



SANYO Semiconductors

## DATA SHEET

An ON Semiconductor Company

# ECH8675 — General-Purpose Switching Device Applications

P-Channel Silicon MOSFET

## Features

- 1.8V drive
- Composite type, facilitating high-density mounting
- Halogen free compliance
- Protection diode in

## Specifications

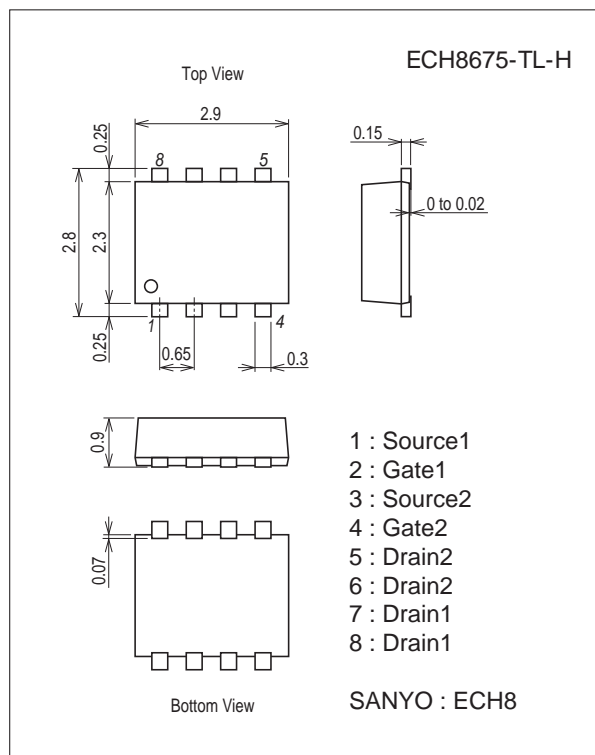
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-4.5	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-30	A
Allowable Power Dissipation	P <sub>D</sub>	When mounted on ceramic substrate (1200mm <sup>2</sup> ×0.8mm) 1unit	1.3	W
Total Power Dissipation	P <sub>T</sub>	When mounted on ceramic substrate (1200mm <sup>2</sup> ×0.8mm)	1.5	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

## Package Dimensions

unit : mm (typ)

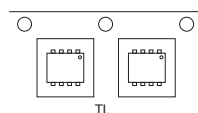
7011A-001



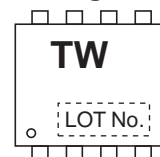
## Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

