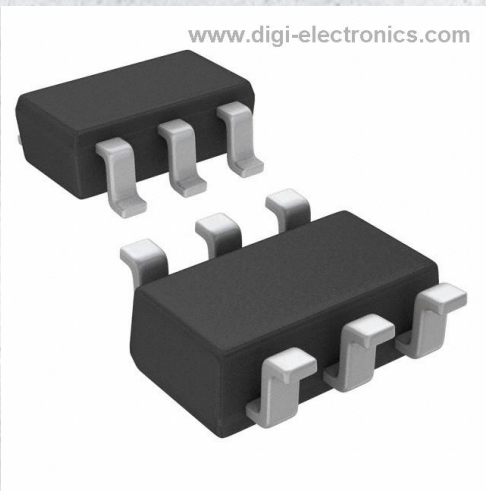
CPH6350-TL-W Datasheet



https://www.DiGi-Electronics.com

DiGi Electronics Part Number	CPH6350-TL-W-DG
Manufacturer	onsemi
Manufacturer Product Number	CPH6350-TL-W
Description	MOSFET P-CH 30V 6A 6CPH
Detailed Description	P-Channel 30 V 6A (Ta) 1.6W (Ta) Surface Mount 6-CPH

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
CPH6350-TL-W	onsemi
Series:	Product Status:
-	Active
FET Type:	Technology:
P-Channel	MOSFET (Metal Oxide)
Drain to Source Voltage (Vdss):	Current - Continuous Drain (Id) @ 25°C:
30 V	6A (Ta)
Drive Voltage (Max Rds On, Min Rds On):	Rds On (Max) @ Id, Vgs:
4V, 10V	43mOhm @ 3A, 10V
Vgs(th) (Max) @ Id:	Gate Charge (Qg) (Max) @ Vgs:
-	13 nC @ 10 V
Vgs (Max):	Input Capacitance (Ciss) (Max) @ Vds:
±20V	600 pF @ 10 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:	
CPH6350	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.29.0095	

Ordering number : ENA1529B

CPH6350

P-Channel Power MOSFET
−30V, −6A, 43mΩ, Single CPH6

ON Semiconductor®
http://onsemi.com

Features

- 4V drive
- Low ON-resistance
- Protection diode in

Specifications

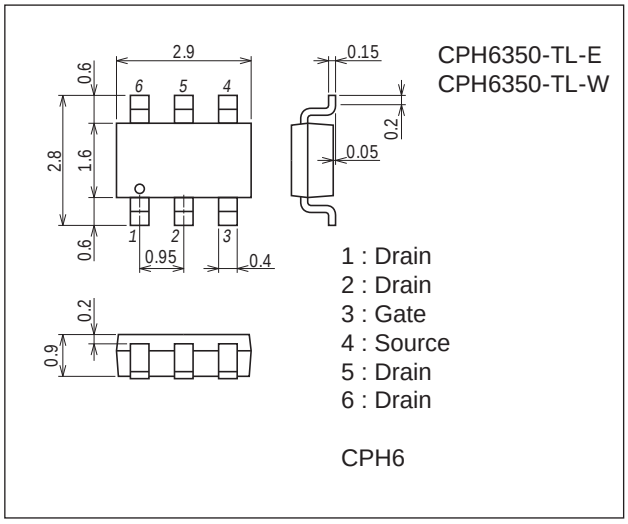
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain to Source Voltage	V_{DSS}		−30	V
Gate to Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		−6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−24	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm²×0.8mm)	1.6	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		−55 to +150	°C

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

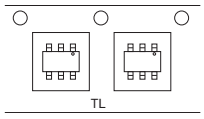
unit : mm (typ)
7018A-003



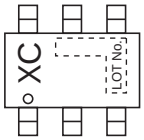
Ordering & Package Information

Device	Package	Shipping	memo
CPH6350-TL-E	CPH6 SC-74, SOT-26, SOT-457	3,000pcs./ reel	Pb-Free
CPH6350-TL-W	CPH6 SC-74, SOT-26, SOT-457	3,000pcs./ reel	Pb-Free and Halogen Free

