

ON Semiconductor

Is Now

The logo for onsemi, featuring the word "onsemi" in a dark teal, lowercase, sans-serif font. The letter "i" is stylized with a white dot and a teal vertical bar. A small orange triangle is positioned above the top right of the "i". A trademark symbol (TM) is located to the right of the logo.

To learn more about onsemi™, please visit our website at
www.onsemi.com

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CPH3459

Power MOSFET 200V, 3.7Ω, 0.5A, Single N-Channel

ON Semiconductor®

<http://onsemi.com>

Features

- On-resistance $R_{DS(on)1}=2.8\Omega$ (typ)
- 4V drive
- Halogen free compliance
- Input Capacitance $C_{iss}=90\text{pF}$ (typ)
- Protection Diode in

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V_{DSS}		200	V
Gate to Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		0.5	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	2	A
Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.0	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-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.

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate (900mm ² ×0.8mm)	$R_{\theta JA}$	125	°C/W

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.

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

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	200			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=200\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.2		2.6	V
Forward Transconductance	g_{FS}	$V_{DS}=10\text{V}$, $I_D=0.25\text{A}$		0.8		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D=0.25\text{A}$, $V_{GS}=10\text{V}$		2.8	3.7	Ω
	$R_{DS(on)2}$	$I_D=0.25\text{A}$, $V_{GS}=4\text{V}$		2.9	4.1	Ω

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ORDERING INFORMATION

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

CPH3459

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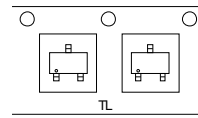
Parameter	Symbol	Conditions	Value			Unit
			min	Typ	max	
Input Capacitance	Ciss	$V_{DS}=20V, f=1MHz$		90		pF
Output Capacitance	Coss			10		pF
Reverse Transfer Capacitance	Crss			6		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		4		ns
Rise Time	t_r			3.5		ns
Turn-OFF Delay Time	$t_{d(off)}$			14		ns
Fall Time	t_f			45		ns
Total Gate Charge	Qg	$V_{DS}=100V, V_{GS}=10V, I_D=0.5A$		2.4		nC
Gate to Source Charge	Qgs			0.3		nC
Gate to Drain "Miller" Charge	Qgd			0.8		nC
Forward Diode Voltage	VSD	$I_S=0.5A, V_{GS}=0V$		0.82	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.

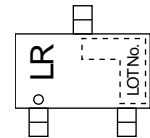
Ordering & Package Information

Device	Package	Shipping	note
CPH3459-TL-W	CPH3, SC-59 SOT-23, TO-236	3,000 pcs. / reel	Pb-Free and Halogen Free

