



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## SCH2825

MOSFET : N-Channel Silicon MOSFET  
SBD : Schottky Barrier Diode

## General-Purpose Switching Device Applications

### Features

- Composite type with a N-channel silicon MOSFET and a schottky barrier diode contained in one package facilitating high-density mounting
- [MOSFET] • Low ON-resistance
- [SBD] • Short reverse recovery time
- Ultrahigh-speed switching
- Low forward voltage
- 4V drive

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
[MOSFET]				
Drain-to-Source Voltage	V <sub>DSS</sub>		30	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		1.6	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycles≤1%	6.4	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm) 1unit	0.6	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +125	°C
[SBD]				
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>		30	V
Nonrepetitive Peak Reverse Surge Voltage	V <sub>RSM</sub>		30	V
Average Output Current	I <sub>O</sub>		0.5	A
Surge Forward Current	I <sub>FSM</sub>	50Hz sine wave, 1 cycle	3	A
Junction Temperature	T <sub>j</sub>		-55 to +125	°C
Storage Temperature	T <sub>stg</sub>		-55 to +125	°C

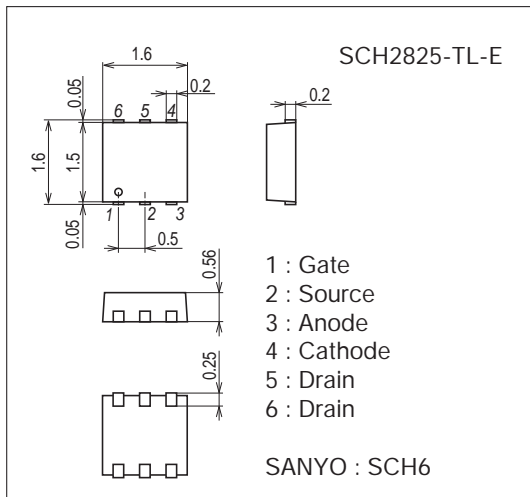
This product is designed to "ESD immunity < 200V\*\*", so please take care when handling.

\* Machine Model

### Package Dimensions

unit : mm (typ)

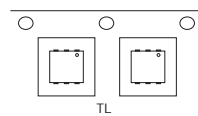
7028-003



### Product & Package Information

- Package : SCH6
- JEITA, JEDEC : SOT-563
- Minimum Packing Quantity : 5,000 pcs./reel

