Ordering number : ENA2321A

CPH3362

Power MOSFET
–100V, 1.7Ω, –0.7A, Single P-Channel

ON Semiconductor®

http://onsemi.com

Features

- On-resistance $R_{DS}(on)1$=1.3Ω (typ)
- 4V drive
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Value	Unit
Drain to Source Voltage	V_{DSS}		–100	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		–0.7	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	–2.8	A
Power Dissipation	P_D	When mounted on ceramic substrate (900mm^2×0.8mm)	1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

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

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

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0V	–100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V, V_{GS}=0V			-1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=–10V, I_D=–1mA	–1.2		–2.6	V
Forward Transconductance	g_{FS}	V_{DS}=–10V, I_D=–0.3A		1.0		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=–0.7A, V_{GS}=–10V		1.3	1.7	Ω
	$R_{DS}(on)2$	I_D=–0.3A, V_{GS}=–4.5V		1.4	1.96	Ω
	$R_{DS}(on)3$	I_D=–0.3A, V_{GS}=–4V		1.45	2.1	Ω
Input Capacitance	Ciss	V_{DS}=–20V, f=1MHz		142		pF
Output Capacitance	Coss			12		pF
Reverse Transfer Capacitance	Crss			7.3		pF

Continued on next page.

ORDERING INFORMATION

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

Continued from preceding page.

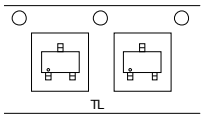
Parameter	Symbol	Conditions	Value			Unit
			min	Typ	max	
Turn-ON Delay Time	$t_{d}(on)$	See specified Test Circuit		3.9		ns
Rise Time	t_{r}			3.4		ns
Turn-OFF Delay Time	$t_{d}(off)$			28		ns
Fall Time	t_{f}			12		ns
Total Gate Charge	Qg	V_{DS}=–50V, V_{GS}=–10V, I_{D}=–0.7A		3.7		nC
Gate to Source Charge	Qgs			0.37		nC
Gate to Drain “Miller” Charge	Qgd			0.86		nC
Forward Diode Voltage	V_{SD}	I_{S}=–0.7A, V_{GS}=0V		–0.83	–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.

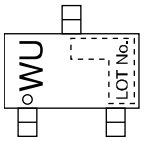
Ordering & Package Information

Device	Package	Shipping	note
CPH3362-TL-W	CPH3, SC-59 SOT-23, TO-236	3,000 pcs. / reel	Pb-Free and Halogen Free

