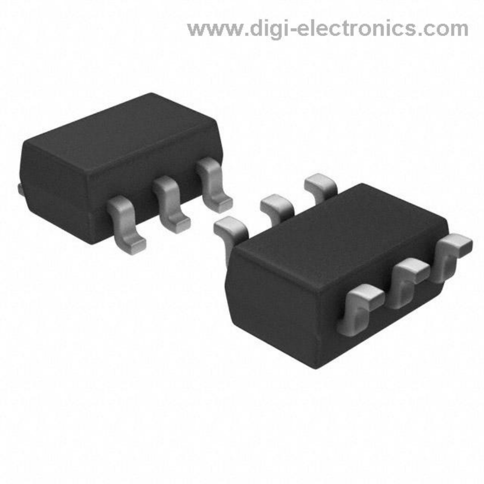
CPH6337-TL-E Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	CPH6337-TL-E-DG
Manufacturer	onsemi
Manufacturer Product Number	CPH6337-TL-E
Description	MOSFET P-CH 12V 3.5A 6CPH
Detailed Description	P-Channel 12 V 3.5A (Ta) 1.6W (Ta) Surface Mount 6-CPH

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
CPH6337-TL-E	onsemi
Series:	Product Status:
-	Obsolete
FET Type:	Technology:
P-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
12 V	3.5A (Ta)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
1.8V, 4.5V	70mOhm @ 1.5A, 4.5V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
1.4V @ 1mA	5.6 nC @ 4.5 V
Vgs (Max):	Input Capacitance (Ciss) (Max) @ Vds:
±10V	405 pF @ 6 V
FET Feature:	Power Dissipation (Max):
-	1.6W (Ta)
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Supplier Device Package:	Package / Case:
6-CPH	SOT-23-6
Base Product Number:	
CPH633	

Environmental & Export classification

Moisture Sensitivity Level (MSL):	REACH Status:
1 (Unlimited)	REACH Unaffected
ECCN:	HTSUS:
EAR99	8541.29.0095

CPH6337

Power MOSFET
–12V, 70mΩ, –3.5A, Single P-Channel

ON Semiconductor®

www.onsemi.com

This Power MOSFET is produced using ON Semiconductor's trench technology, which is specifically designed to minimize gate charge and low on resistance. This device is suitable for applications with low gate charge driving or low on resistance requirements.

Features

- Low On-Resistance
- High Speed Switching
- 1.8V drive
- Pb-Free and RoHS compliance
- Halogen Free compliance : CPH6337-TL-W

Typical Applications

- Load Switch

V_{DSS}	R_{DS}(on) Max	I_D Max
–12V	70mΩ@ –4.5V	–3.5A
	115mΩ@ –2.5V	
	215mΩ@ –1.8V	

SPECIFICATIONS

ABSOLUTE MAXIMUM RATING at Ta = 25°C (Note 1, 2)

Parameter	Symbol	Value	Unit
Drain to Source Voltage	V_{DSS}	–12	V
Gate to Source Voltage	V_{GSS}	±10	V
Drain Current (DC)	I_D	–3.5	A
Drain Current (Pulse) PW ≤ 10μs, duty cycle ≤ 1%	I_{DP}	–14	A
Power Dissipation When mounted on ceramic substrate ($1200mm^2 \times 0.8mm$)	P_D	1.6	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	–55 to +150	°C

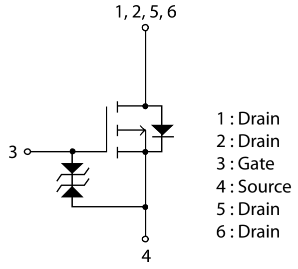
Note 1 : Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

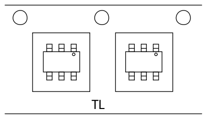
THERMAL RESISTANCE RATINGS

Parameter	Symbol	Value	Unit
Junction to Ambient When mounted on ceramic substrate ($1200mm^2 \times 0.8mm$)	$R_{\theta JA}$	78.1	°C/W

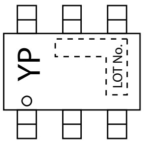
ELECTRICAL CONNECTION
P-Channel



PACKING TYPE : TL



MARKING



ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

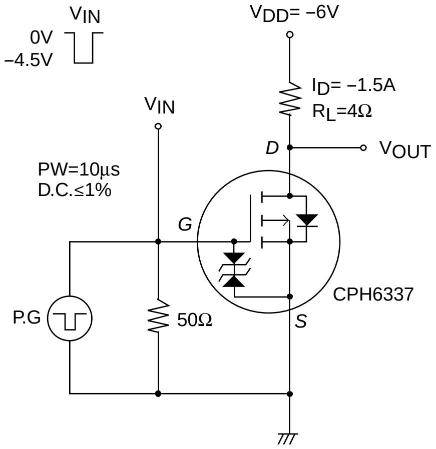
September 2015 - Rev. 2

ELECTRICAL CHARACTERISTICS at Ta = 25°C (Note 3)

