



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

P-Channel Silicon MOSFET

## SCH1333 — General-Purpose Switching Device Applications

### Features

- 1.8V drive
- Halogen free compliance
- Protection diode in

### Specifications

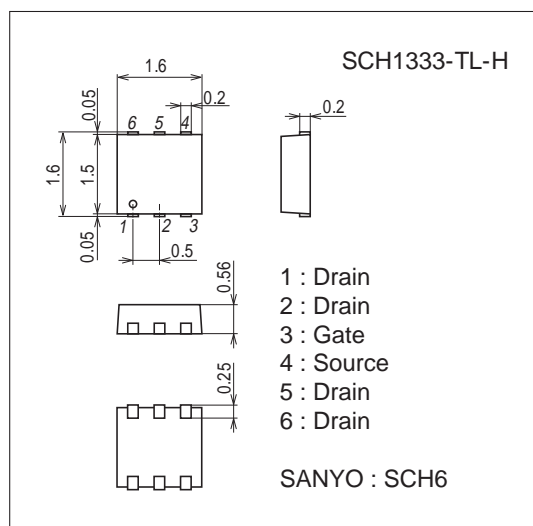
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$		-20	V
Gate-to-Source Voltage	$V_{GSS}$		$\pm 10$	V
Drain Current (DC)	$I_D$		-2	A
Drain Current (Pulse)	$I_{DP}$	$PW \leq 10\mu s$ , duty cycle $\leq 1\%$	-8	A
Allowable Power Dissipation	$P_D$	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	0.8	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

