



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## CPH3356 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

### Features

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

### Specifications

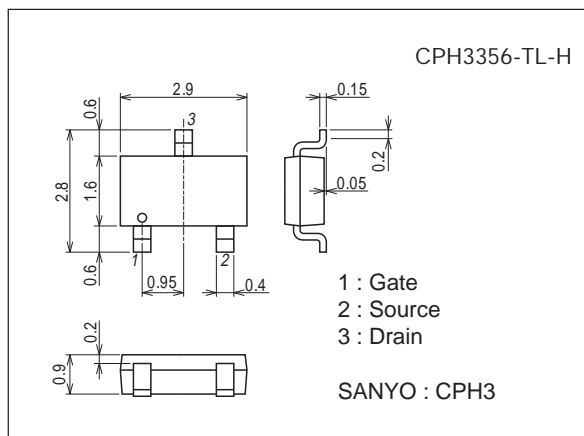
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		-20	V
Gate-to-Source Voltage	VGSS		±10	V
Drain Current (DC)	ID		-2.5	A
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	-10	A
Allowable Power Dissipation	PD	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.0	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

### Package Dimensions

unit : mm (typ)

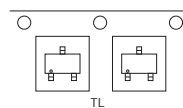
7015A-004



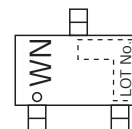
### Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

