Ordering number : ENA1084B

CPH6341

P-Channel Power MOSFET
−30V, −5A, 59mΩ, Single CPH6

ON Semiconductor®
http://onsemi.com

Features

- Low ON-resistance
- High-speed switching
- 4V drive
- Protection diode in

Specifications

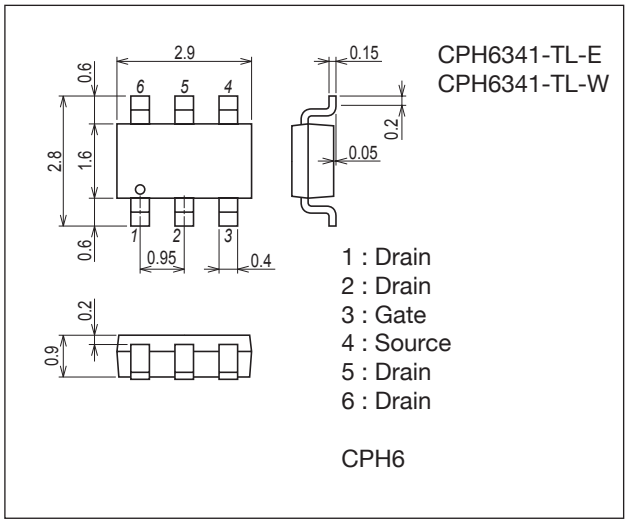
Absolute Maximum Ratings at Ta=25°C

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		−5	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−20	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

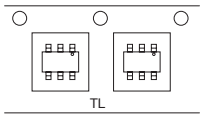
unit : mm (typ)
7018A-003



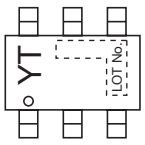
Product & Package Information

- Package : CPH6
- JEITA, JEDEC : SC-74, SOT-26, SOT-457
- Minimum Packing Quantity : 3,000 pcs./reel

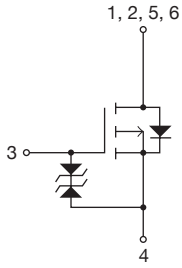
Packing Type: TL



Marking



Electrical Connection

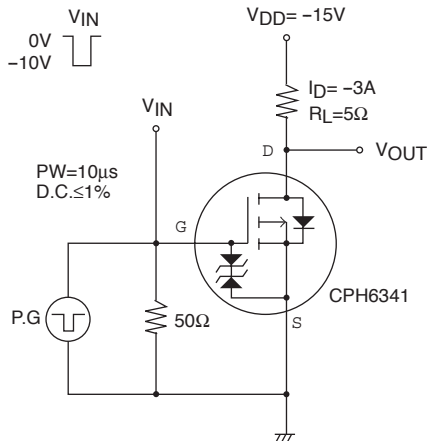


ORDERING INFORMATION
See detailed ordering and shipping information on page 2 of this data sheet.

Electrical Characteristics at Ta=25°C

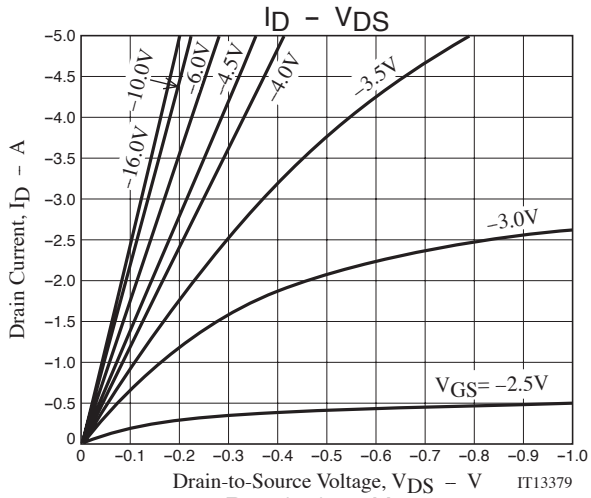
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=−1mA, V_{GS}=0V	−30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=−30V, V_{GS}=0V			−1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	V_{GS}(off)	V_{DS}=−10V, I_D=−1mA	−1.2		−2.6	V
Forward Transfer Admittance	| yfs |	V_{DS}=−10V, I_D=−3A	2.8	4.8		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=−3A, V_{GS}=−10V		45	59	mΩ
	R_{DS}(on)2	I_D=−1.5A, V_{GS}=−4.5V		71	100	mΩ
	R_{DS}(on)3	I_D=−1.5 A, V_{GS}=−4V		82	115	mΩ
Input Capacitance	Ciss	V_{DS}=−10V, f=1MHz		430		pF
Output Capacitance	Coss			105		pF
Reverse Transfer Capacitance	Crss			75		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		7.5		ns
Rise Time	t_r			26		ns
Turn-OFF Delay Time	t_d(off)			45		ns
Fall Time	t_f			35		ns
Total Gate Charge	Qg	V_{DS}=−15V, V_{GS}=−10V, I_D=−5A		10		nC
Gate-to-Source Charge	Qgs			2.0		nC
Gate-to-Drain “Miller” Charge	Qgd			2.5		nC
Diode Forward Voltage	V_{SD}	I_S=−5A, V_{GS}=0V		−0.87	−1.2	V