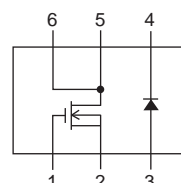
### Packing Type : TL



### Marking



### Electrical Connection

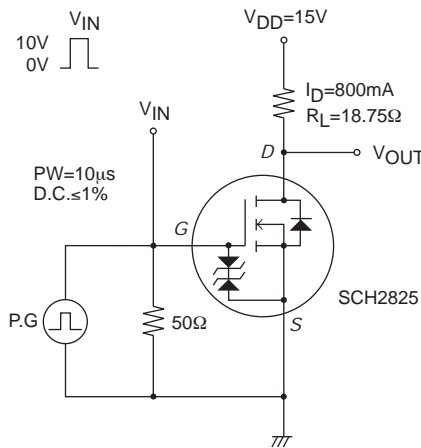


# SCH2825

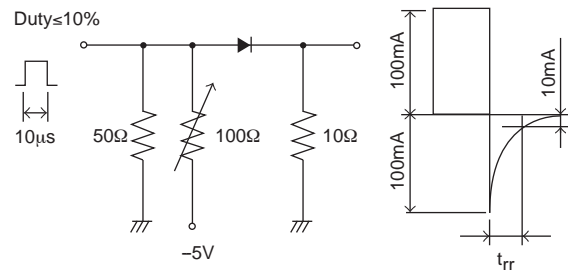
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[MOSFET]						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	30			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$			1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 16V, V_{DS}=0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=800mA$	0.6	1.0		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=800mA, V_{GS}=10V$		135	180	$m\Omega$
	$R_{DS(on)2}$	$I_D=400mA, V_{GS}=4V$		230	330	$m\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=10V, f=1MHz$		88		pF
Output Capacitance	$C_{oss}$			19		pF
Reverse Transfer Capacitance	$C_{rss}$			11		pF
Turn-ON Delay Time	$t_{d(on)}$		See specified Test Circuit.		3.4	
Rise Time	$t_r$			3.5		ns
Turn-OFF Delay Time	$t_{d(off)}$			10.6		ns
Fall Time	$t_f$			4.0		ns
Total Gate Charge	$Q_g$	$V_{DS}=10V, V_{GS}=10V, I_D=1.6A$			2.0	
Gate-to-Source Charge	$Q_{gs}$			0.33		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			0.29		nC
Diode Forward Voltage	$V_{SD}$	$I_S=1.6A, V_{GS}=0V$		0.82	1.2	V
[SBD]						
Reverse Voltage	$V_R$	$I_R=0.5mA$	30			V
Forward Voltage	$V_F$	$I_F=0.5A$		0.42	0.48	V
Reverse Current	$I_R$	$V_R=15V$			120	$\mu A$
Interterminal Capacitance	$C$	$V_R=10V, f=1MHz$		13		pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=100mA$ , See specified Test Circuit.			10	ns