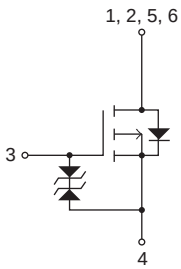
Packing Type: TL



Marking



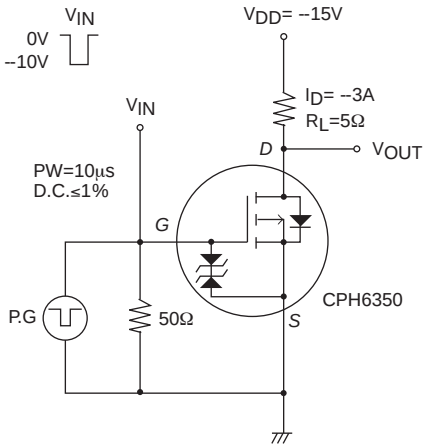
Electrical Connection



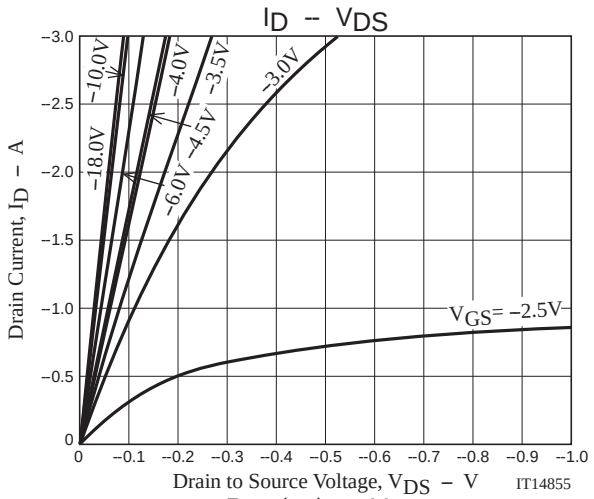
Electrical Characteristics at Ta=25°C

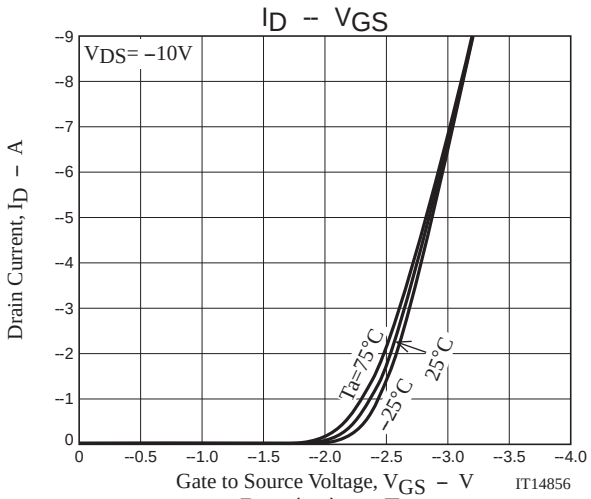
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−3A		5.4		S
Static Drain to Source On-State Resistance	R_{DS}(on)1	I_D=−3A, V_{GS}=−10V		33	43	mΩ
	R_{DS}(on)2	I_D=−1.5A, V_{GS}=−4.5V		58	82	mΩ
	R_{DS}(on)3	I_D=−1.5A, V_{GS}=−4V		61	86	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		600		pF
Output Capacitance	Coss			145		pF
Reverse Transfer Capacitance	Crss			110		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		7.4		ns
Rise Time	t_r			27		ns
Turn-OFF Delay Time	t_d(off)			62		ns
Fall Time	t_f			45		ns
Total Gate Charge	Qg	V_{DS}=−15V, V_{GS}=−10V, I_D=−6A		13		nC
Gate to Source Charge	Qgs			1.8		nC
Gate to Drain “Miller” Charge	Qgd			3.2		nC
Diode Forward Voltage	V_{SD}	I_S=−6A, V_{GS}=0V		−0.87	−1.2	V

