



# CPH5617

## N-Channel Power MOSFET 30V, 150mA, 3.7Ω, Dual CPH5

ON Semiconductor®

<http://onsemi.com>

### Features

- Low ON-resistance
- Ultrahigh-speed switching
- 1.5V drive
- Composite type with 2 MOSFETs contained in the one package, improving the mounting efficiency greatly

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V <sub>DSS</sub>		30	V
Gate to Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		150	mA
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	600	mA
Allowable Power Dissipation	P <sub>D</sub>		0.25	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

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

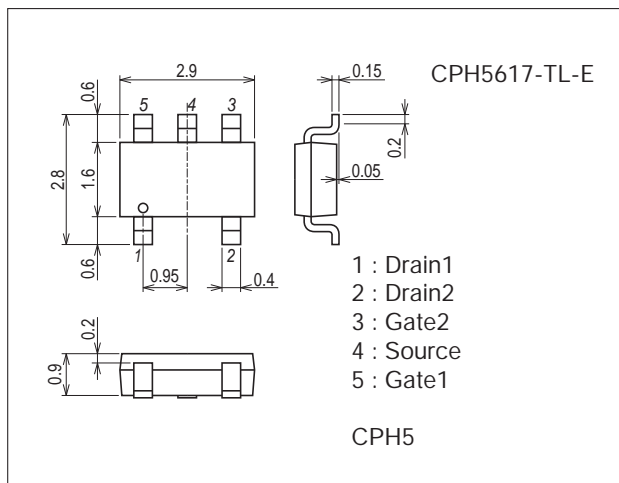
\* Machine Model

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

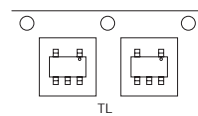
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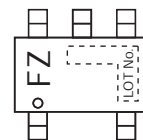
### Product & Package Information

- Package : CPH5
- JEITA, JEDEC : SC-74A, SOT-25
- Minimum Packing Quantity : 3,000 pcs./reel

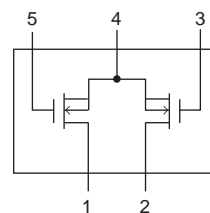
### Packing Type : TL



### Marking



### Electrical Connection

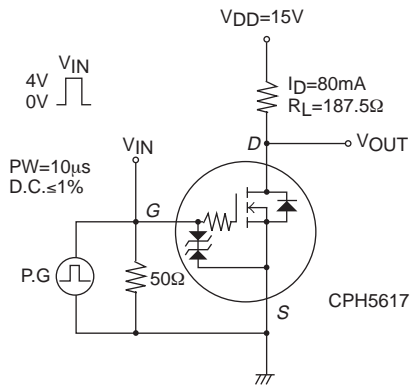


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## Electrical Characteristics at Ta=25°C