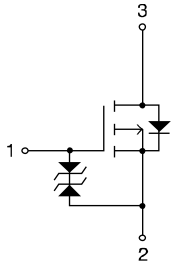
Packing Type:TL



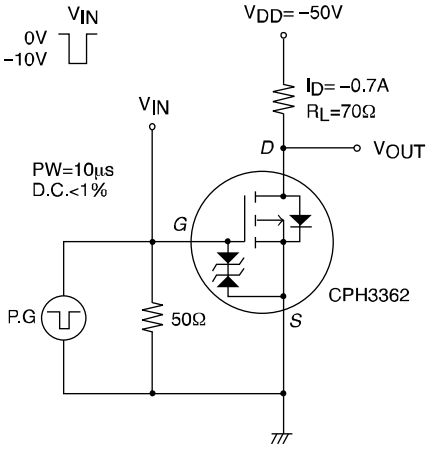
Marking

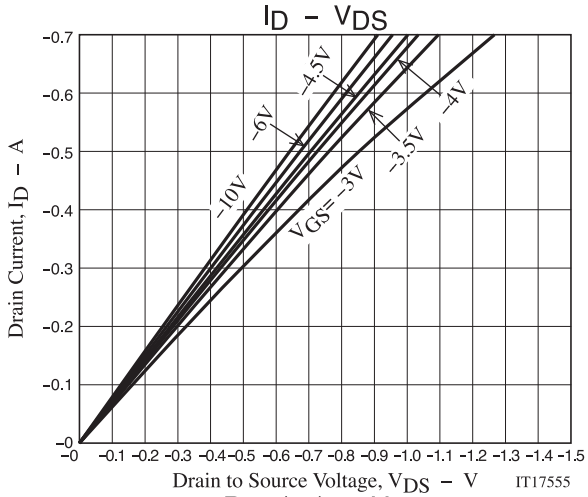


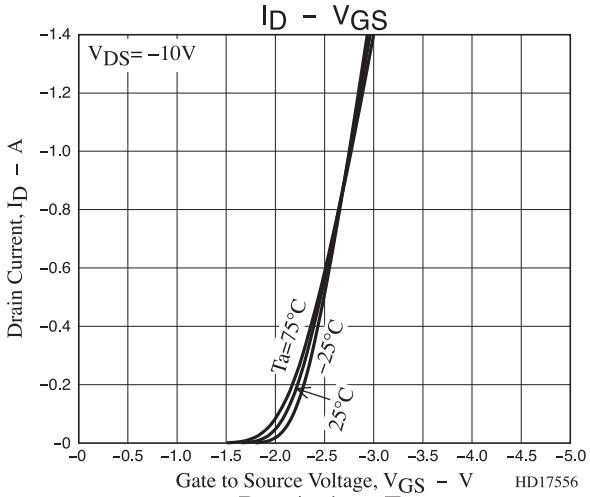
Electrical Connection

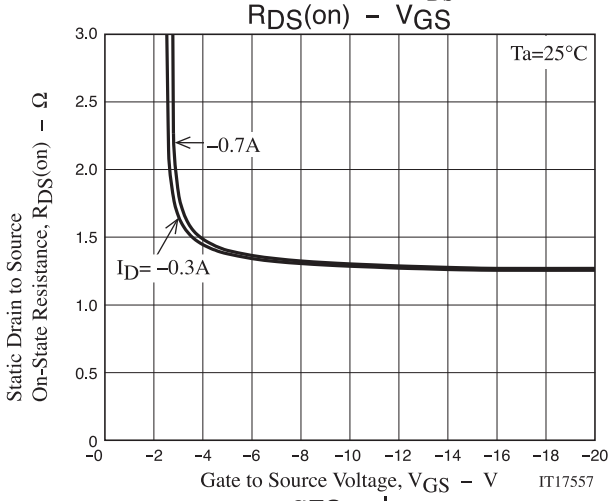


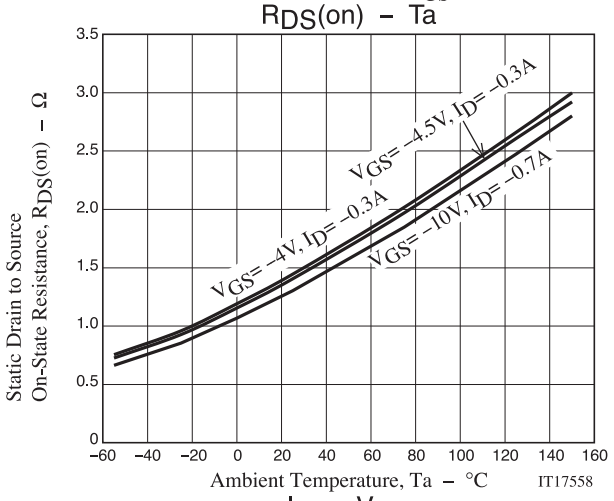
Switching Time Test Circuit

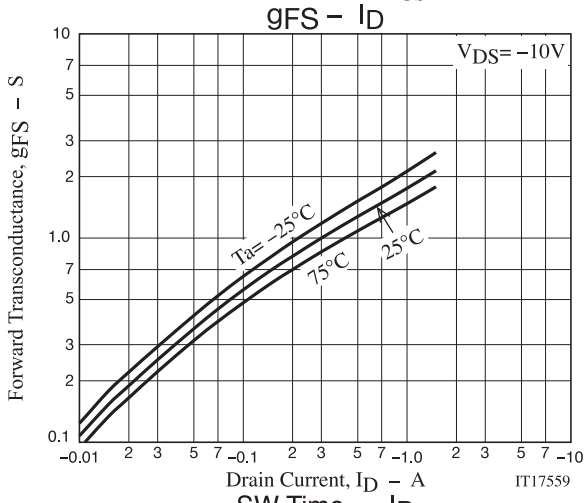


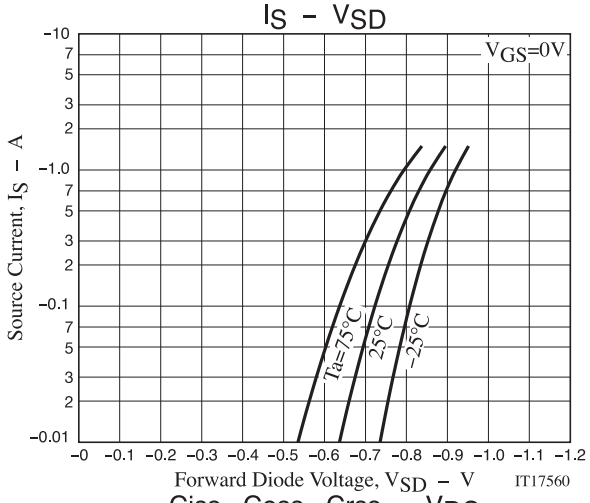

ID – VDS
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT17555
–10V
–6V
–4.5V
–4V
–3.5V
VGS= –3V