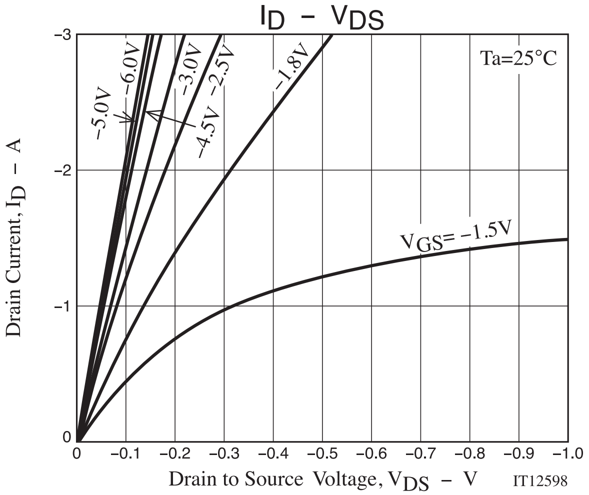
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=–1mA, V_{GS}=0V	–12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=–12V, V_{GS}=0V			–10	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V			±10	μA
Gate Threshold Voltage	$V_{GS}(th)$	V_{DS}=–6V, I_D=–1mA	–0.4		–1.4	V
Forward Transconductance	g_{FS}	V_{DS}=–6V, I_D=–1.5A	2.7	4.5		S
Static Drain to Source On-State Resistance	$R_{DS}(on)1$	I_D=–1.5A, V_{GS}=–4.5V		54	70	mΩ
	$R_{DS}(on)2$	I_D=–0.8A, V_{GS}=–2.5V		80	115	mΩ
	$R_{DS}(on)3$	I_D=–0.3A, V_{GS}=–1.8V		125	215	mΩ
Input Capacitance	Ciss	V_{DS}=–6V, f=1MHz		405		pF
Output Capacitance	Coss			145		pF
Reverse Transfer Capacitance	Crss			100		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		8.8		ns
Rise Time	t_r			80		ns
Turn-OFF Delay Time	$t_d(off)$			41		ns
Fall Time	t_f			50		ns
Total Gate Charge	Qg	V_{DS}=–6V, V_{GS}=–4.5V, I_D=–3.5A		5.6		nC
Gate to Source Charge	Qgs			0.7		nC
Gate to Drain “Miller” Charge	Qgd			1.6		nC
Forward Diode Voltage	V_{SD}	I_S=–3.5A, V_{GS}=0V		–0.86	–1.5	V

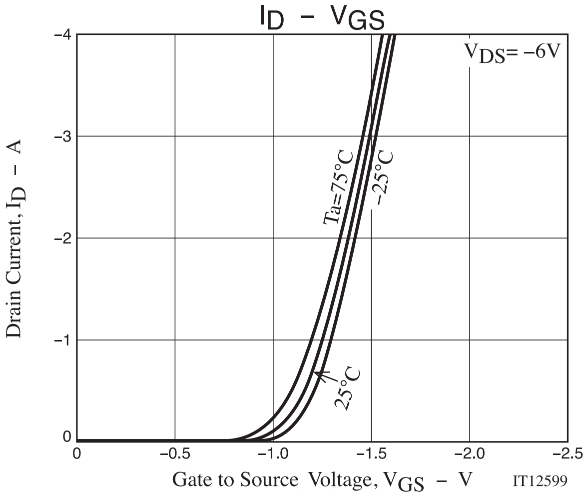
Note 3 : Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