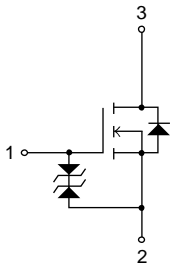
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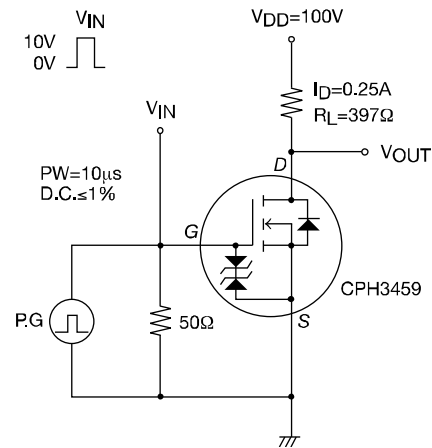
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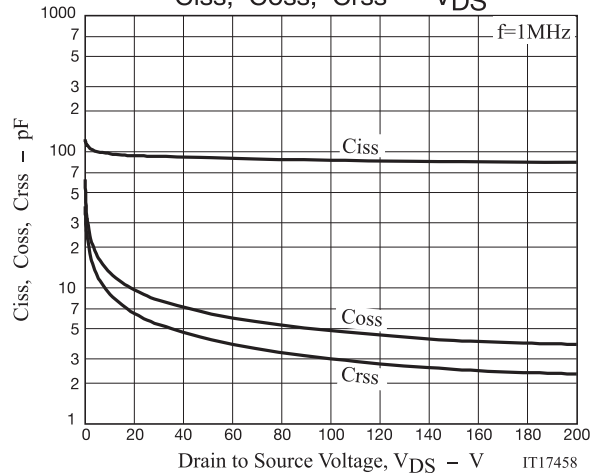
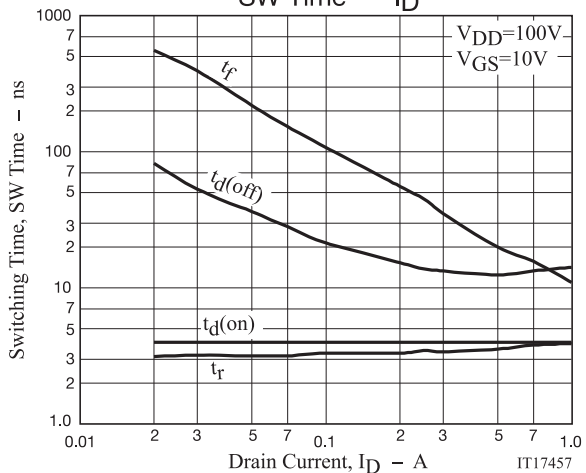