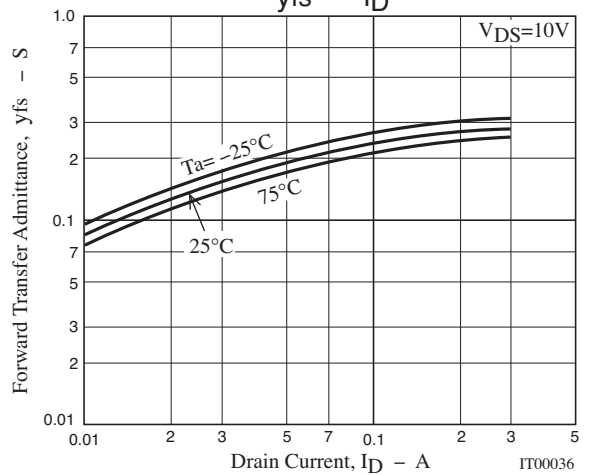
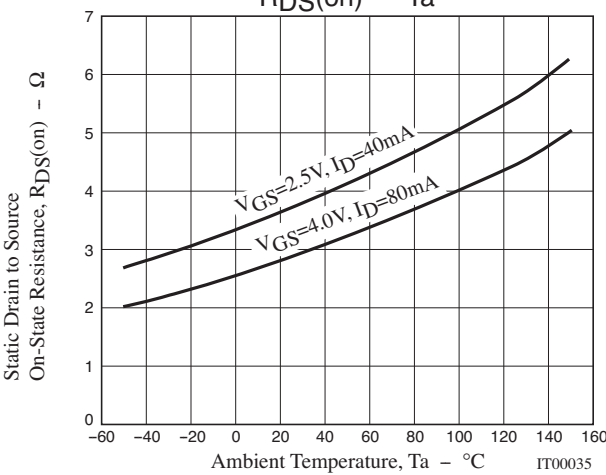
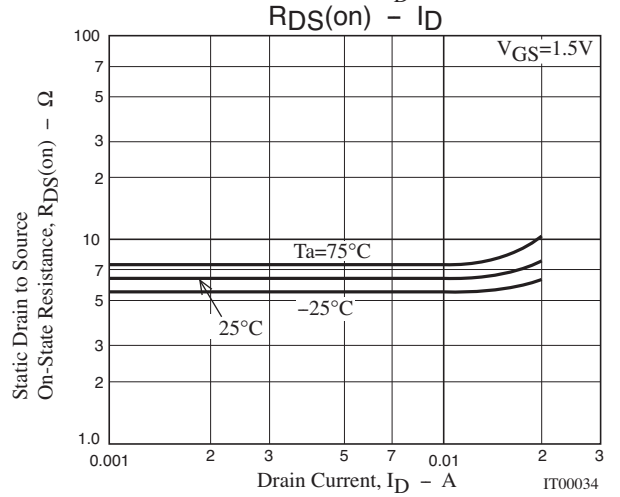
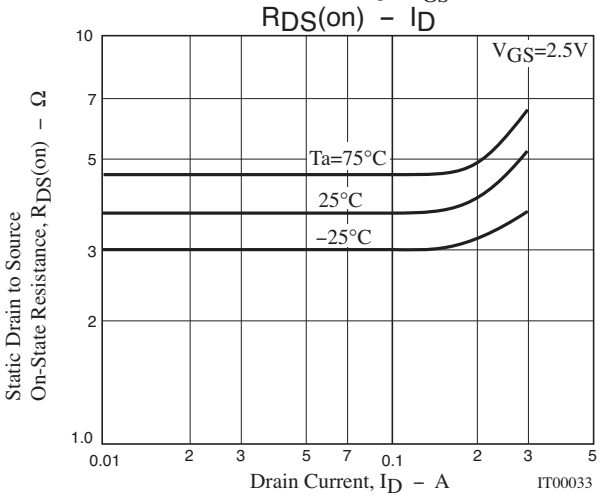
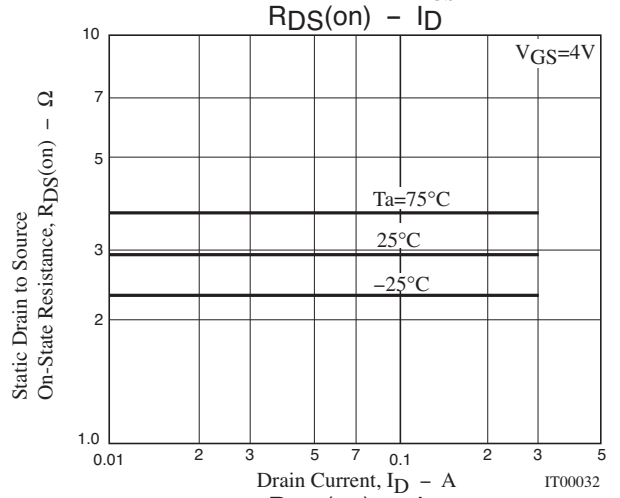
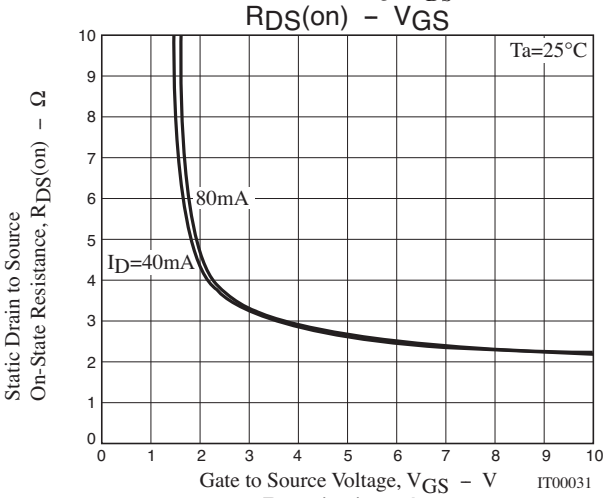
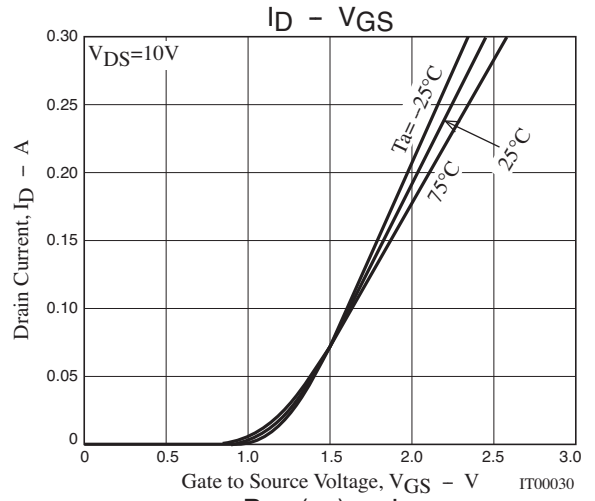
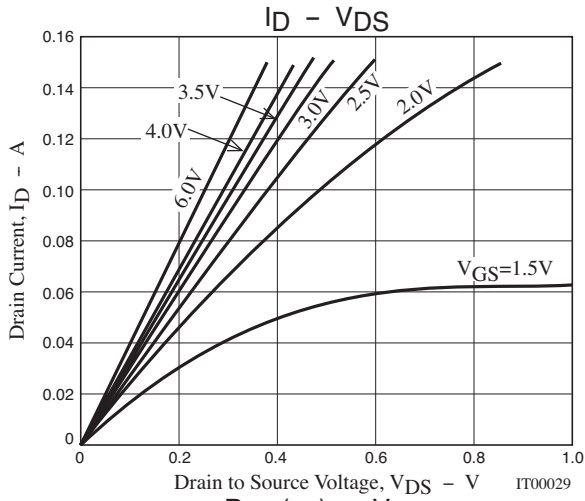
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>GS</sub> =0V	30			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			10	μA
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =100μA	0.4		1.3	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =10V, I <sub>D</sub> =80mA	0.15	0.22		S
Static Drain to Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =80mA, V <sub>GS</sub> =4V		2.9	3.7	Ω
	R <sub>DS(on)2</sub>	I <sub>D</sub> =40mA, V <sub>GS</sub> =2.5V		3.7	5.2	Ω
	R <sub>DS(on)3</sub>	I <sub>D</sub> =10mA, V <sub>GS</sub> =1.5V		6.4	12.8	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =10V, f=1MHz		7.0		pF
Output Capacitance	C <sub>oss</sub>			5.9		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			2.3		pF
Turn-ON Delay Time	t <sub>d(on)</sub>		See specified Test Circuit.		19	
Rise Time	t <sub>r</sub>			65		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>			155		ns
Fall Time	t <sub>f</sub>			120		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =10V, I <sub>D</sub> =150mA			1.58	
Gate to Source Charge	Q <sub>gs</sub>			0.26		nC
Gate to Drain "Miller" Charge	Q <sub>gd</sub>			0.31		nC
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =150mA, V <sub>GS</sub> =0V		0.87	1.2	V