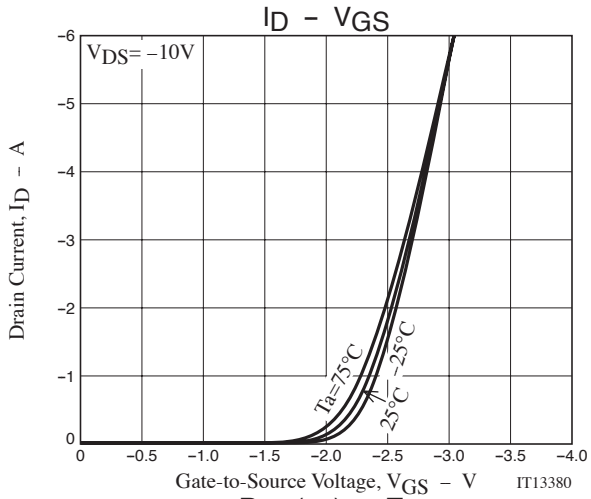
Switching Time Test Circuit

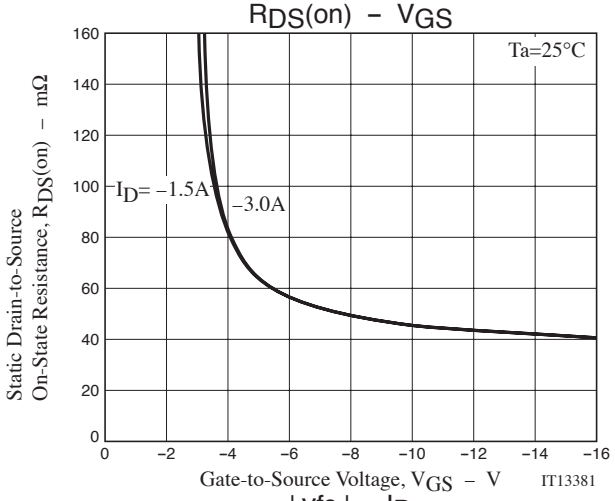


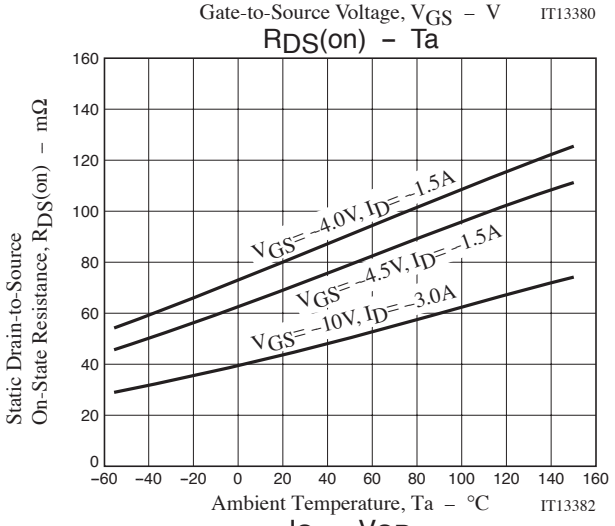
Ordering Information

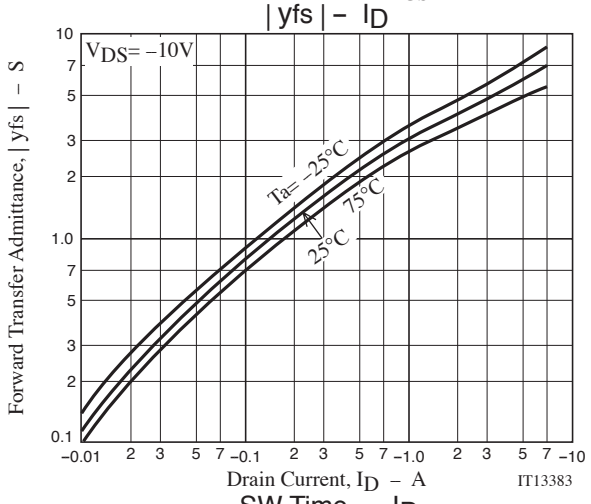
Device	Package	Shipping	memo
CPH6341-TL-E	CPH6	3,000pcs./reel	Pb-Free
CPH6341-TL-W			Pb-Free and Halogen Free

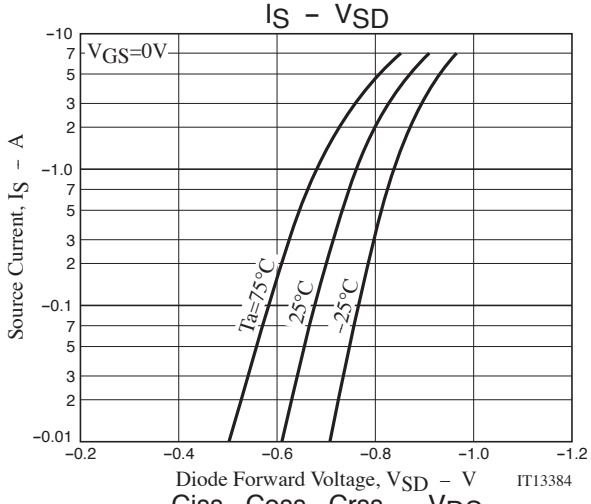

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT13379
–10.0V
–16.0V
–6.0V
–4.5V
–4.0V
–3.5V
–3.0V
VGS= –2.5V