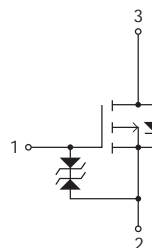
### Packing Type: TL



### Marking



### Electrical Connection

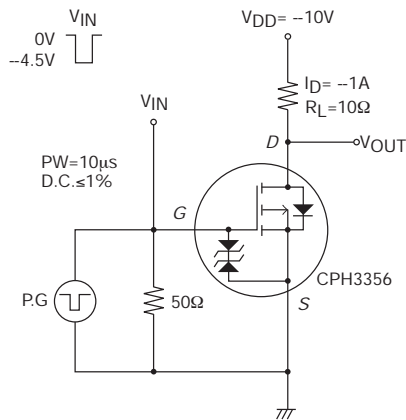


# CPH3356

## Electrical Characteristics at $T_a=25^\circ\text{C}$

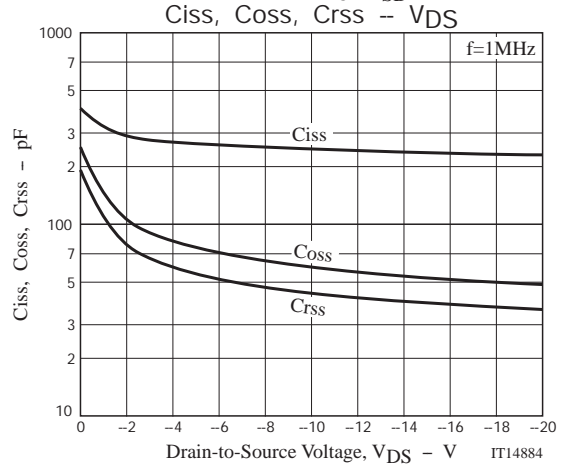
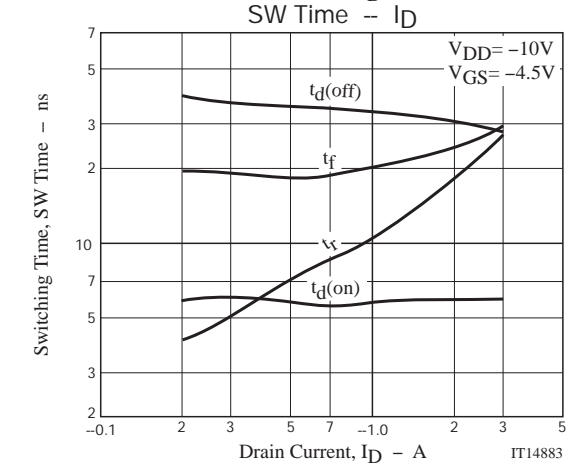
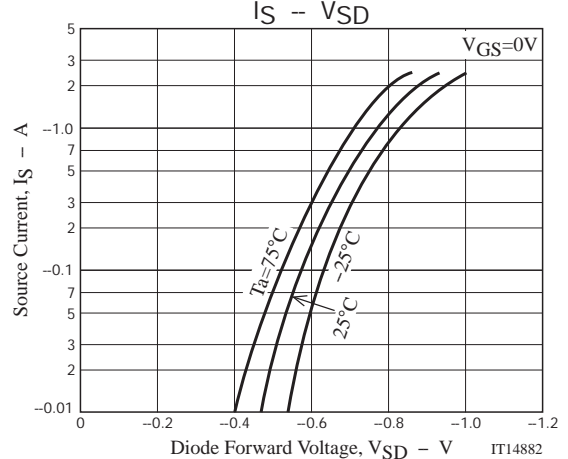
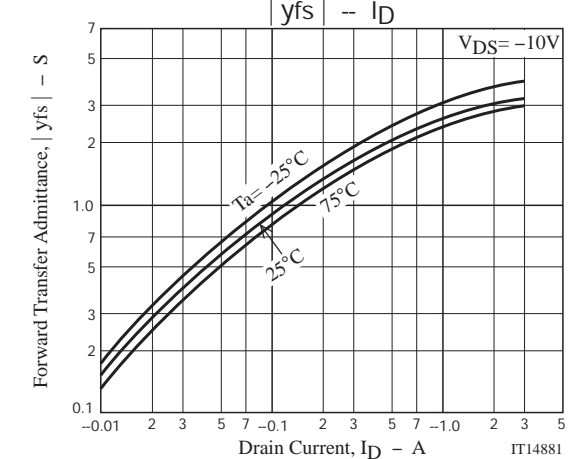
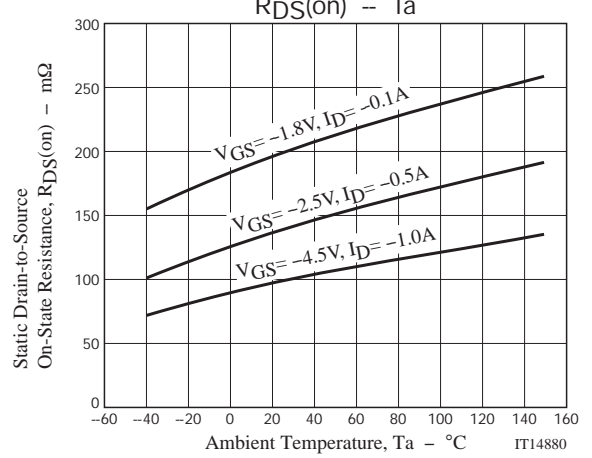
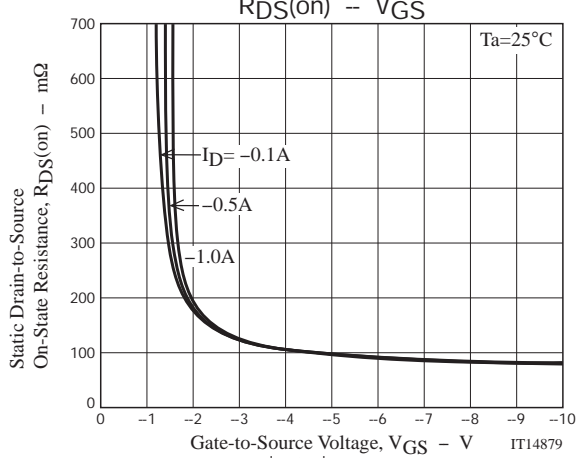
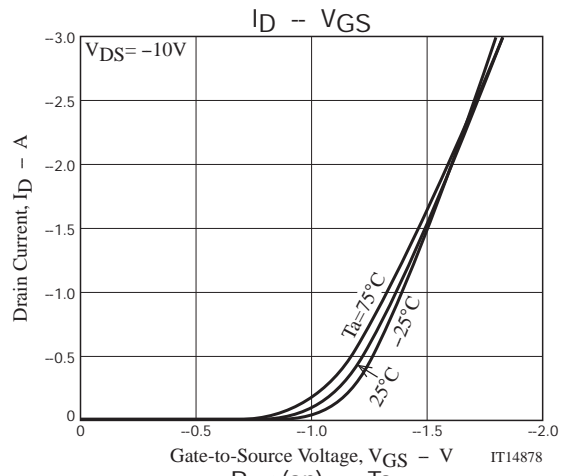
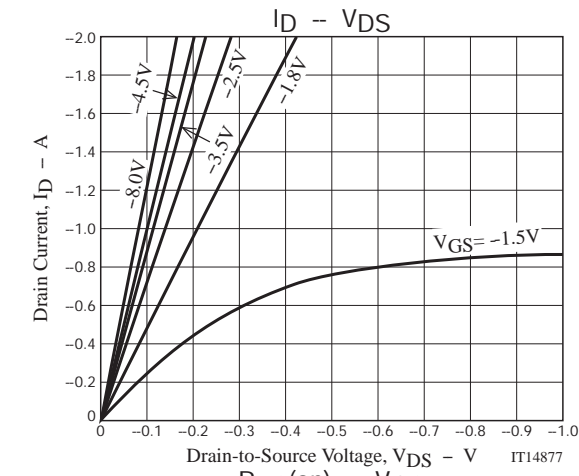
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V(\text{BR})_{\text{DSS}}$	$I_D=-1\text{mA}, V_{\text{GS}}=0\text{V}$	-20			V
Zero-Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{\text{DS}}=-20\text{V}, V_{\text{GS}}=0\text{V}$			-1	$\mu\text{A}$
Gate-to-Source Leakage Current	$I_{\text{GSS}}$	$V_{\text{GS}}=\pm 8\text{V}, V_{\text{DS}}=0\text{V}$			$\pm 10$	$\mu\text{A}$
Cutoff Voltage	$V_{\text{GS(off)}}$	$V_{\text{DS}}=-10\text{V}, I_D=-1\text{mA}$	-0.4		-1.4	V
Forward Transfer Admittance	$ y_{\text{fs}} $	$V_{\text{DS}}=-10\text{V}, I_D=-1\text{A}$		2.7		S
Static Drain-to-Source On-State Resistance	$R_{\text{DS(on)1}}$	$I_D=-1\text{A}, V_{\text{GS}}=-4.5\text{V}$		105	137	$\text{m}\Omega$
	$R_{\text{DS(on)2}}$	$I_D=-0.5\text{A}, V_{\text{GS}}=-2.5\text{V}$		145	203	$\text{m}\Omega$
	$R_{\text{DS(on)3}}$	$I_D=-0.1\text{A}, V_{\text{GS}}=-1.8\text{V}$		215	323	$\text{m}\Omega$
Input Capacitance	$C_{\text{iss}}$	$V_{\text{DS}}=-10\text{V}, f=1\text{MHz}$		250		pF
Output Capacitance	$C_{\text{oss}}$			60		pF
Reverse Transfer Capacitance	$C_{\text{rss}}$			45		pF
Turn-ON Delay Time	$t_{\text{d(on)}}$		See specified Test Circuit.		5.7	
Rise Time	$t_{\text{r}}$			11		ns
Turn-OFF Delay Time	$t_{\text{d(off)}}$			34		ns
Fall Time	$t_{\text{f}}$			20		ns
Total Gate Charge	$Q_{\text{g}}$	$V_{\text{DS}}=-10\text{V}, V_{\text{GS}}=-4.5\text{V}, I_D=-2.5\text{A}$			3.3	
Gate-to-Source Charge	$Q_{\text{gs}}$			0.65		nC
Gate-to-Drain "Miller" Charge	$Q_{\text{gd}}$			0.72		nC
Diode Forward Voltage	$V_{\text{SD}}$	$I_{\text{S}}=-2.5\text{A}, V_{\text{GS}}=0\text{V}$		-0.87	-1.5	V