### Switching Time Test Circuit (MOSFET)

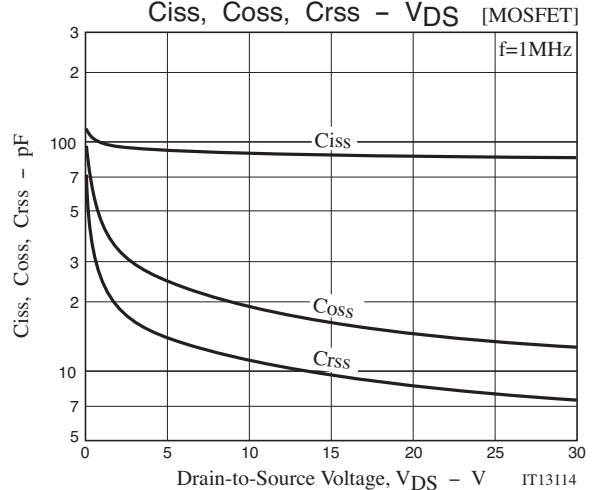
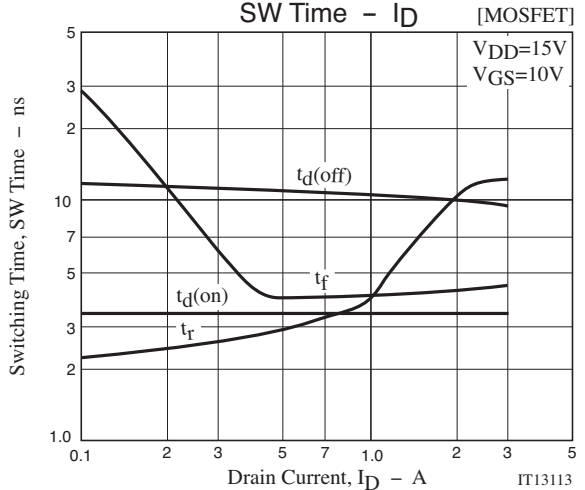
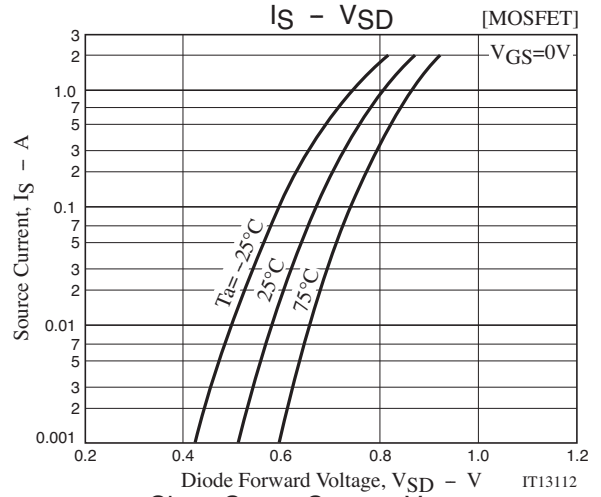
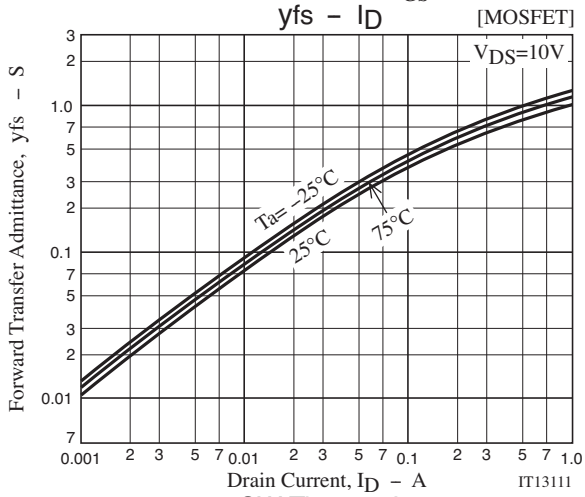