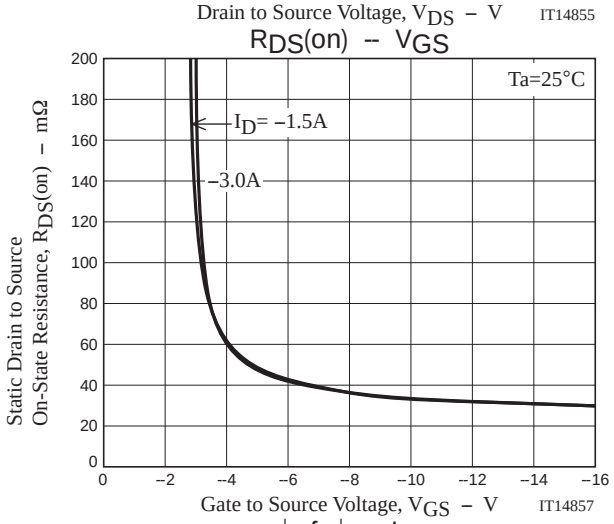
Switching Time Test Circuit

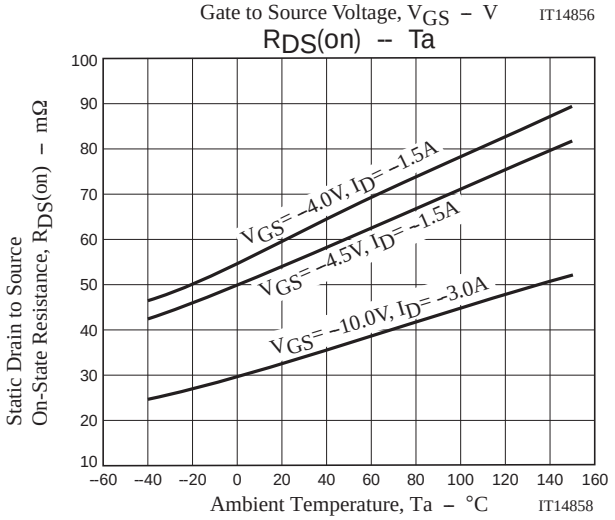


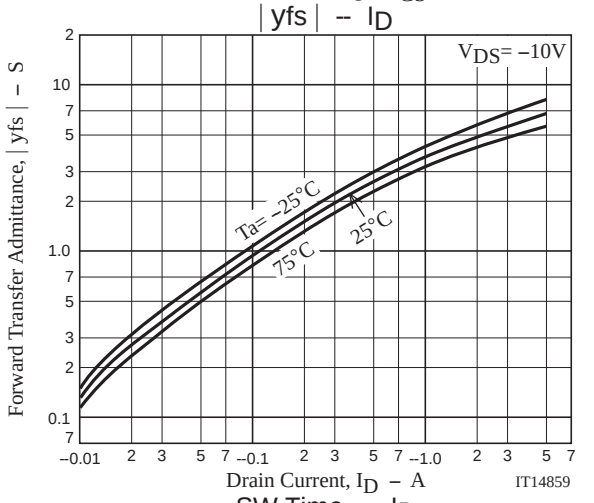
CPH6350

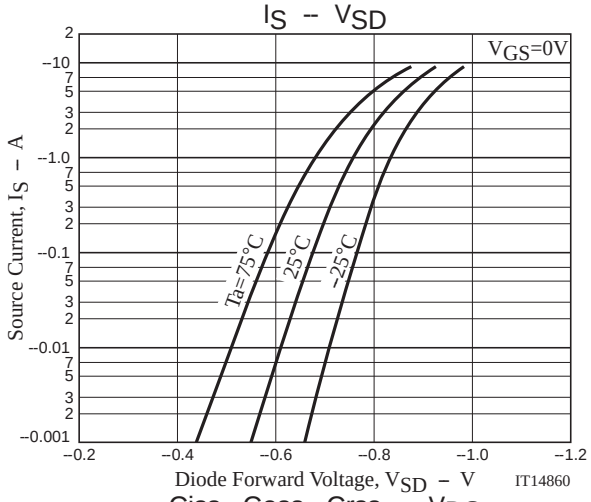

ID -- VDS
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT14855
–10.0V
–4.0V
–3.5V
–3.0V
–18.0V
–6.0V
–4.5V
VGS= –2.5V

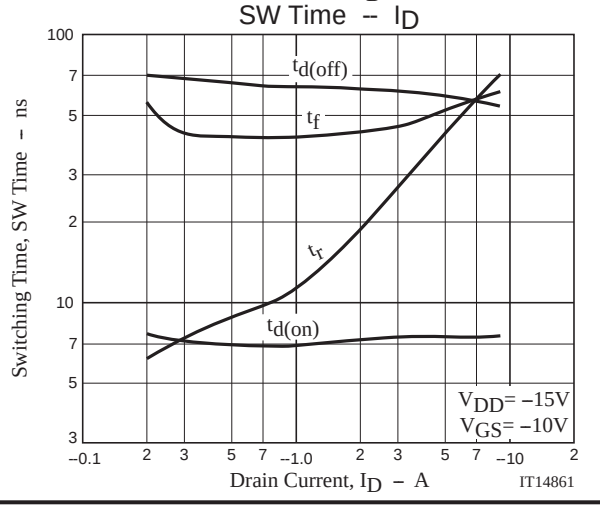

ID -- VGS
Drain Current, ID – A
Gate to Source Voltage, VGS – V
IT14856
VDS= –10V
Ta=75°C
25°C
–25°C