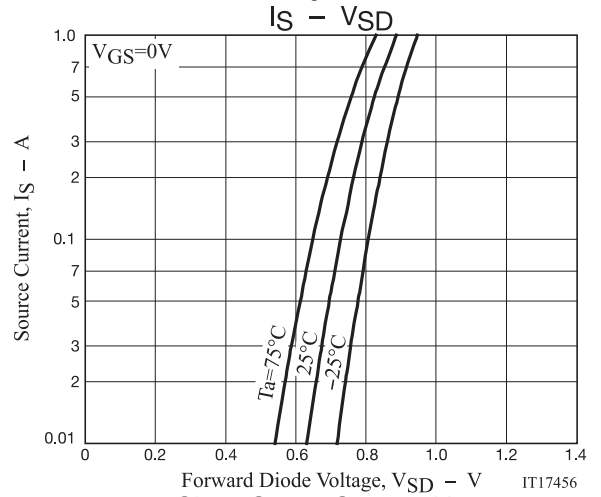
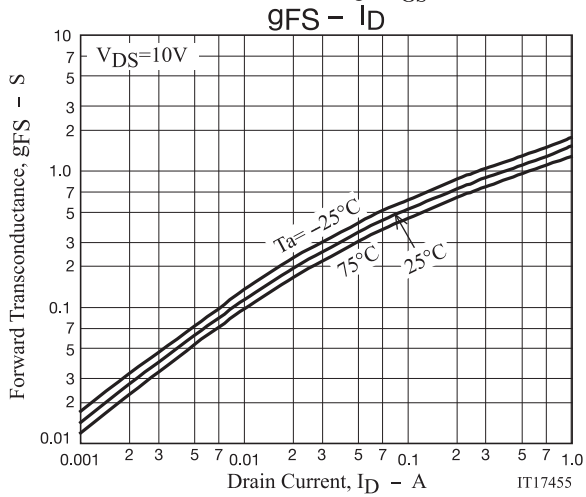
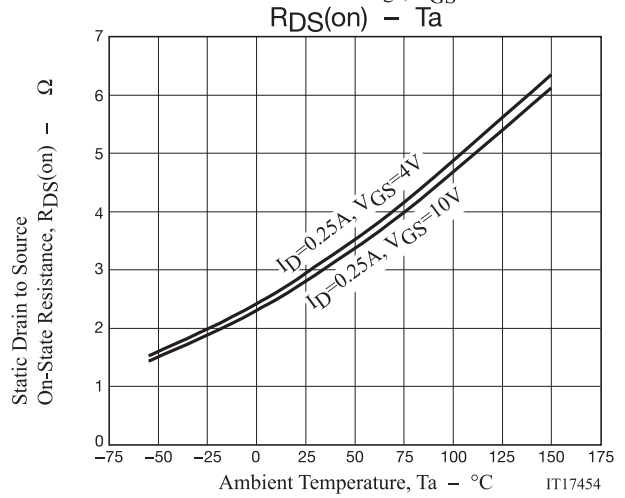
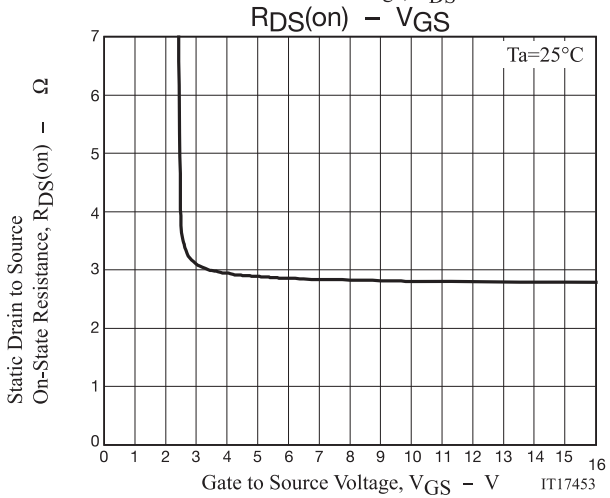
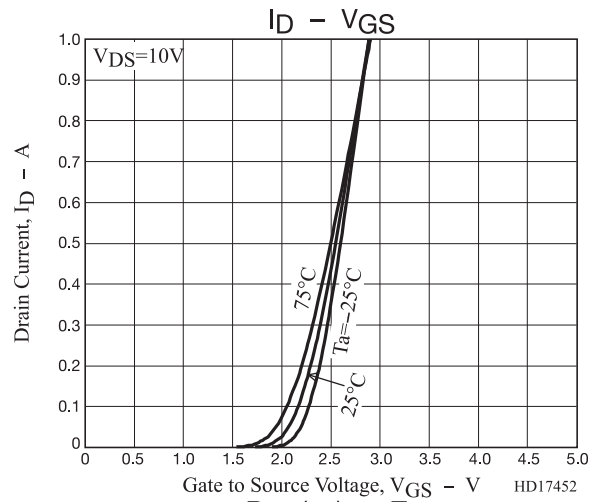
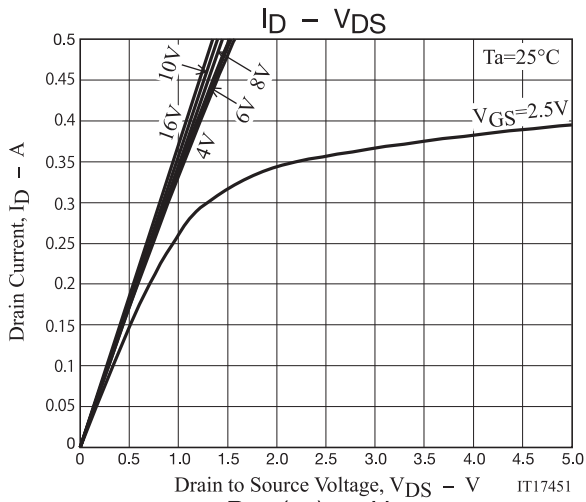