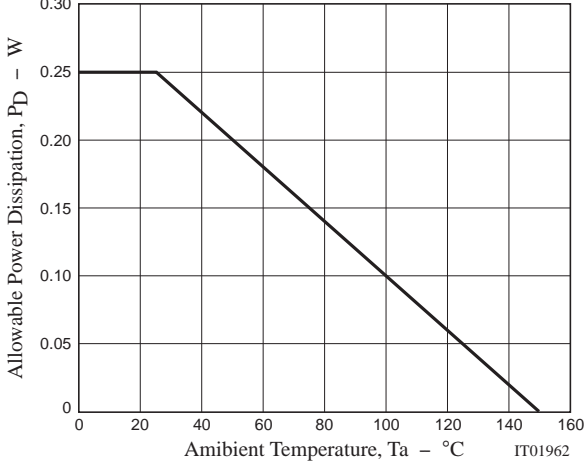
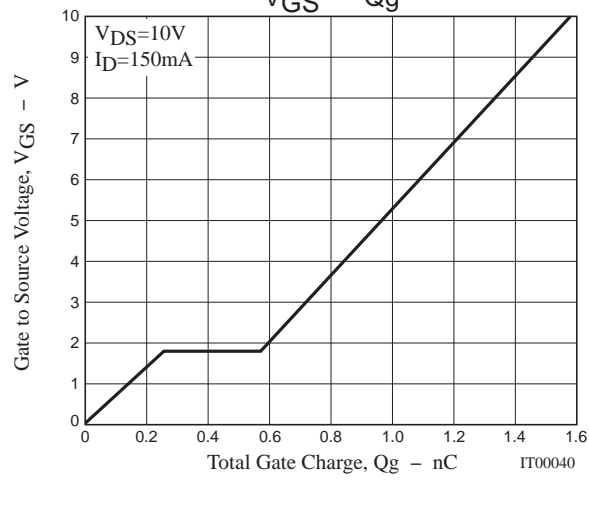
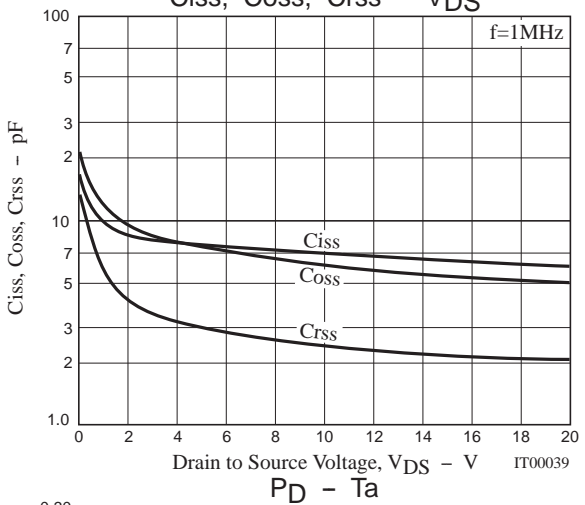
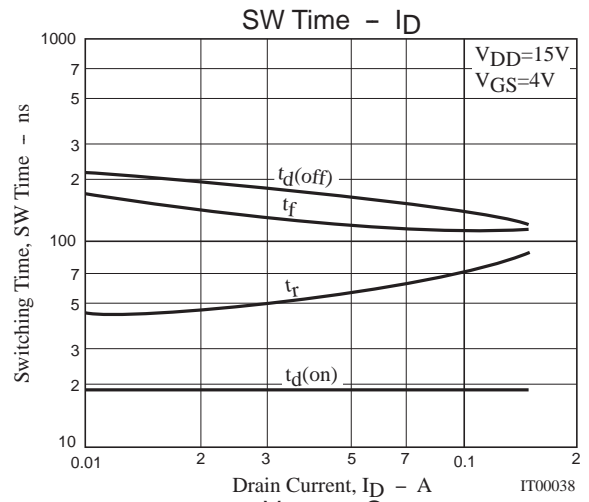
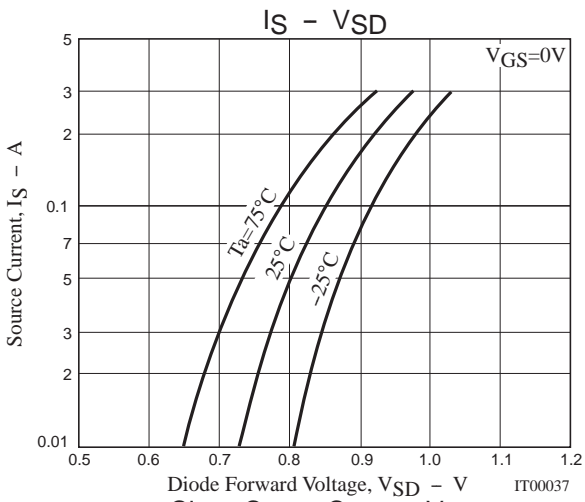
## Switching Time Test Circuit