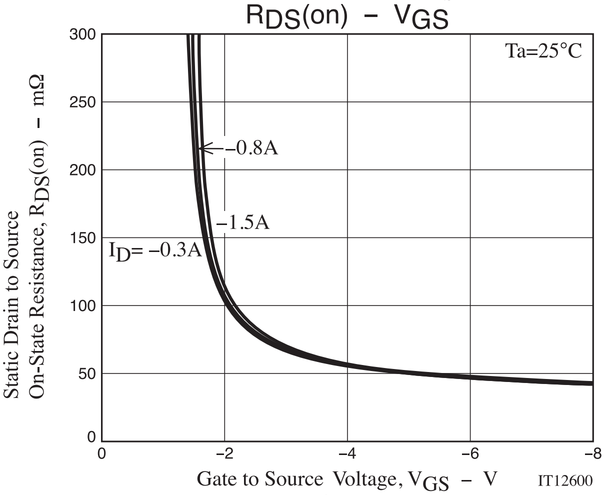
Switching Time Test Circuit

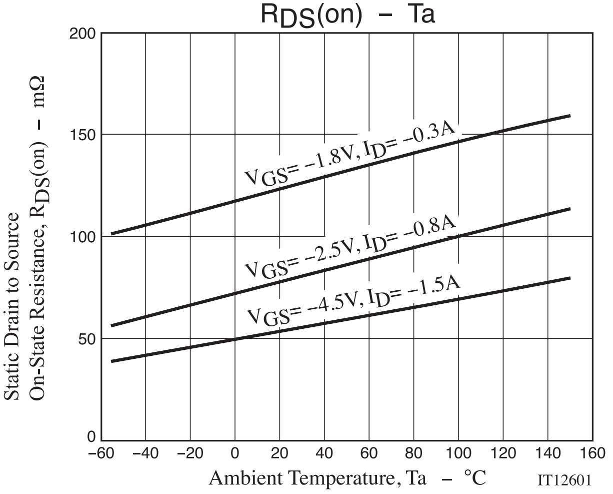


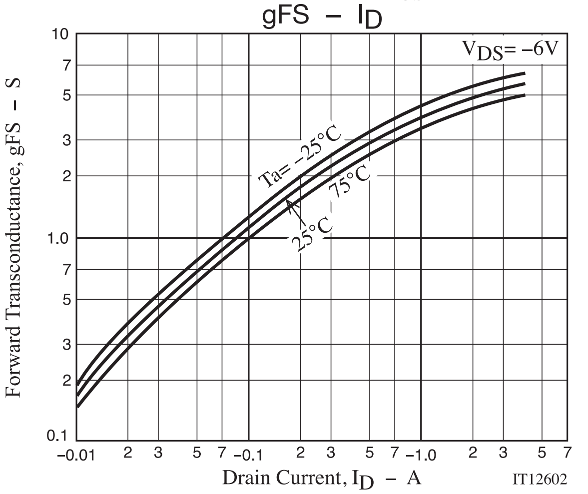
CPH6337

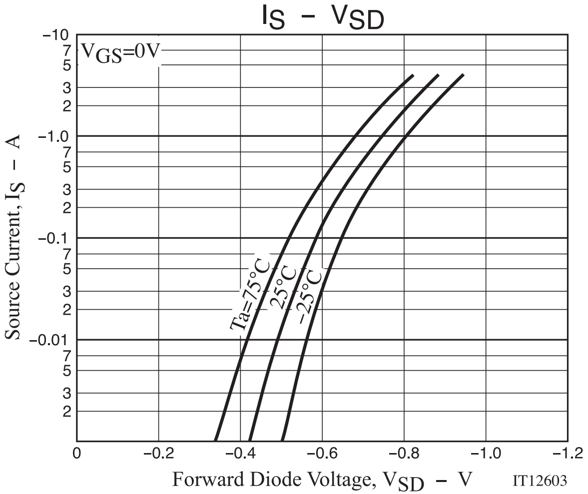

ID – VDS

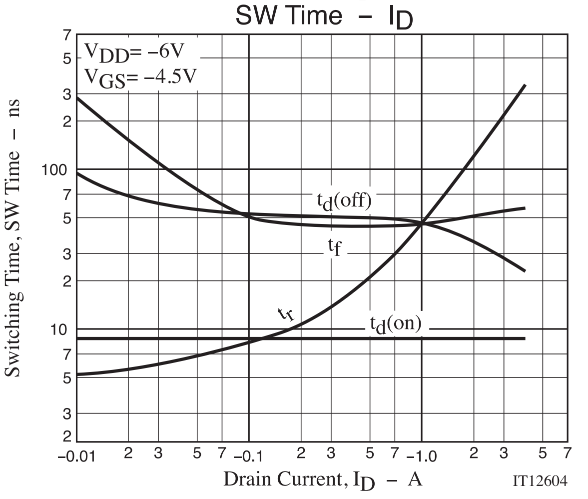

ID – VGS

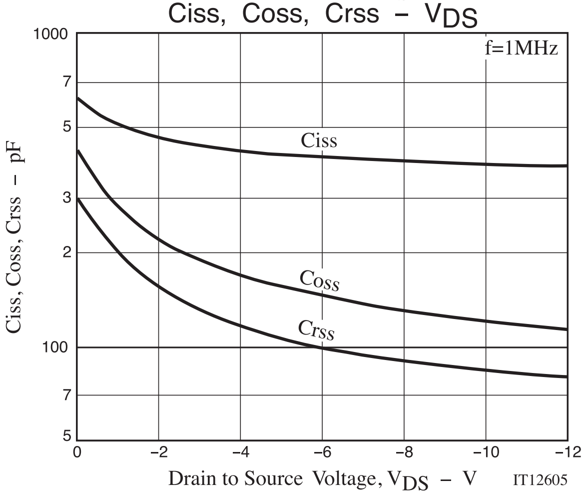

RDS(on) – VGS

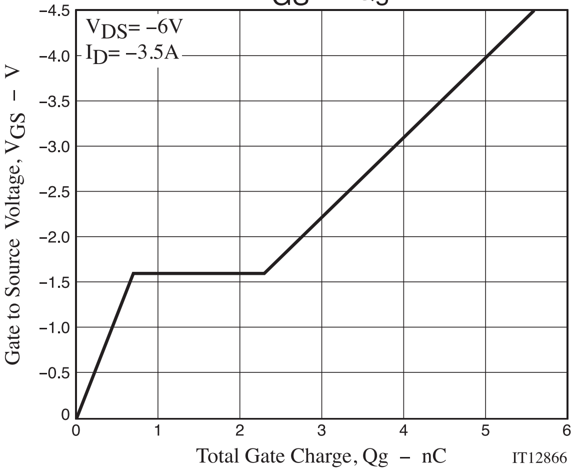

RDS(on) – Ta

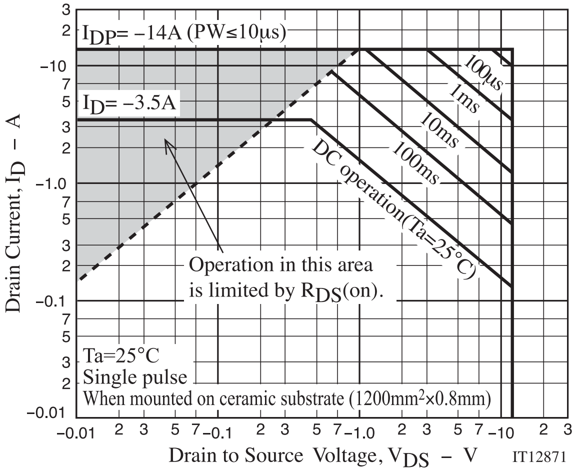

gFS – ID

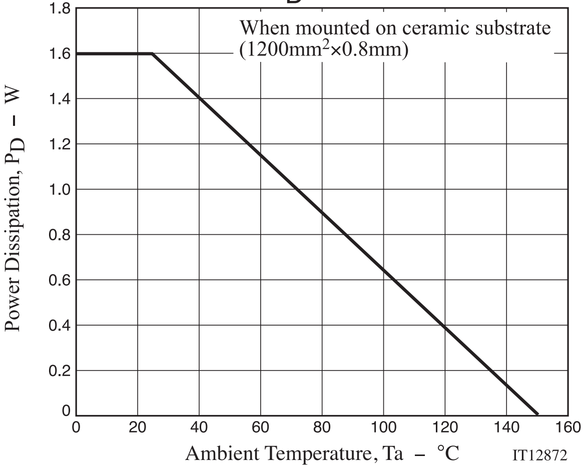

IS – VSD

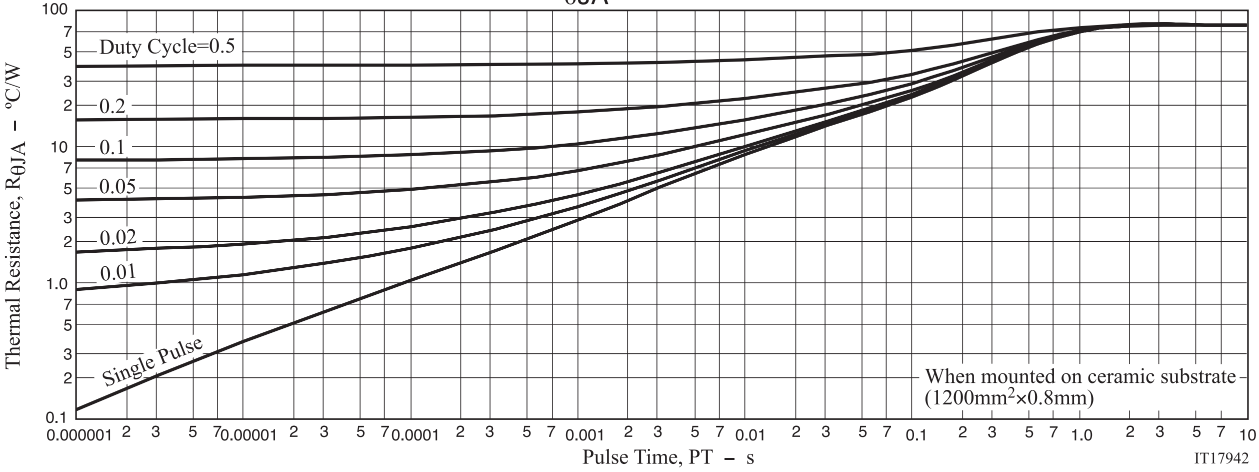

SW Time – ID


Ciss, Coss, Crss – VDS


V_{GS} – Qg


S O A

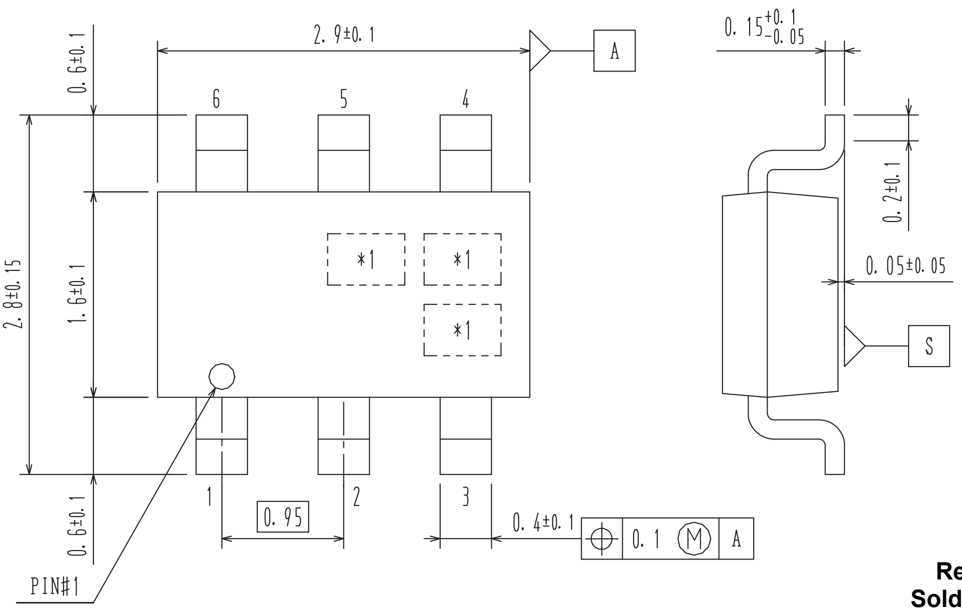

P_D – Ta


$R_{\theta JA}$ – Pulse Time