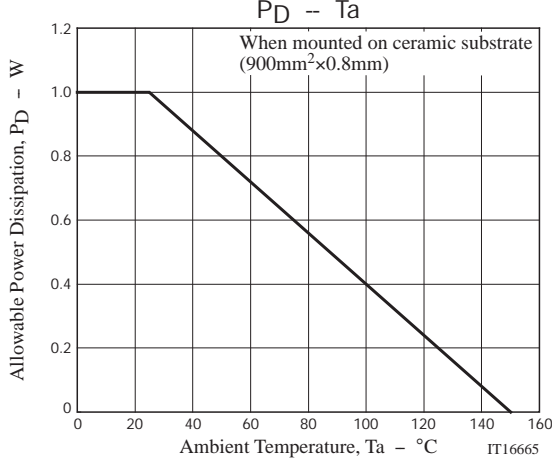
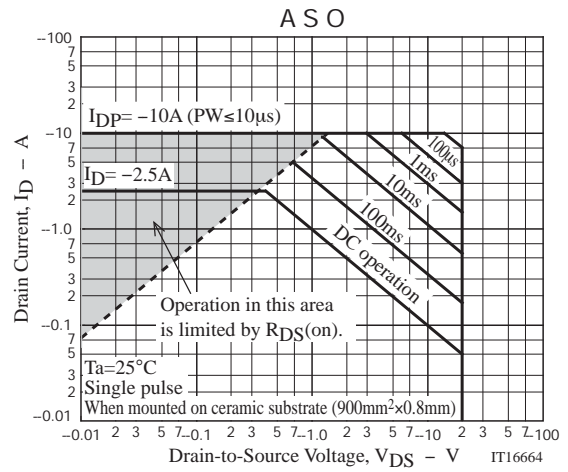
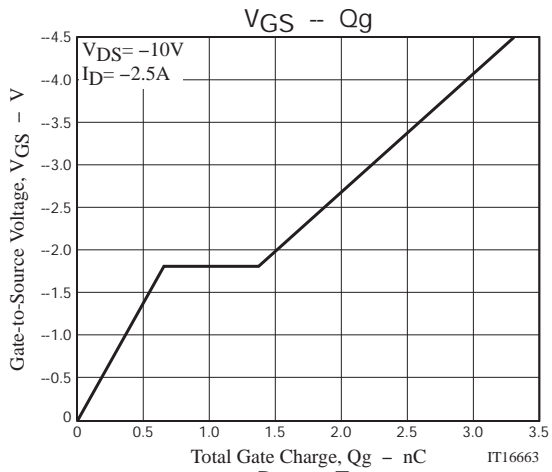
## Switching Time Test Circuit