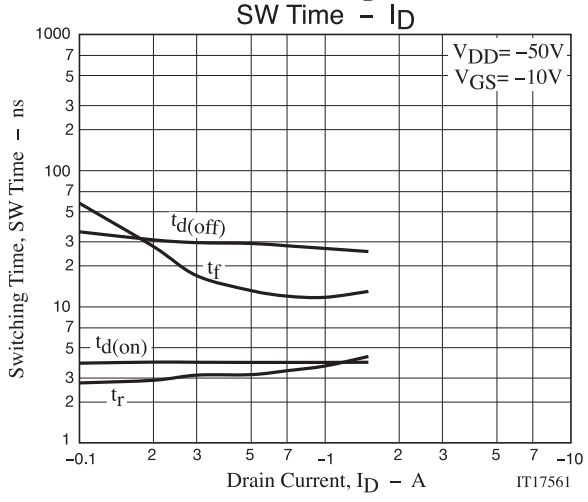

ID – VGS
VDS= –10V
Drain Current, ID – A
Gate to Source Voltage, VGS – V
HD17556
Ta=75°C
25°C
–25°C

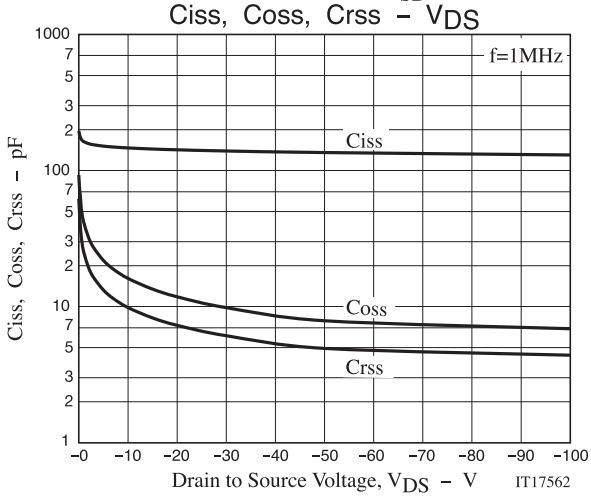

RDS(on) – VGS
Ta=25°C
Static Drain to Source
On-State Resistance, RDS(on) – Ω
Gate to Source Voltage, VGS – V
IT17557
–0.7A
ID= –0.3A

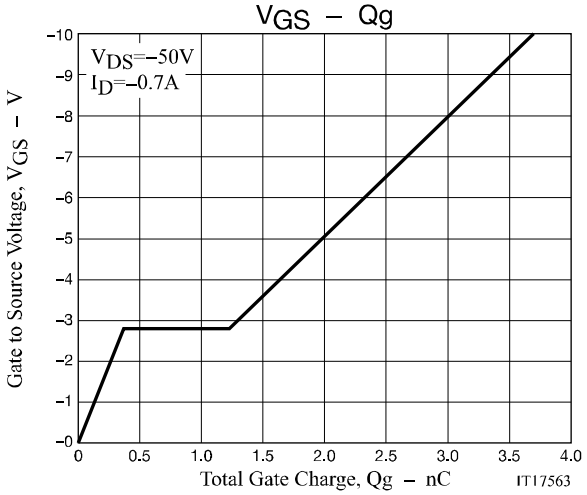

RDS(on) – Ta
Static Drain to Source
On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT17558
VGS= –4.5V, ID= –0.3A
VGS= –4V, ID= –0.3A
VGS= –10V, ID= –0.7A