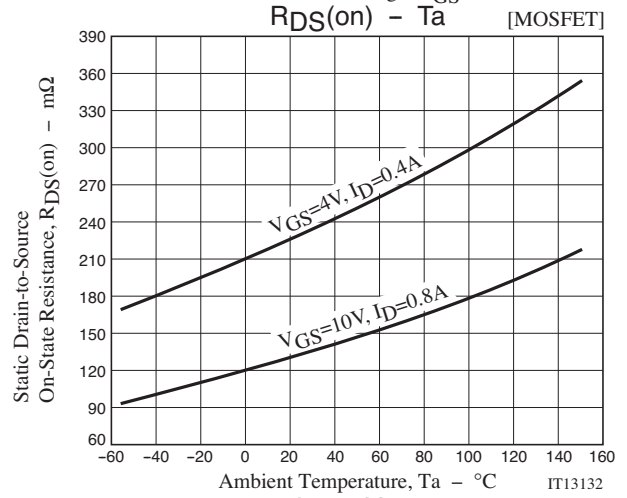
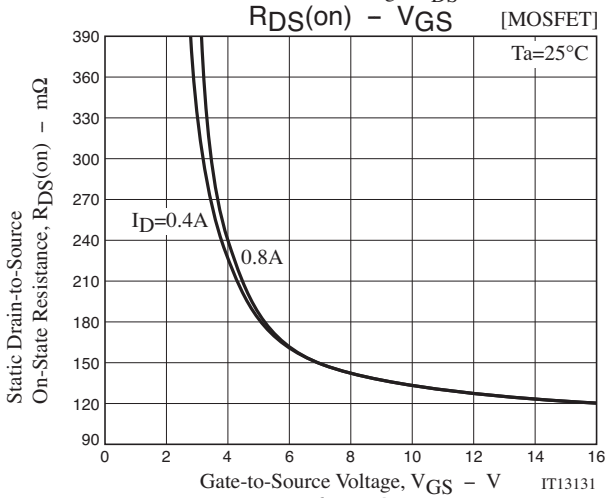
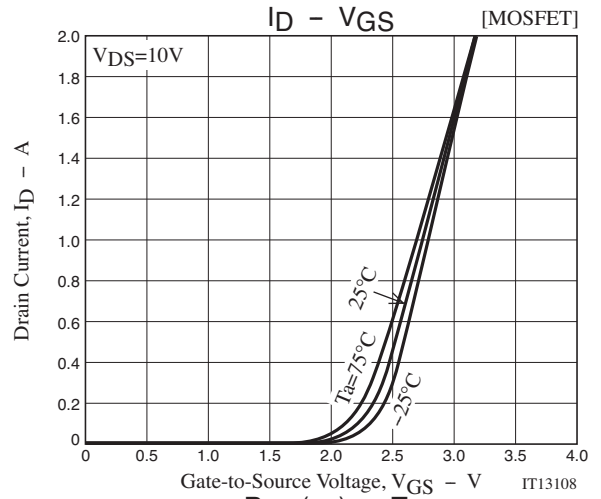
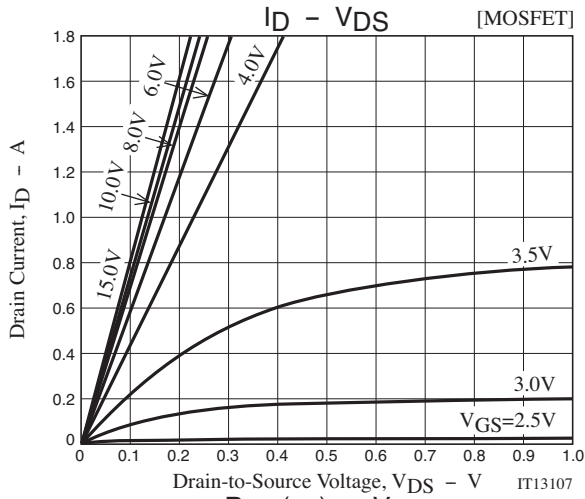