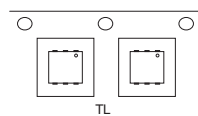
7028-002



### Product & Package Information

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

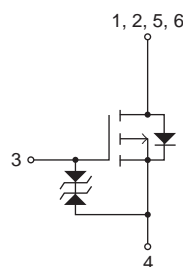
### Packing Type : TL



### Marking



### Electrical Connection

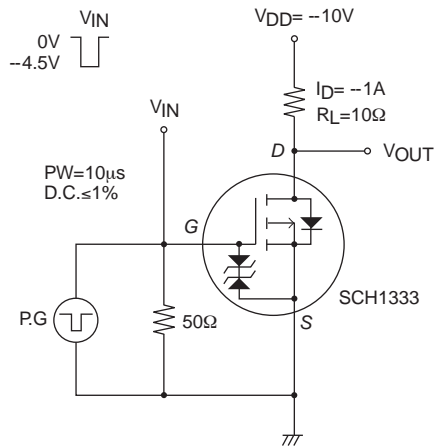


# SCH1333

## Electrical Characteristics at Ta=25°C

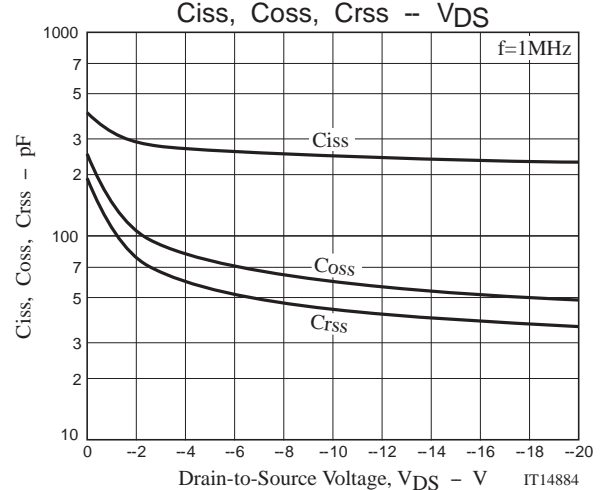
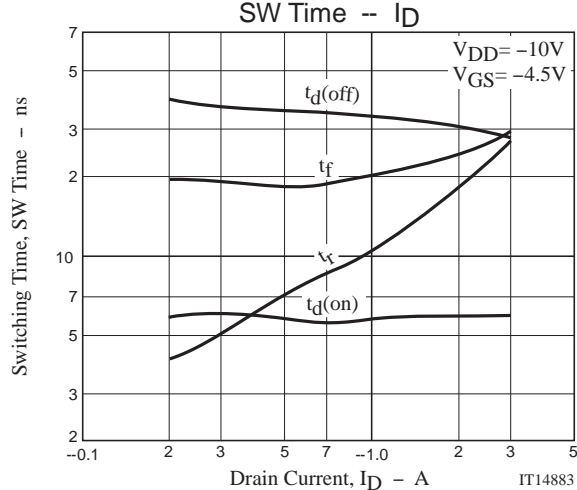
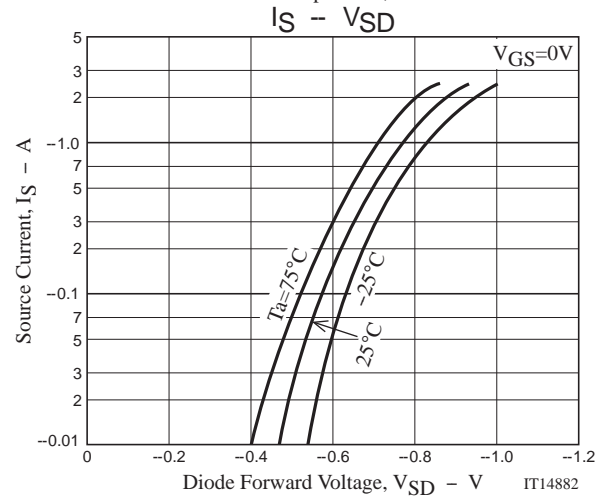
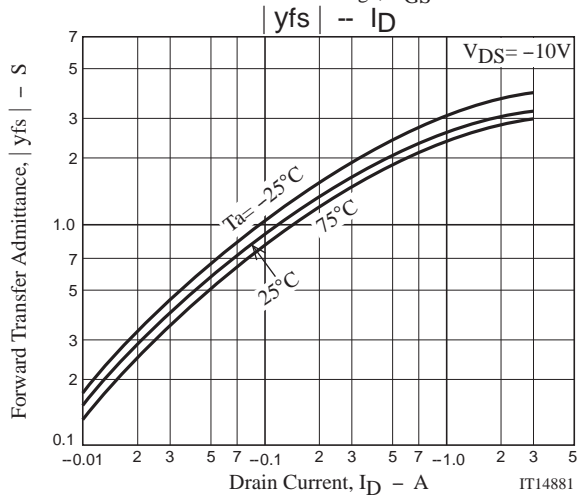
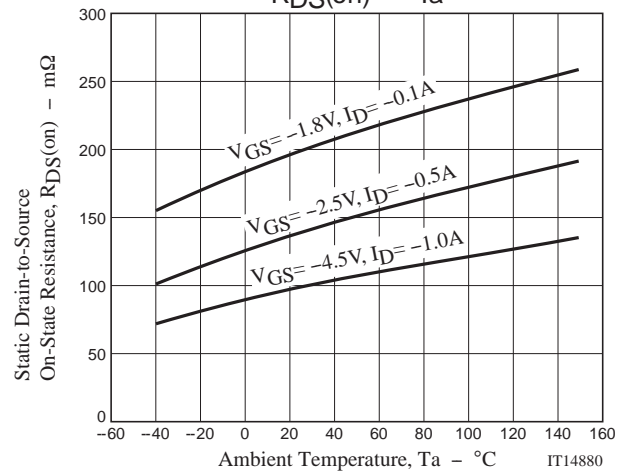
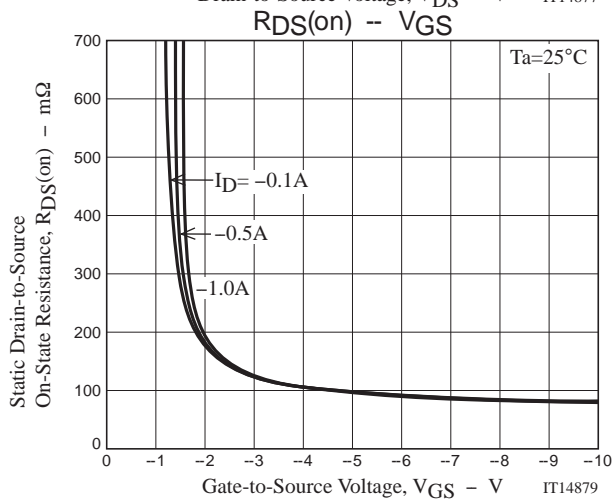
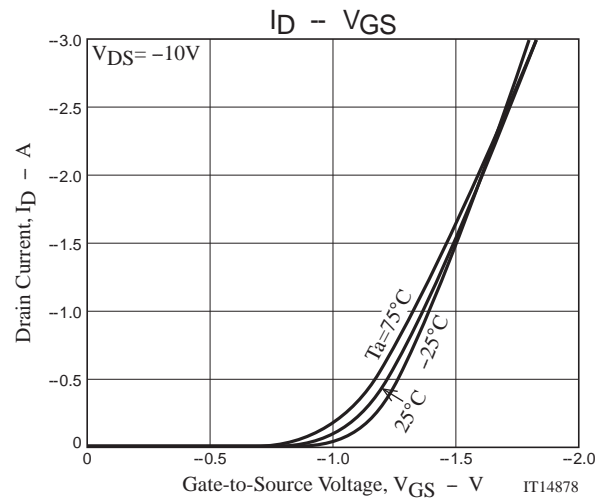
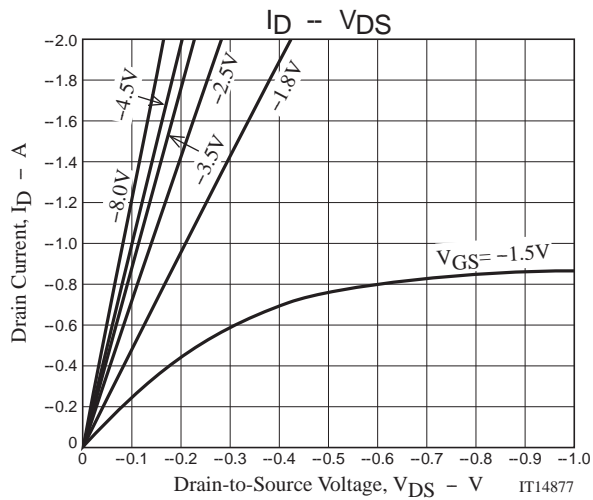
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-20			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -1A$		2.7		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -1A, V_{GS} = -4.5V$		100	130	m $\Omega$
	$R_{DS(on)2}$	$I_D = -0.5A, V_{GS} = -2.5V$		140	196	m $\Omega$
	$R_{DS(on)3}$	$I_D = -0.1A, V_{GS} = -1.8V$		210	315	m $\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		250		pF
Output Capacitance	$C_{oss}$			60		pF
Reverse Transfer Capacitance	$C_{rss}$			45		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		5.7		ns
Rise Time	$t_r$			11		ns
Turn-OFF Delay Time	$t_d(off)$			34		ns
Fall Time	$t_f$			20		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -2A$		3.3		nC
Gate-to-Source Charge	$Q_{gs}$			0.65		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			0.72		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -2A, V_{GS} = 0V$		-0.85	-1.2	V