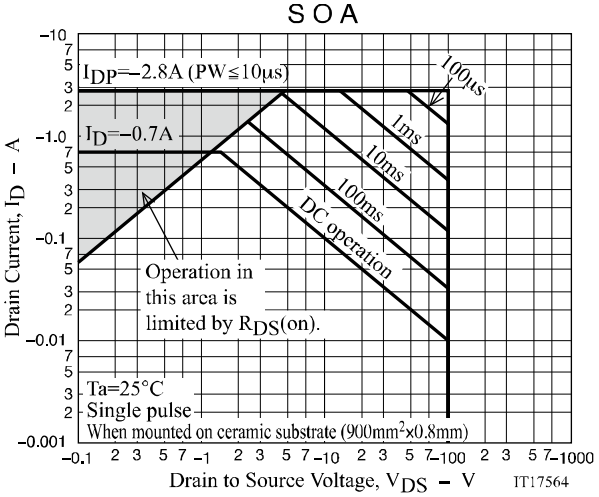

gFS – ID
VDS= –10V
Forward Transconductance, gFS – S
Drain Current, ID – A
IT17559
Ta= –25°C
75°C
25°C

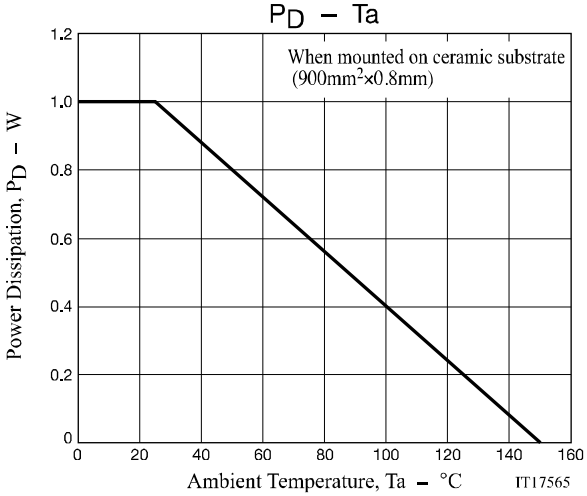

IS – VSD
VGS=0V
Source Current, IS – A
Forward Diode Voltage, VSD – V
IT17560
Ta=75°C
25°C
–25°C