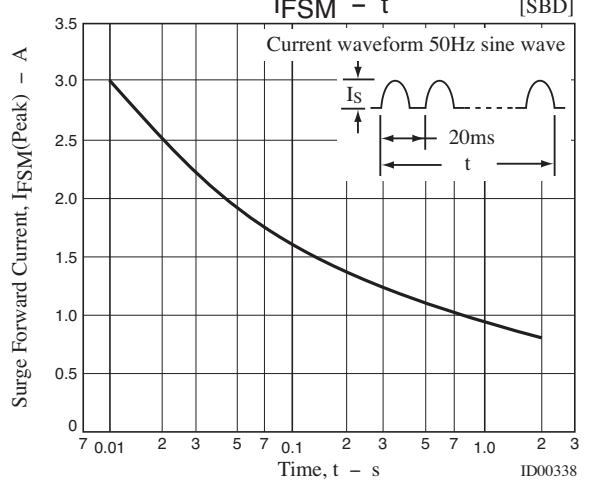
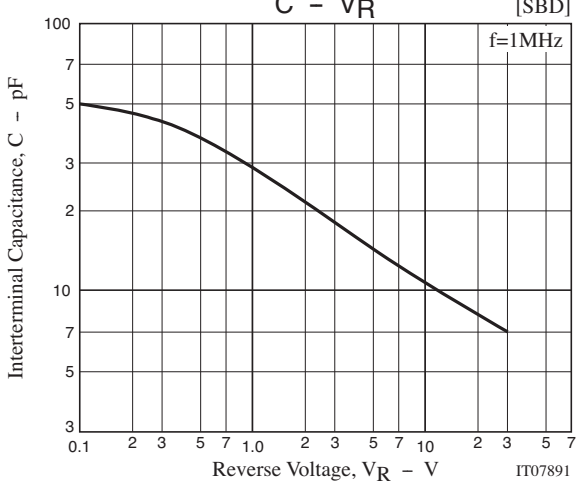
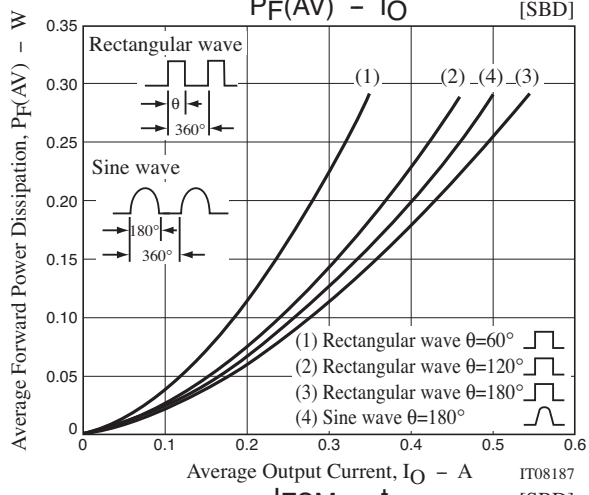
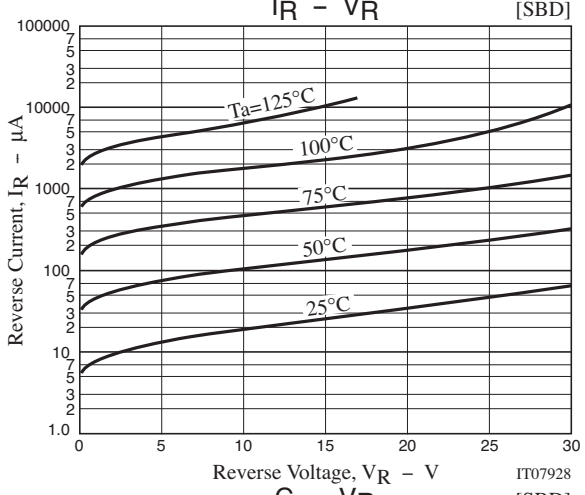
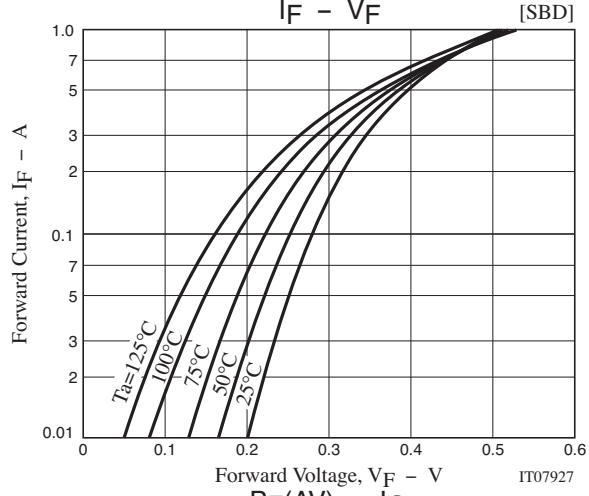
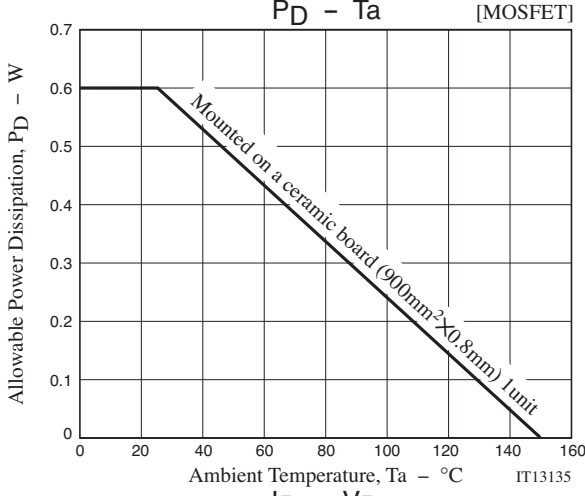
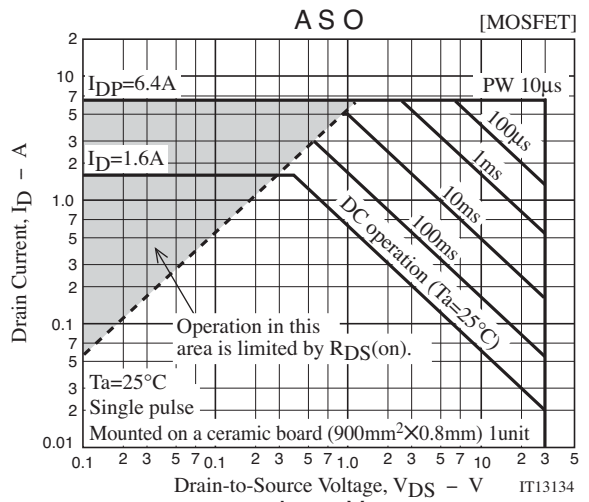
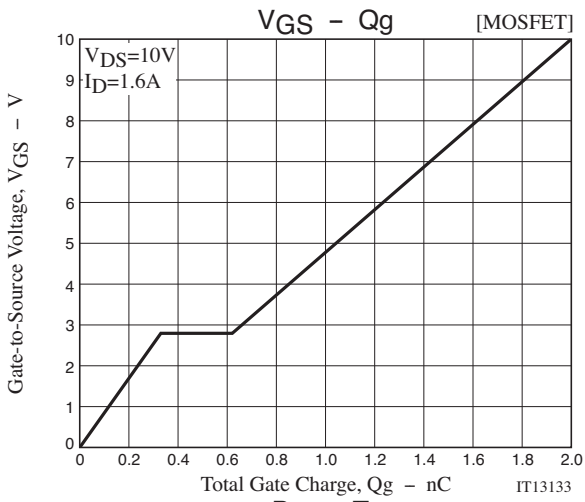
### $t_{rr}$ Test Circuit (SBD)