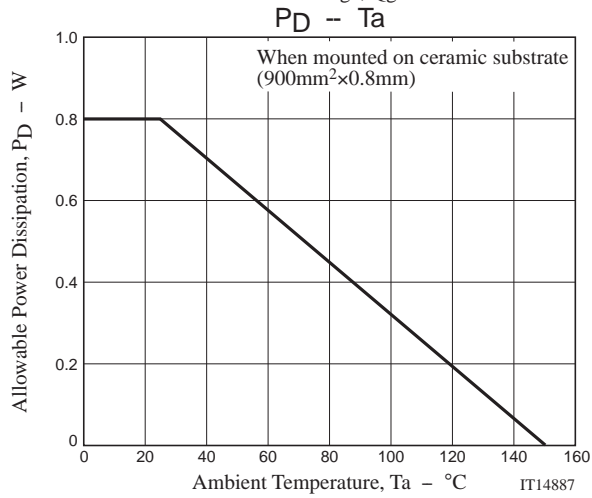
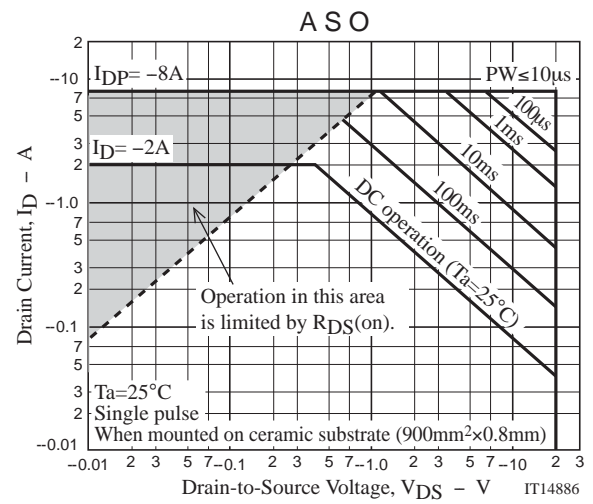
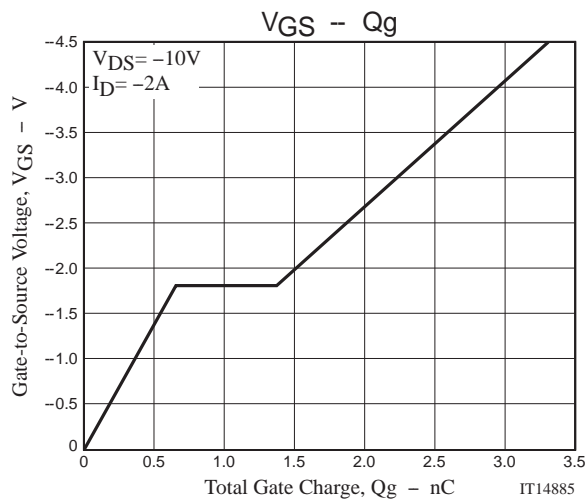
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
SCH1333-TL-H	SCH6	5,000pcs./reel	Pb Free and Halogen Free