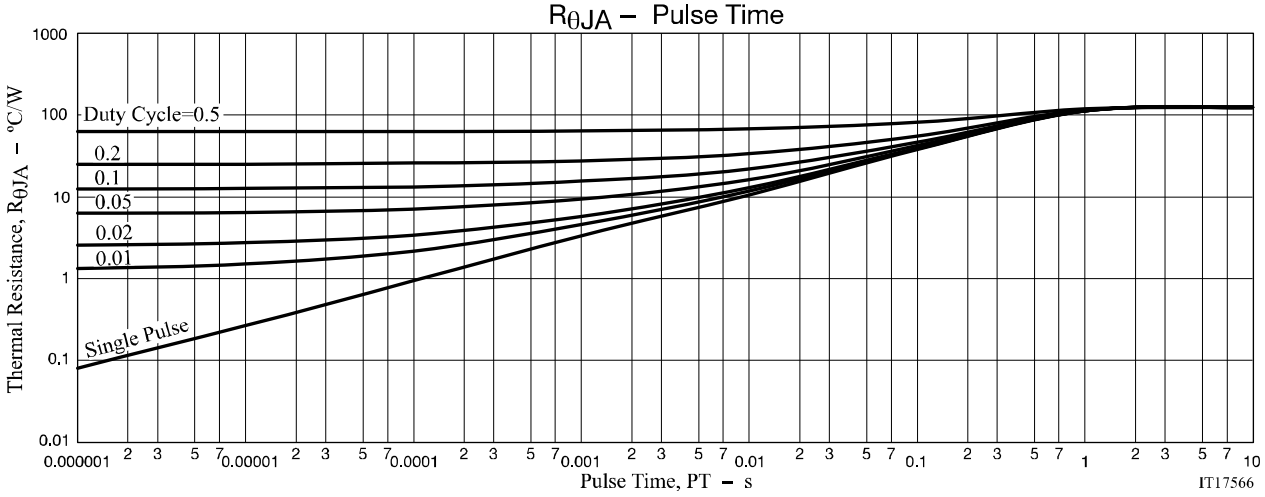

SW Time – ID
VDD= –50V
VGS= –10V
Switching Time, SW Time – ns
Drain Current, ID – A
IT17561
td(off)
tf
td(on)
tr


Ciss, Coss, Crss – VDS
f=1MHz
Ciss, Coss, Crss – pF
Drain to Source Voltage, VDS – V
IT17562
Ciss
Coss
Crss


VGS – Qg
VDS=–50V
ID=–0.7A
Gate to Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT17563


S O A
IDP=–2.8A (PW≤10μs)
ID=–0.7A
100μs
1ms
10ms
100ms
DC operation
Operation in this area is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (900mm2×0.8mm)
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT17564


PD – Ta
When mounted on ceramic substrate (900mm2×0.8mm)
Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT17565


RθJA – Pulse Time
Duty Cycle=0.5
0.2
0.1
0.05
0.02
0.01
Single Pulse
Thermal Resistance, RθJA – °C/W
Pulse Time, PT – s
IT17566

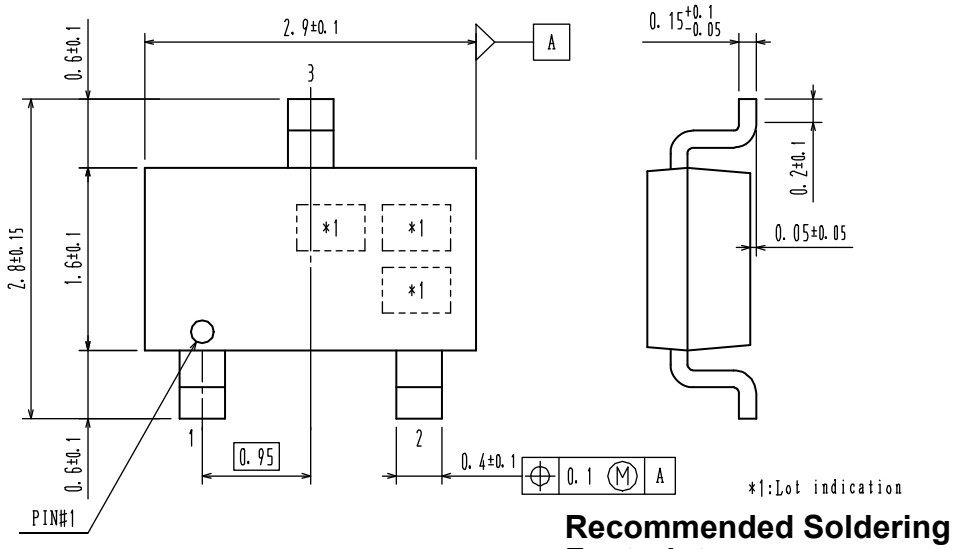
Package Dimensions

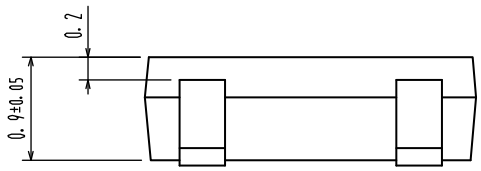
CPH3362-TL-W

CPH3

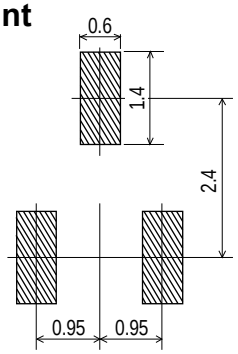
CASE 318BA
ISSUE O
unit : mm

1: Gate
2: Source
3: Drain





Recommended Soldering Footprint



Note on usage : Since the CPH3362 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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