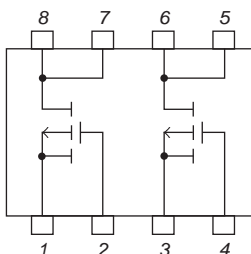
## Packing Type : TL



## Marking



## Electrical Connection

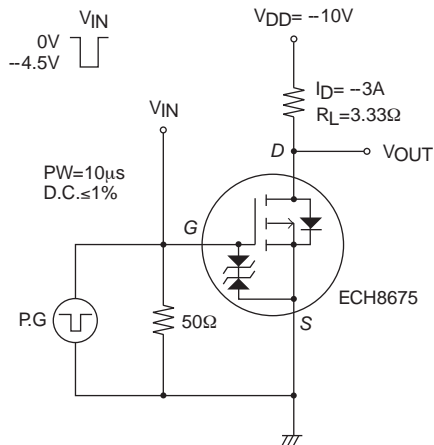


# ECH8675

## Electrical Characteristics at Ta=25°C

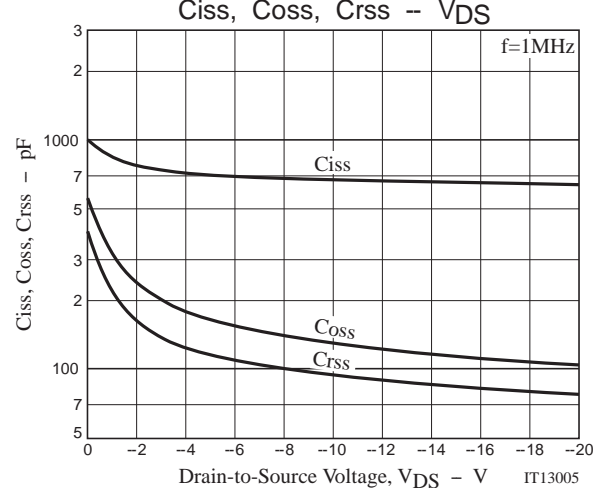
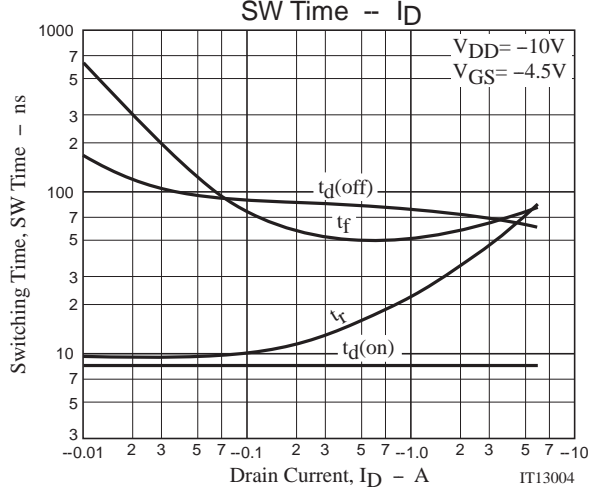
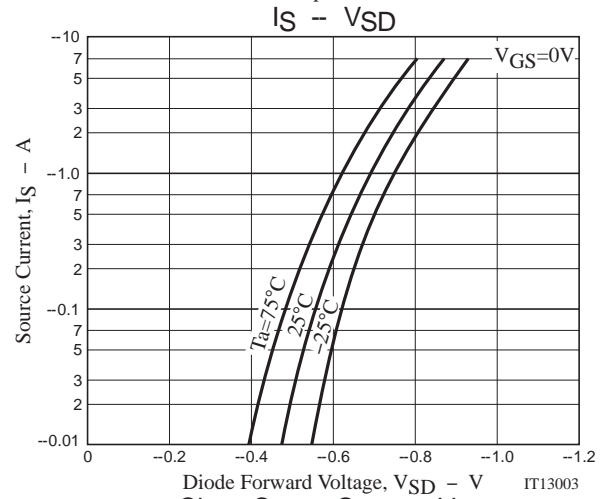
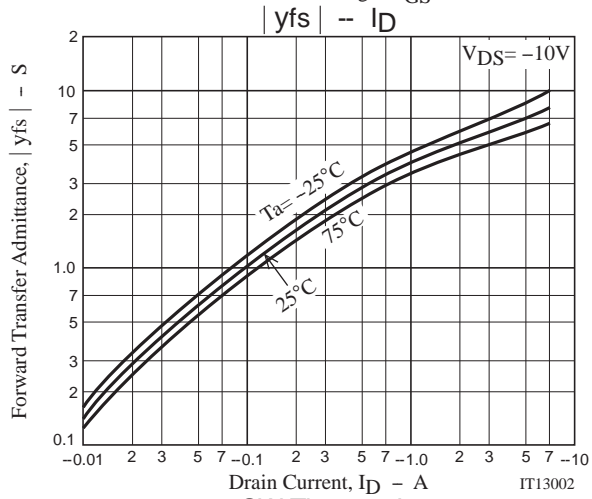
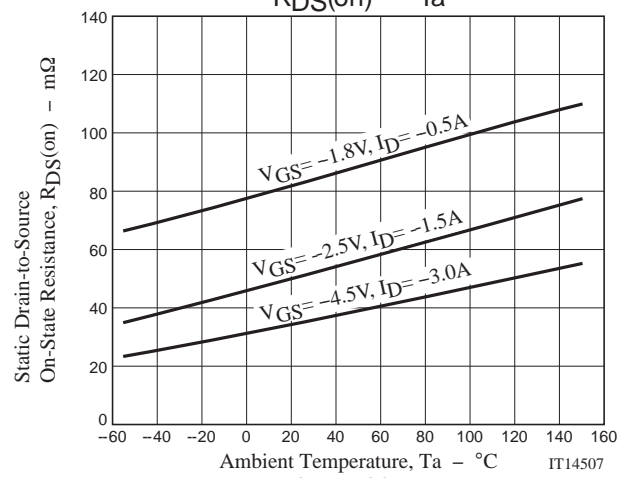
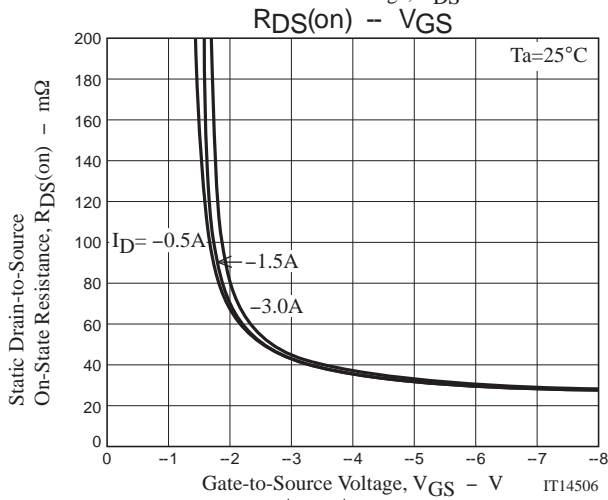
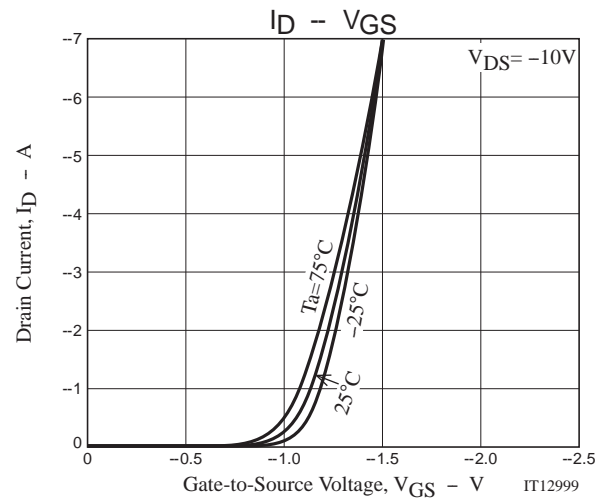
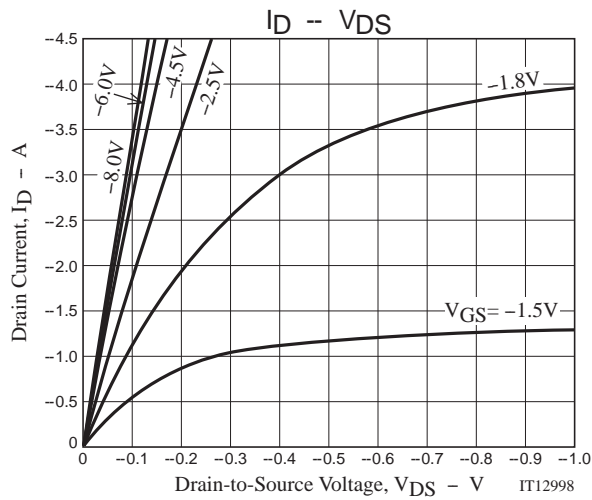
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1mA, V_{GS} = 0V$	-20			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			-1	$\mu A$
Gate-to-Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 8V, V_{DS} = 0V$			$\pm 10$	$\mu A$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -10V, I_D = -1mA$	-0.4		-1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = -3A$	3.5	5.9		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D = -3A, V_{GS} = -4.5V$		35	46	m $\Omega$
	$R_{DS(on)2}$	$I_D = -1.5A, V_{GS} = -2.5V$		51	72	m $\Omega$
	$R_{DS(on)3}$	$I_D = -0.5A, V_{GS} = -1.8V$		75	115	m $\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10V, f = 1MHz$		670		pF
Output Capacitance	$C_{oss}$			130		pF
Reverse Transfer Capacitance	$C_{rss}$			94		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8.4		ns
Rise Time	$t_r$			45		ns
Turn-OFF Delay Time	$t_d(off)$			69		ns
Fall Time	$t_f$			63		ns
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -4.5A$		7.3		nC
Gate-to-Source Charge	$Q_{gs}$			1.3		nC
Gate-to-Drain "Miller" Charge	$Q_{gd}$			2.1		nC
Diode Forward Voltage	$V_{SD}$	$I_S = -4.5A, V_{GS} = 0V$		-0.82	-1.2	V