### Ordering Information

Device	Package	Shipping	memo
SCH2825-TL-E	SCH6	5,000pcs./reel	Pb Free





Taping Specification

SCH2825-TL-E

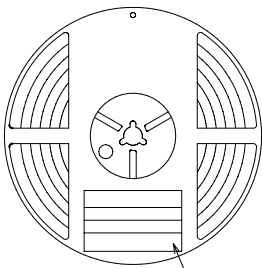
1. Packing Format

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)
SCH6	SCH6	5,000	25,000	150,000	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)

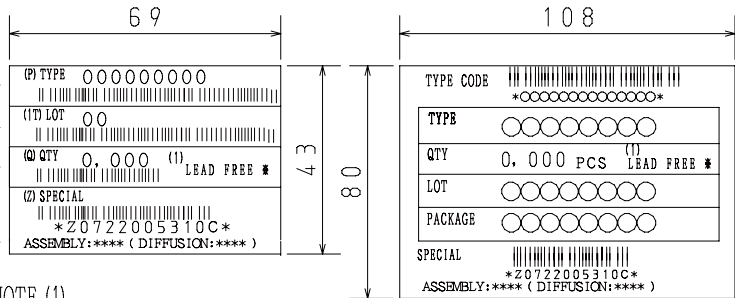
Outer box label  
It is a label at the time of factory shipments.  
The form of a label may change in physical distribution process.

Packing method



Type No.  
LOT No.  
Quantity  
Origin

Reel label



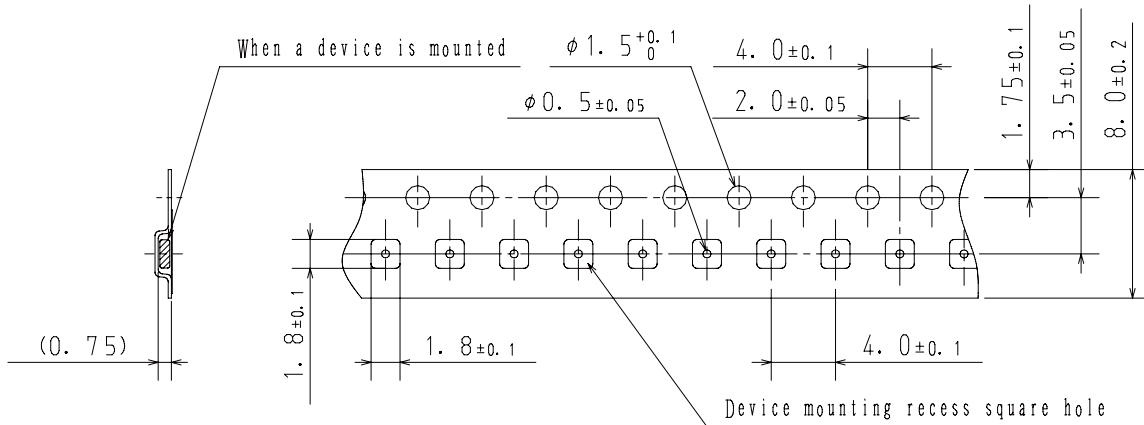
NOTE (1)