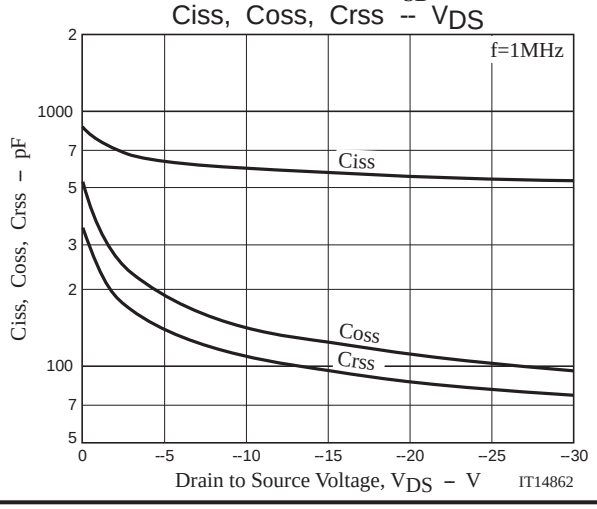

RDS(on) -- VGS
Static Drain to Source On-State Resistance, RDS(on) – mΩ
Gate to Source Voltage, VGS – V
IT14857
Ta=25°C
ID= –1.5A
–3.0A

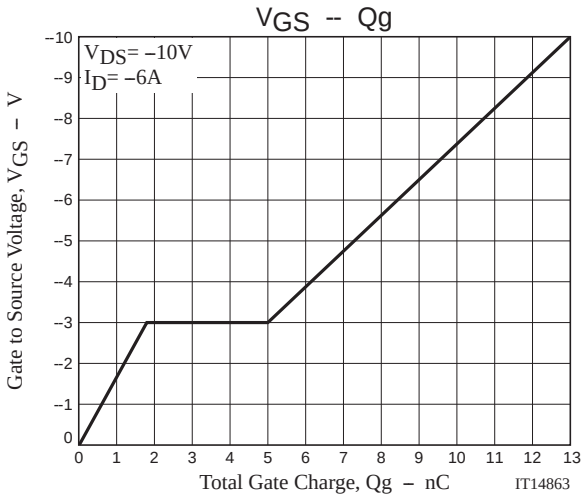

RDS(on) -- Ta
Static Drain to Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT14858
VGS= –4.0V, ID= –1.5A
VGS= –4.5V, ID= –1.5A
VGS= –10.0V, ID= –3.0A

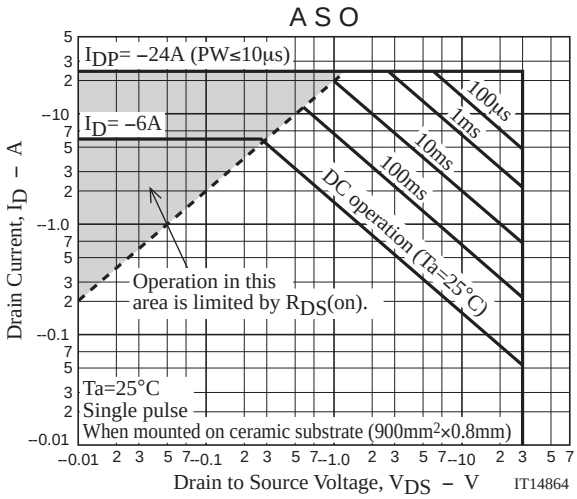

| yfs | -- ID
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT14859
VDS= –10V
Ta= –25°C
25°C
75°C

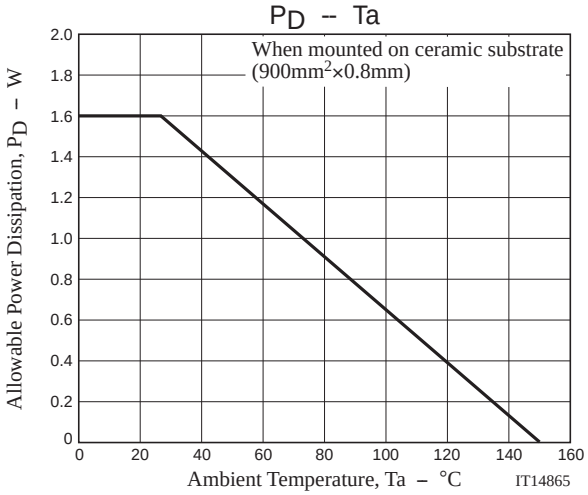

IS -- VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT14860
VGS=0V
Ta=75°C
25°C
–25°C


