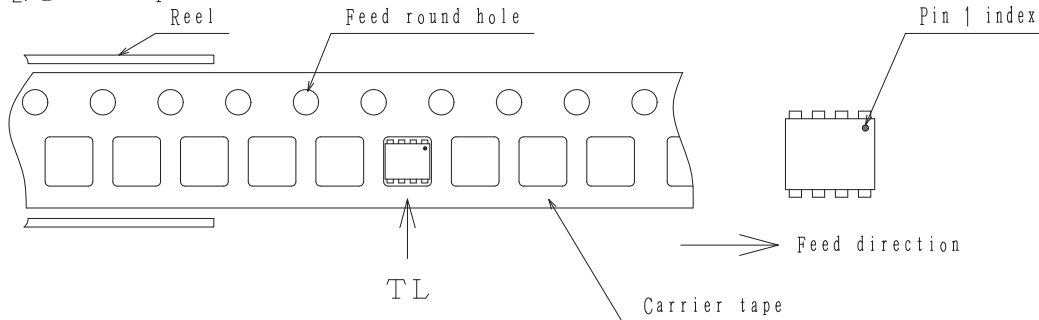
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

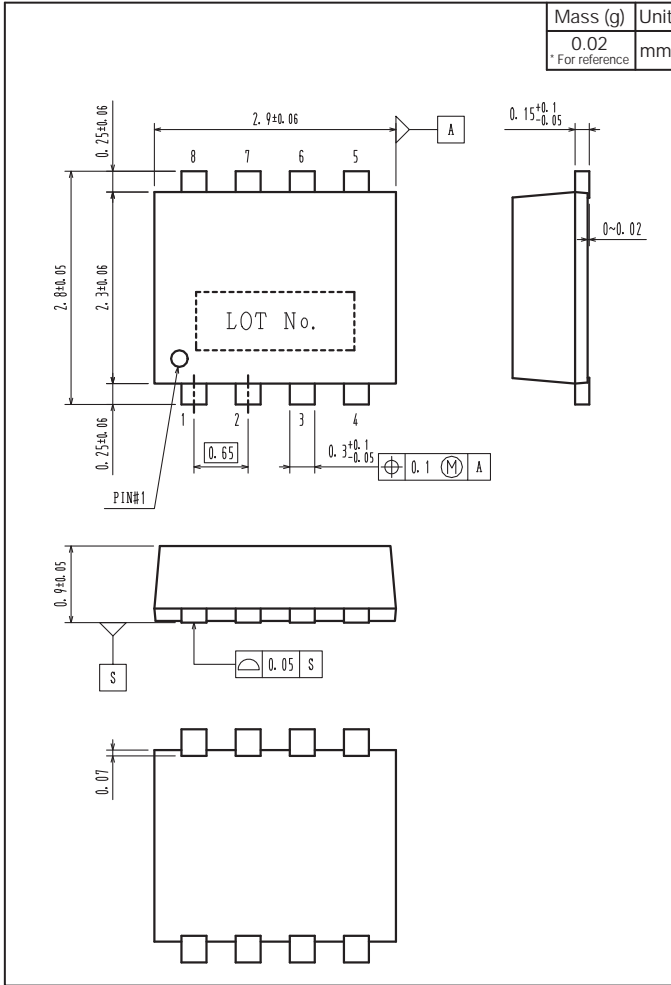


Those with pin 1 index on the feed hole side.....TL

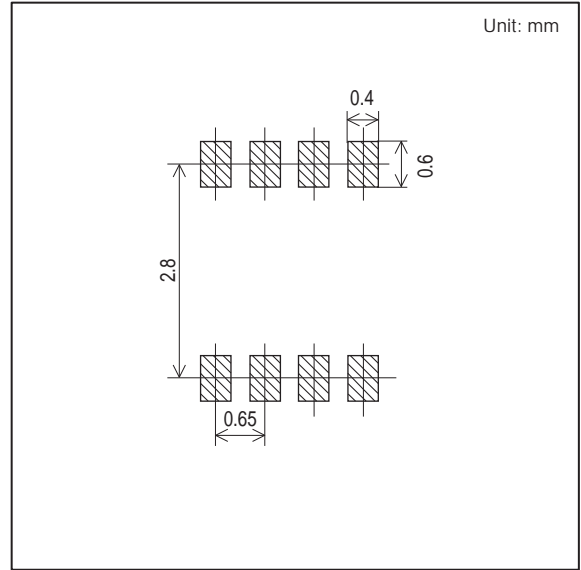
TIG065E8

Outline Drawing

TIG065E8-TL-H



Land Pattern Example



Note : TIG065E8 has protection diode between gate and emitter but handling it requires sufficient care to be taken.

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- Поставка образцов и прототипов;
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