# **CPH3457**



# N-Channel Power MOSFET 30V, 3A, 95mΩ, Single CPH3

http://onsemi.com

#### **Features**

- ON-resistance RDS(on)1=73m $\Omega$ (typ.)
- · 1.8V drive
- · Halogen free compliance
- · Protection diode in

# **Specifications**

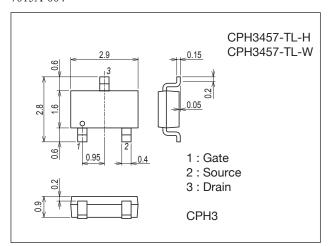
#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Value	Unit
Drain-to-Source Voltage	VDSS		30	V
Gate-to-Source Voltage	VGSS		±12	V
Drain Current (DC)	ID		3	А
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	12	А
Power Dissipation	PD	When mounted on ceramic substrate (900mm <sup>2</sup> ×0.8mm)	1.0	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

#### **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

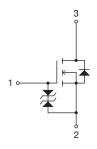
# Packing Type: TL

# B B B B TL

### Marking



#### **Electrical Connection**



#### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

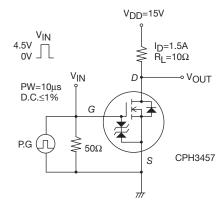
### **CPH3457**

# **Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Value			Unit
Parameter		Conditions	min	typ	max	Unit
Drain-to-Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =1mA, V <sub>G</sub> S=0V	30			V
Zero-Gate Voltage Drain Current	IDSS	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μΑ
Gate-to-Source Leakage Current	IGSS	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μΑ
Gate Threshold Voltage	VGS(th)	V <sub>DS</sub> =10V, I <sub>D</sub> =1mA	0.4		1.3	V
Forward Transconductance	9FS	V <sub>DS</sub> =10V, I <sub>D</sub> =1.5A		2.7		S
Static Drain-to-Source On-State Resistance	RDS(on)1	I <sub>D</sub> =1.5A, V <sub>G</sub> S=4.5V		73	95	mΩ
	R <sub>DS</sub> (on)2	I <sub>D</sub> =0.75A, V <sub>G</sub> S=2.5V		95	133	mΩ
	R <sub>DS</sub> (on)2	I <sub>D</sub> =0.3A, V <sub>GS</sub> =1.8V		135	203	$m\Omega$
Input Capacitance	Ciss	V <sub>DS</sub> =10V, f=1MHz		265		pF
Output Capacitance	Coss	V <sub>DS</sub> =10V, f=1MHz		35		рF
Reverse Transfer Capacitance	Crss	V <sub>DS</sub> =10V, f=1MHz		28		рF
Turn-ON Delay Time	td(on)	See specified Test Circuit.		5.1		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		10		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		137		ns
Fall Time	tf	See specified Test Circuit.		36		ns
Total Gate Charge	Qg	V <sub>DS</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		3.5		nC
Gate-to-Source Charge	Qgs	V <sub>DS</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		0.57		nC
Gate-to-Drain "Miller" Charge	Qgd	V <sub>DS</sub> =15V, V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A		0.93		nC
Forward Diode Voltage	V <sub>SD</sub>	I <sub>S</sub> =3A, V <sub>GS</sub> =0V		0.87	1.2	V

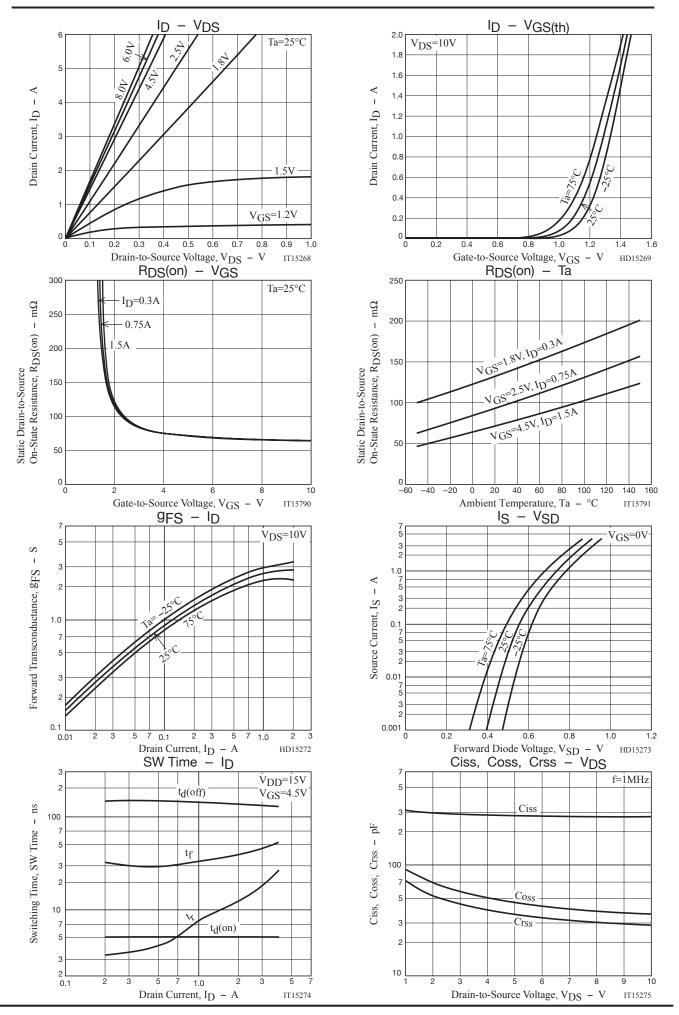
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

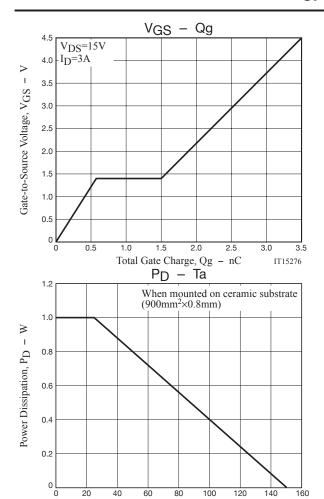
# **Switching Time Test Circuit**



# **Ordering Information**

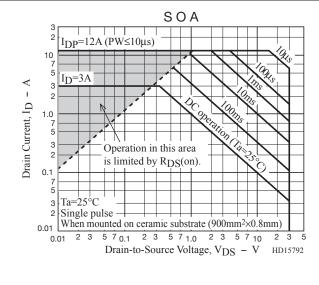
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Device Package		Shipping	memo		
CPH3457-TL-H	CPH3	2.000pag /ragl	Pb-Free and Halogen Free		
CPH3457-TL-W	CFH3	3,000pcs./reel	Pb-Free and halogen Free		





Ambient Temperature, Ta - °C

HD15789

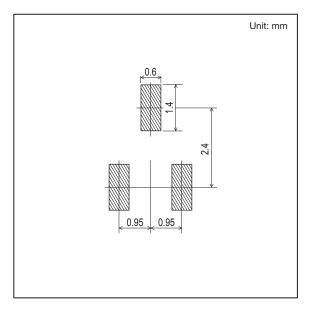


#### **Outline Drawing**

CPH3457-TL-H, CPH3457-TL-W

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#### **Land Pattern Example**



Note on usage: Since the CPH3457 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

\*1:Lot indication

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