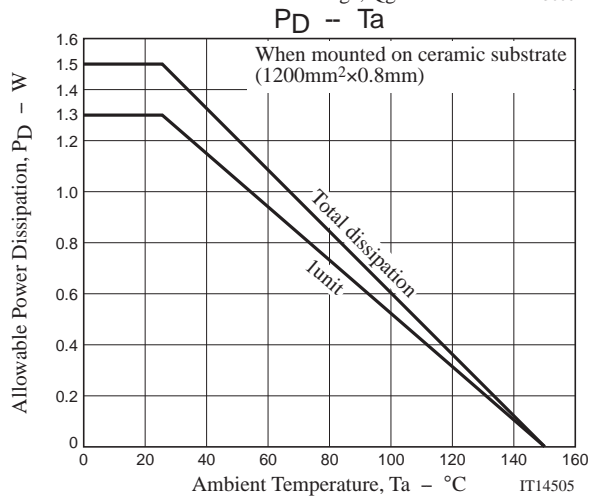
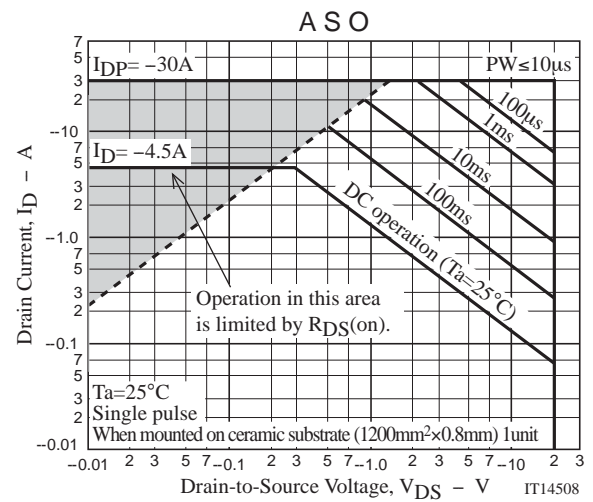
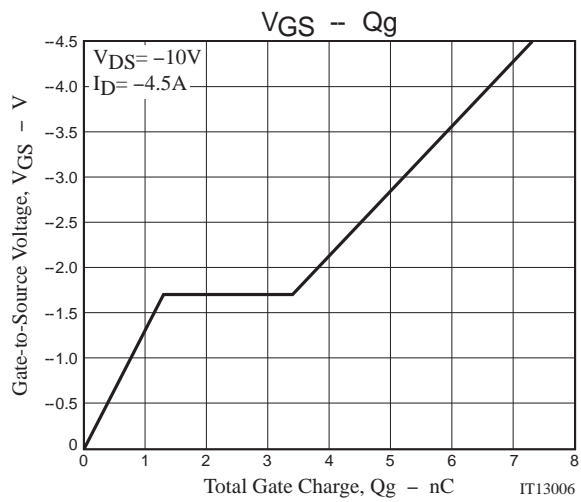
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
ECH8675-TL-H	ECH8	3,000pcs./reel	Pb Free and Halogen Free