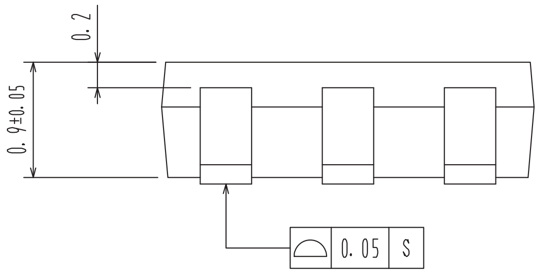
PACKAGE DIMENSIONS

unit : mm

CPH6
CASE 318BD
ISSUE O

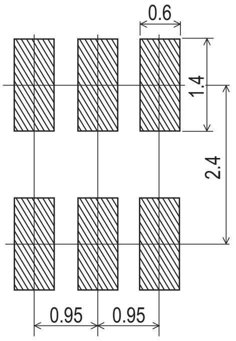


*1:Lot indication



1 : Drain
2 : Drain
3 : Gate
4 : Source
5 : Drain
6 : Drain

Recommended Soldering Footprint



ORDERING INFORMATION

Device	Marking	Package	Shipping (Qty / Packing)
CPH6337-TL-E	YP	CPH6 (Pb-Free)	3,000 / Tape & Reel
CPH6337-TL-W		CPH6 (Pb-Free / Halogen Free)	

† For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D. http://www.onsemi.com/pub_link/Collateral/BRD8011-D.PDF

Note on usage : Since the CPH6337 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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CR
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I hereby certify that
DIGI ELECTRONICS HK LIMITED
is this day incorporated in Hong Kong under the Companies Ordinance
(Chapter 622 of the Laws of Hong Kong), and that this company is
a limited company.
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Hong Kong Special Administrative Region

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MEMBERSHIP
Certificate
The Aviation Suppliers Association has enrolled as a Regular Member
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Michele Dickstein
President

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