SW Time -- ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT14861
td(off)
tf
tr
td(on)
VDD= –15V
VGS= –10V


Ciss, Coss, Crss -- VDS
Ciss, Coss, Crss – pF
Drain to Source Voltage, VDS – V
IT14862
f=1MHz
Ciss
Coss
Crss


VGS -- Qg
VDS= −10V
ID= −6A
Gate to Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT14863

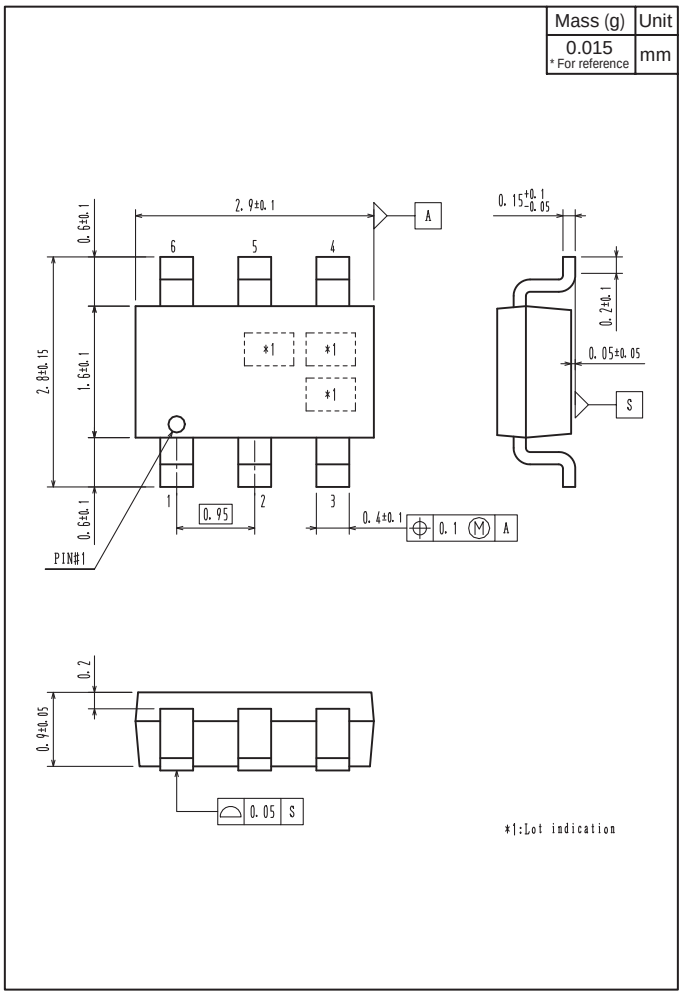

A S O
IDP= −24A (PW≤10μs)
ID= −6A
100μs
1ms
10ms
100ms
DC operation (Ta=25°C)
Operation in this
area is limited by RDS(on).
Ta=25°C
Single pulse
When mounted on ceramic substrate (900mm2×0.8mm)
Drain Current, ID – A
Drain to Source Voltage, VDS – V
IT14864


PD -- Ta
When mounted on ceramic substrate
(900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT14865

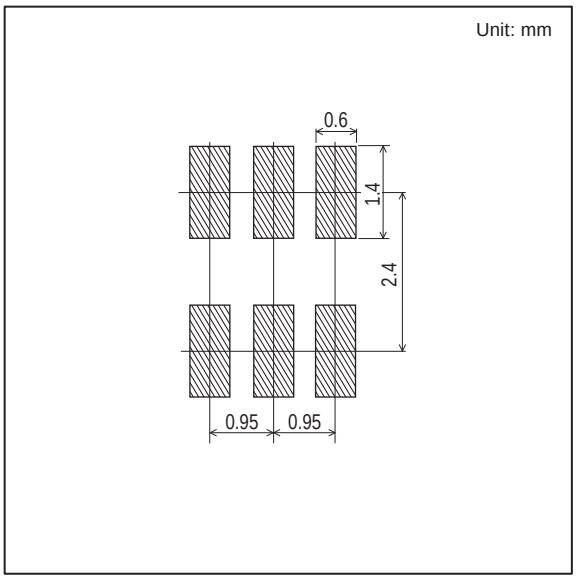
CPH6350

Outline Drawing

CPH6350-TL-E, CPH6350-TL-W



Land Pattern Example



Note on usage : Since the CPH6350 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

OUR CERTIFICATE

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