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

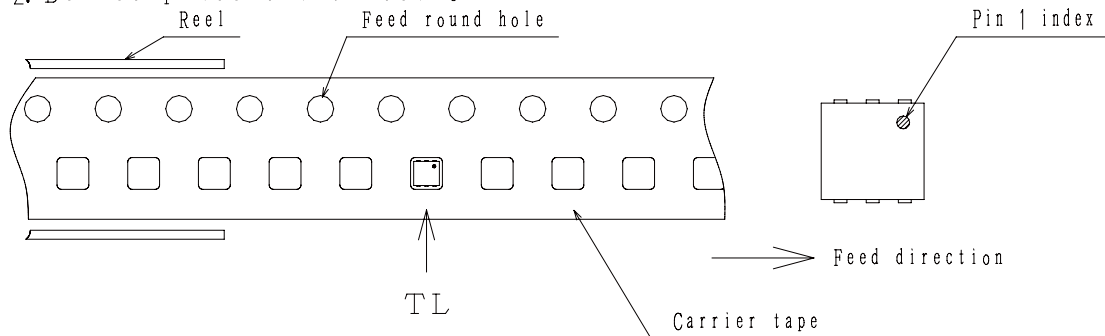
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



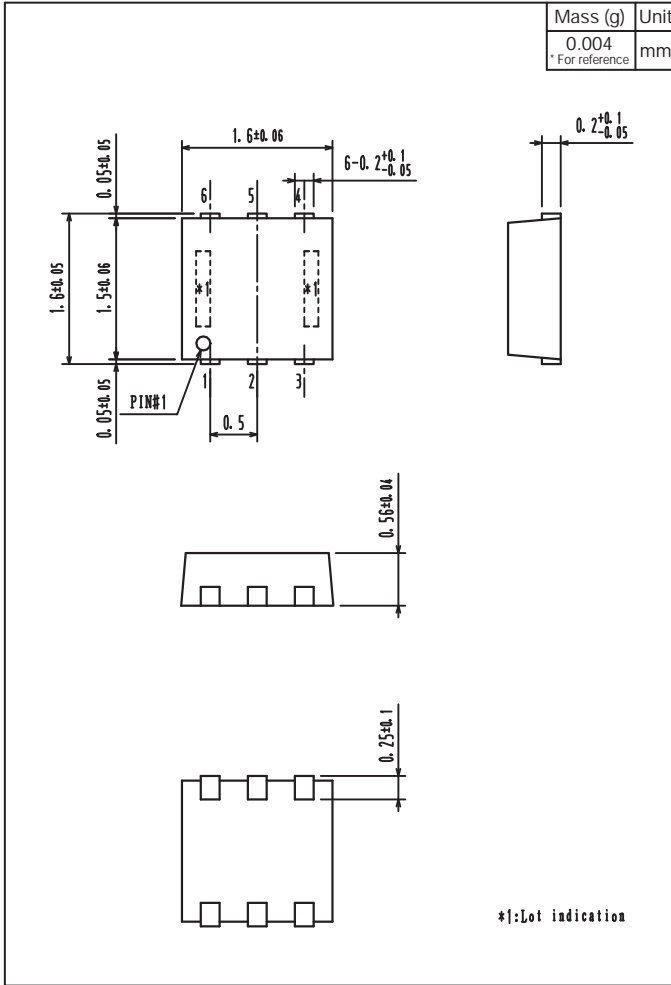
2-2. Device placement direction



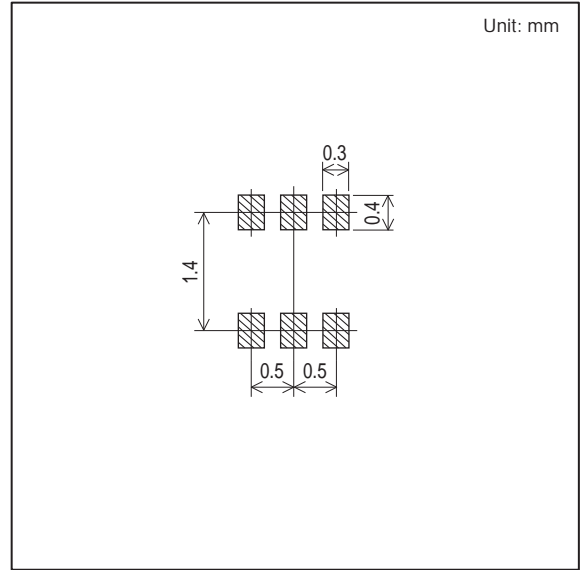
Those with pin 1 index on the feed hole side.....TL

# SCH2825

## Outline Drawing SCH2825-TL-E



## Land Pattern Example



Note on usage : Since the SCH2825 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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