## Taping Specification

SCH1333-TL-H

## 1. Packing Format

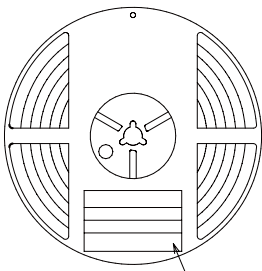
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SCH6	SCH6	5,000	25,000	150,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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



Reel label

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

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE *
(Z) SPECIAL	*Z0722005310C*
ASSEMBLY:****	(DIFFUSION:****)

TYPE CODE	
TYPE	
QTY	0,000 PCS (1) LEAD FREE *
LOT	
PACKAGE	
SPECIAL	*Z0722005310C*
ASSEMBLY:****	(DIFFUSION:****)

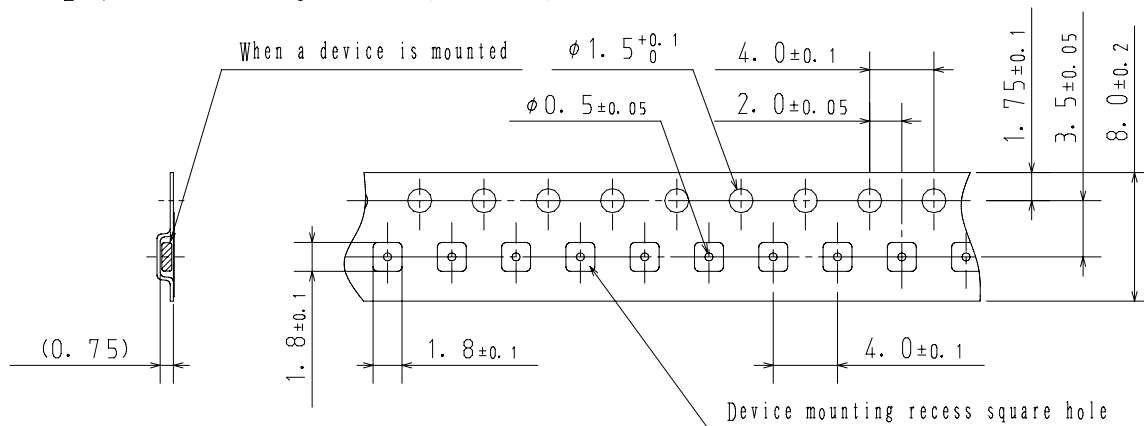
NOTE (1)