## Ordering Information

Device	Package	Shipping	memo
CPH3356-TL-H	CPH3	3,000pcs./reel	Pb Free and Halogen Free

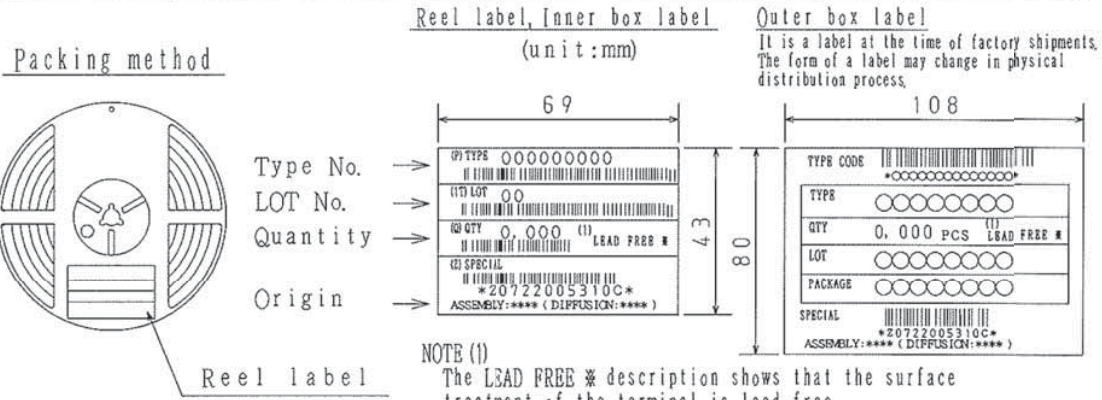




Embossed Taping Specification  
CPH3356-TL-H

1. Packing Format

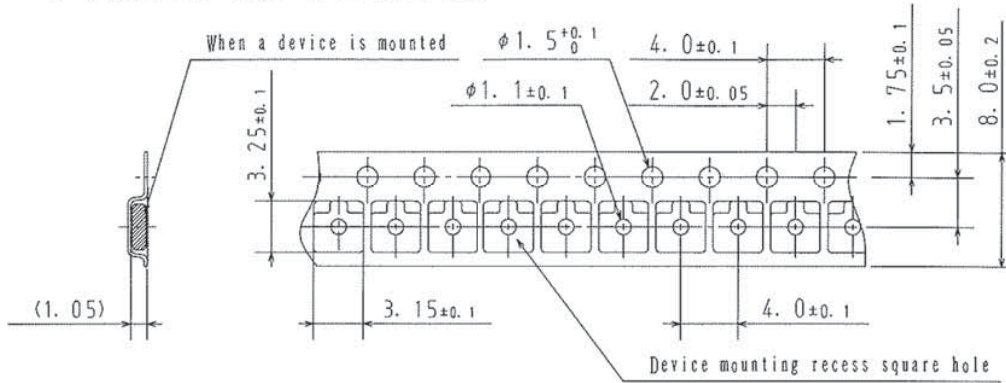
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210