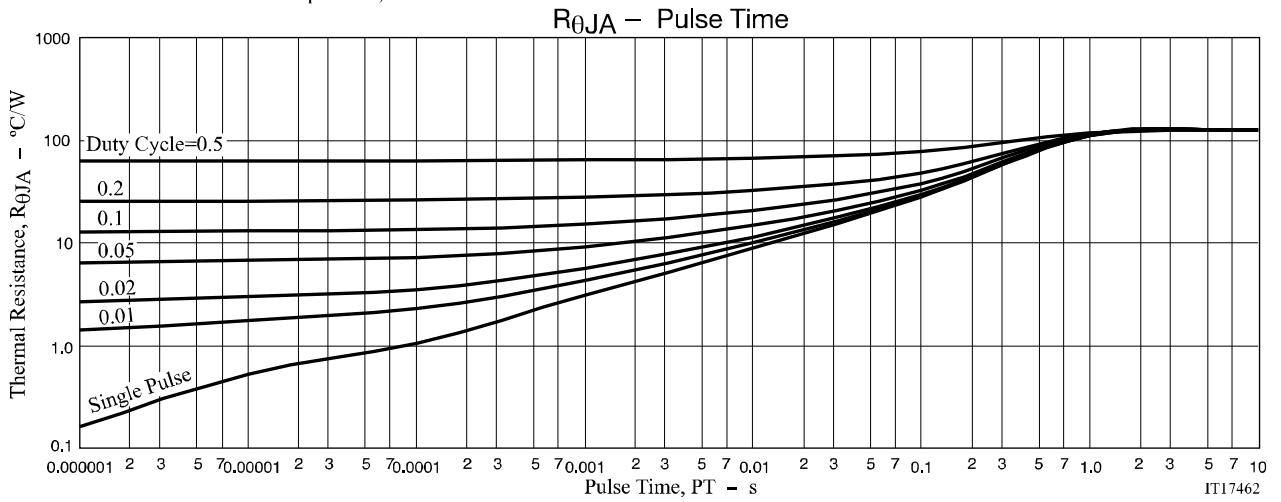
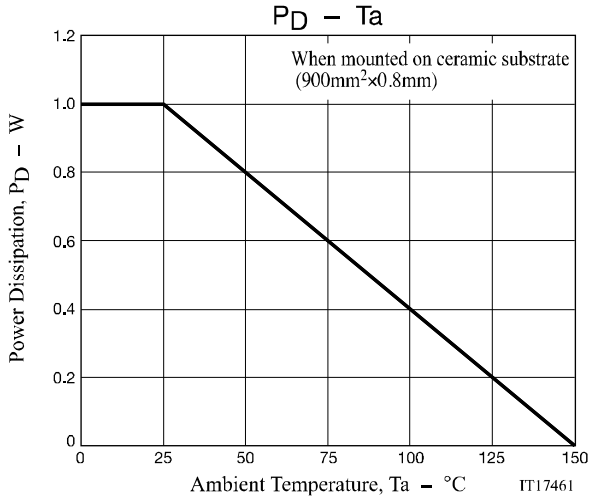
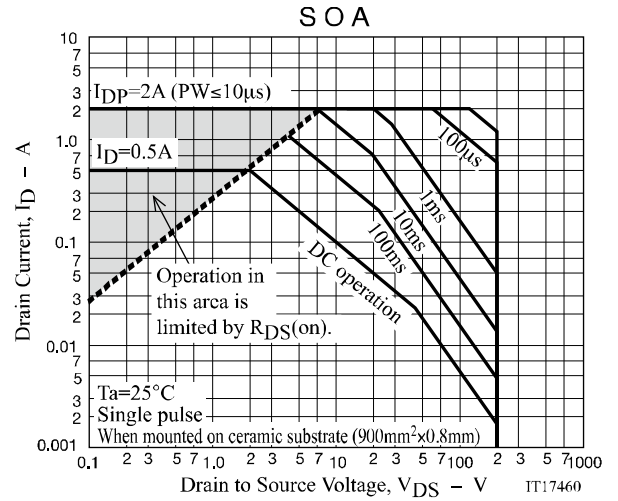
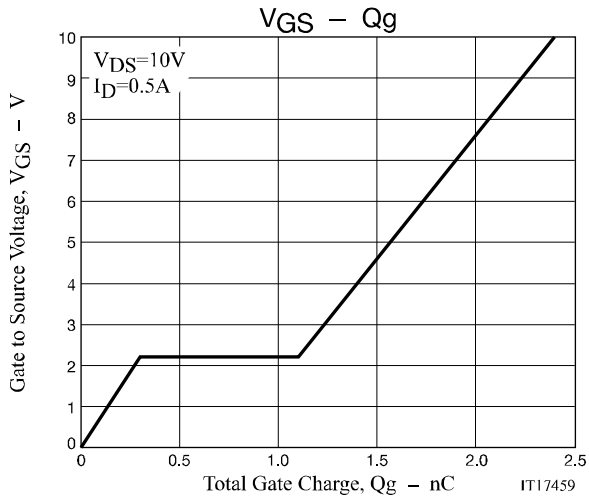
Electrical Connection