## Ordering Information

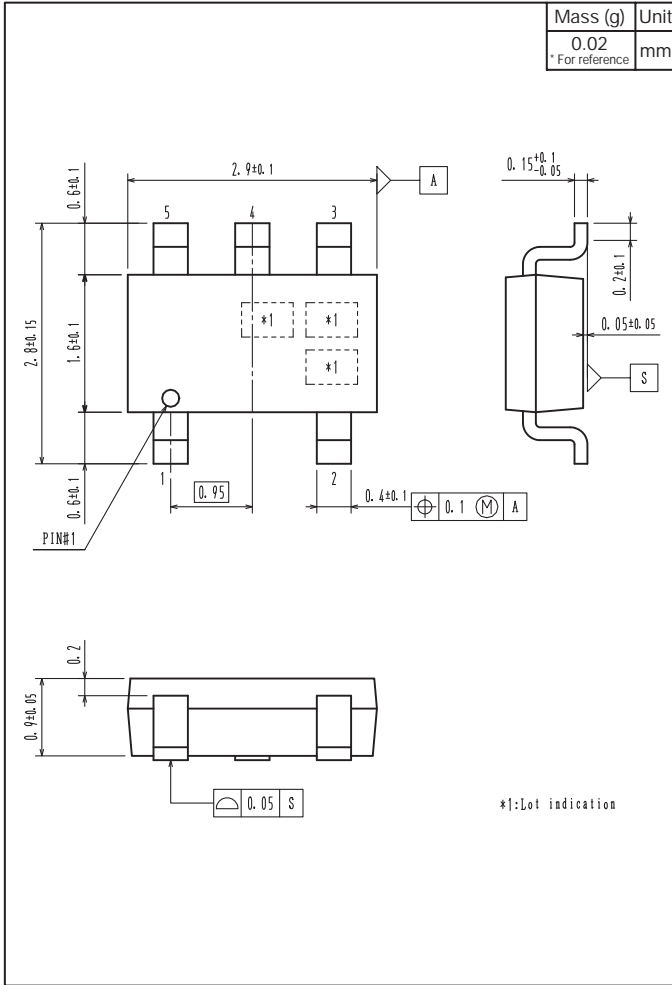
Device	Package	Shipping	memo
CPH5617-TL-E	CPH5	3,000pcs./reel	Pb Free



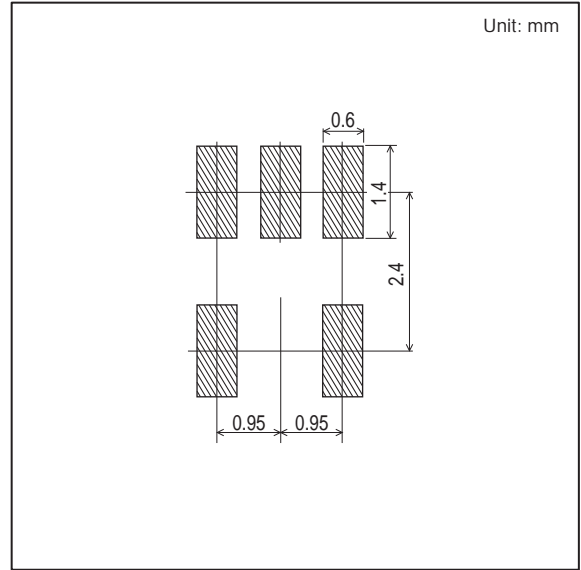


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## Outline Drawing CPH5617-TL-E



## Land Pattern Example



Note on usage : Since the CPH5617 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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