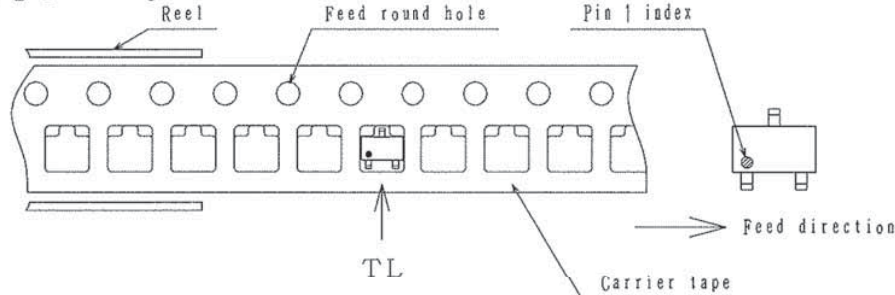
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



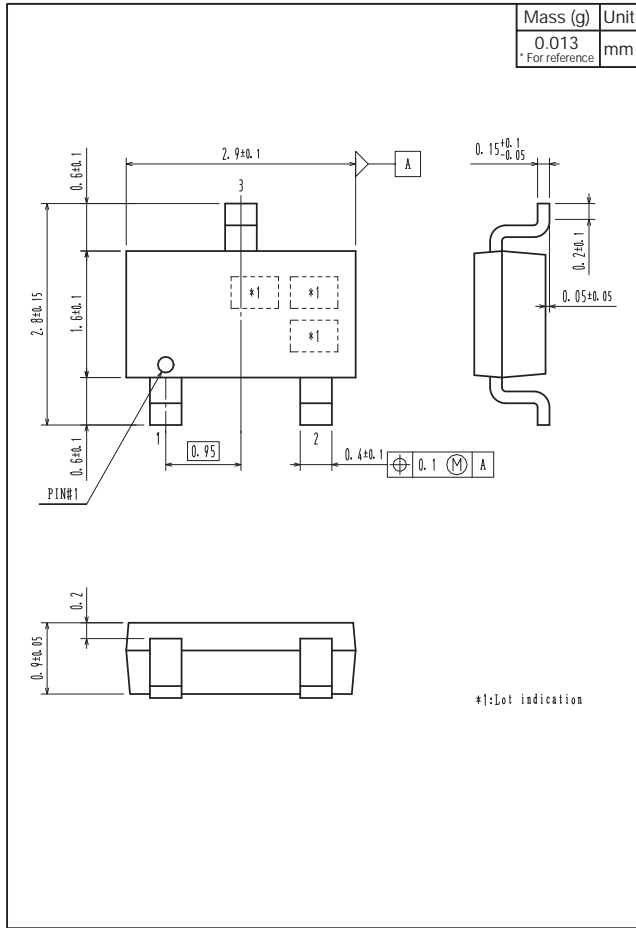
2-2. Device placement direction



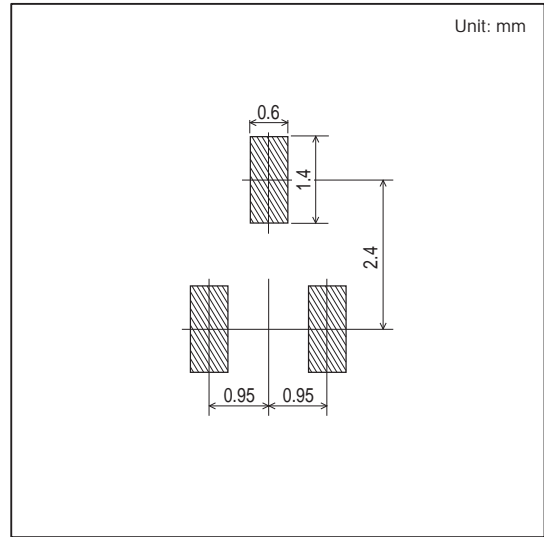
Those with one electrode terminal on the feed hole side.....TL

# CPH3356

## Outline Drawing CPH3356-TL-H



## Land Pattern Example



Note on usage : Since the CPH3356 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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