Switching Time Test Circuit







CPH3459

Package Dimensions

CPH3459-TL-W

CPH3

CASE 318BA

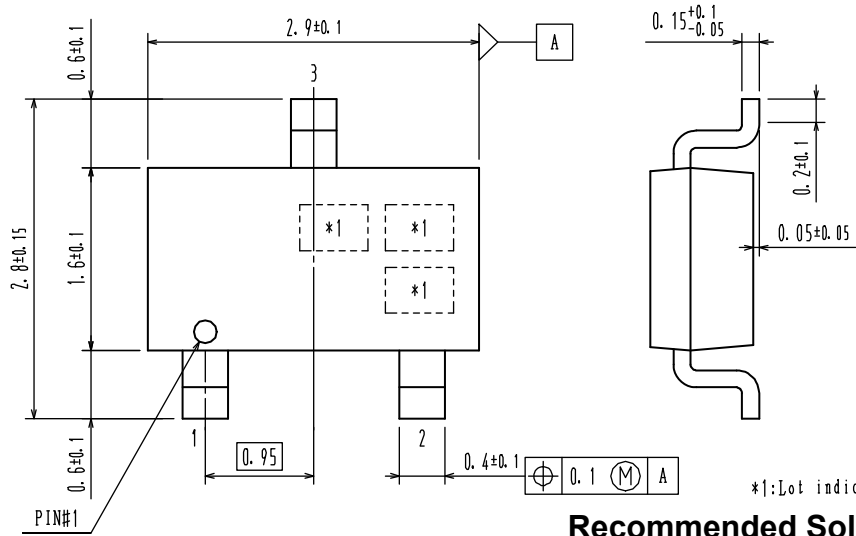
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unit : mm

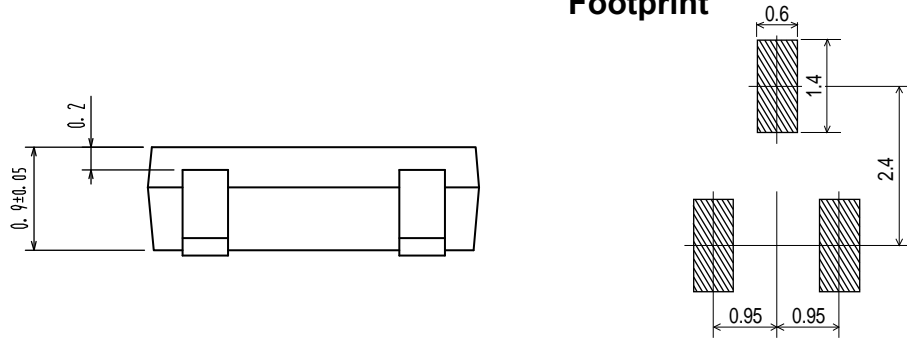
1 : Gate

2 : Source

3 : Drain



Recommended Soldering Footprint



Note on usage : Since the CPH3459 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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