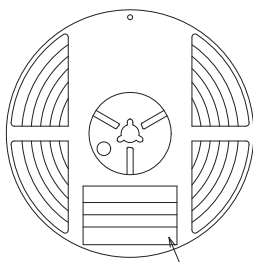
## Embossed Taping Specification

ECH8675-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

## Packing method



Reel label

Type No.  
LOT No.  
Quantity  
Origin

Reel label, Inner box label  
(unit:mm)

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE *
(2) SPECIAL	
	*20722005310C*
	ASSEMBLY:**** (DIFFUSION:****)

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 CODE	00000000000000000000
TYPE	00000000
QTY	0,000 PCS (1) LEAD FREE *
LOT	00000000
PACKAGE	00000000
SPECIAL	
	*20722005310C*
	ASSEMBLY:**** (DIFFUSION:****)

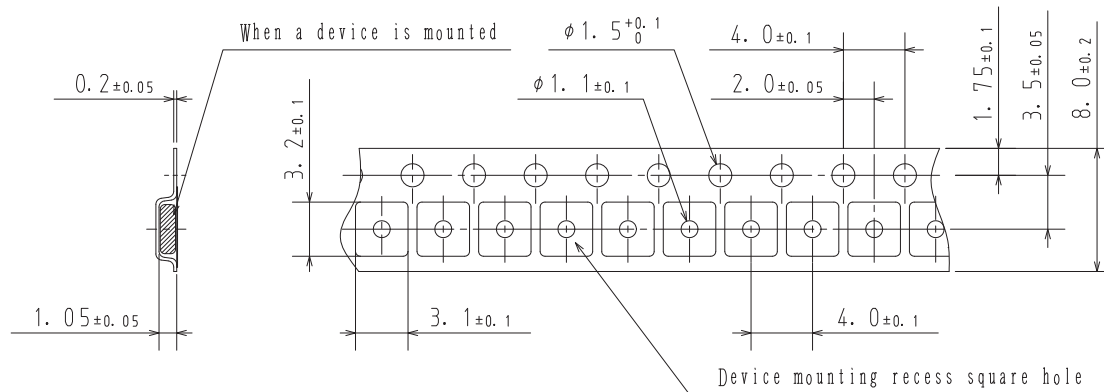
## NOTE (1)

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

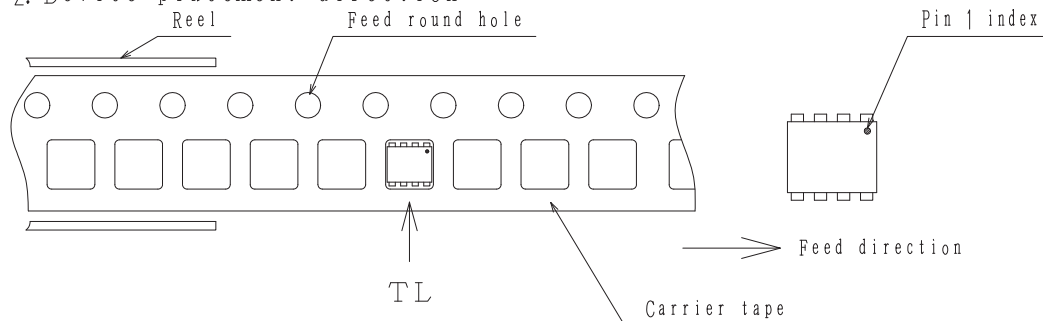
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

## 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



Note on usage : Since the ECH8675 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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