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

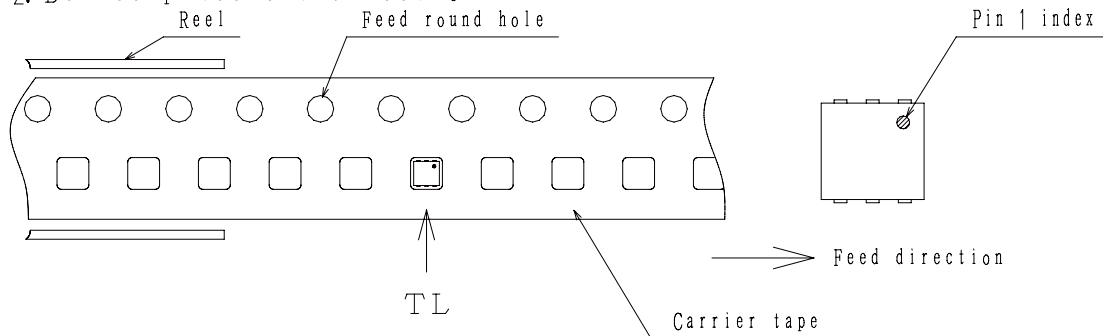
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## 2. Taping configuration

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

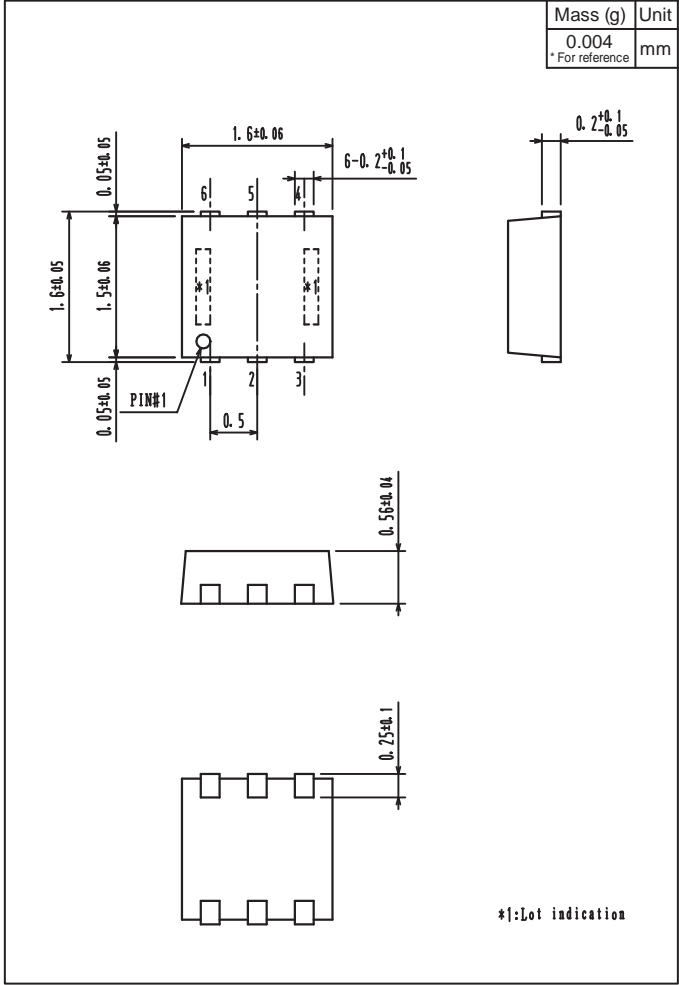


## 2-2. Device placement direction

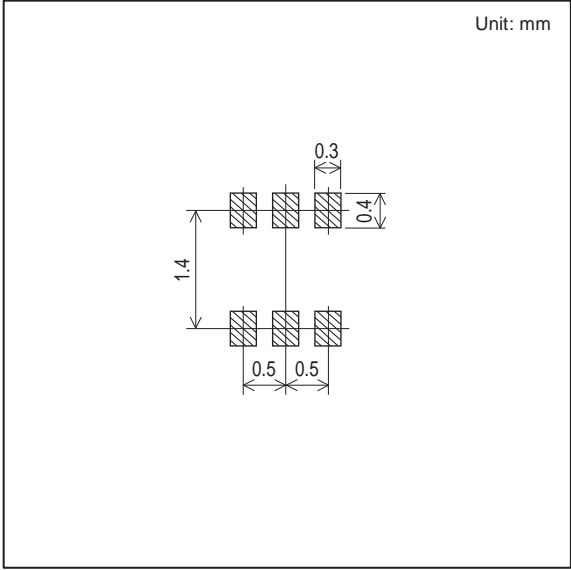


Those with pin 1 index on the feed hole side.....TL

Outline Drawing  
SCH1333-TL-H



Land Pattern Example



Note on usage : Since the SCH1333 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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