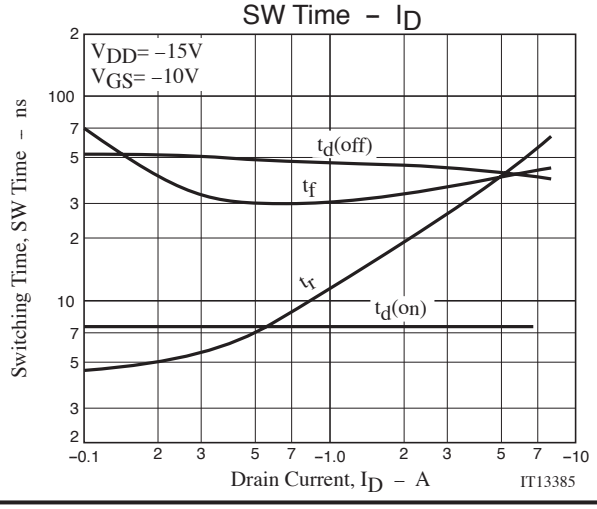

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT13380
VDS= –10V
Ta=75°C
25°C
–25°C

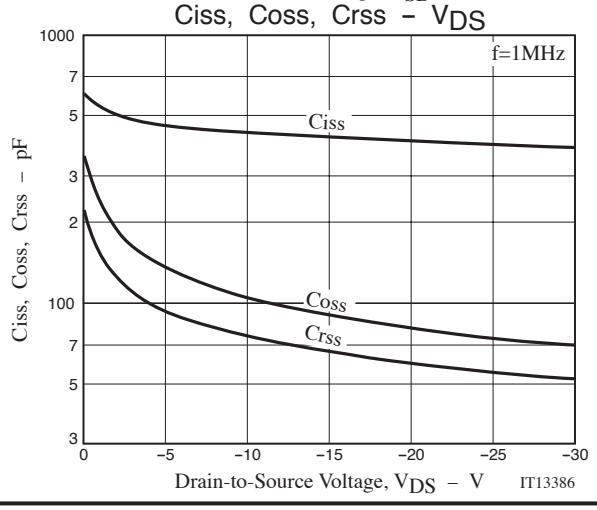

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT13381
Ta=25°C
ID= –1.5A
–3.0A

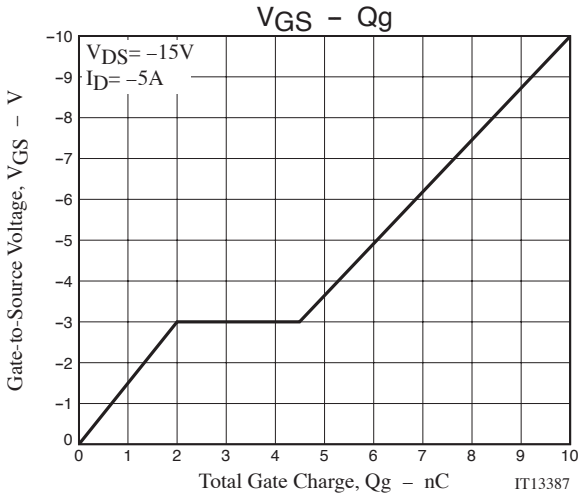

RDS(on) – Ta
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT13382
VGS= –4.0V, ID= –1.5A
VGS= –4.5V, ID= –1.5A
VGS= –10V, ID= –3.0A

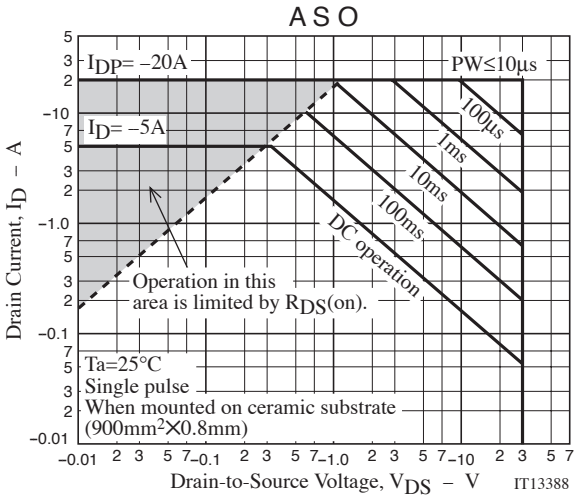

| yfs | – ID
Forward Transfer Admittance, | yfs | – S
Drain Current, ID – A
IT13383
VDS= –10V
Ta= –25°C
75°C
25°C

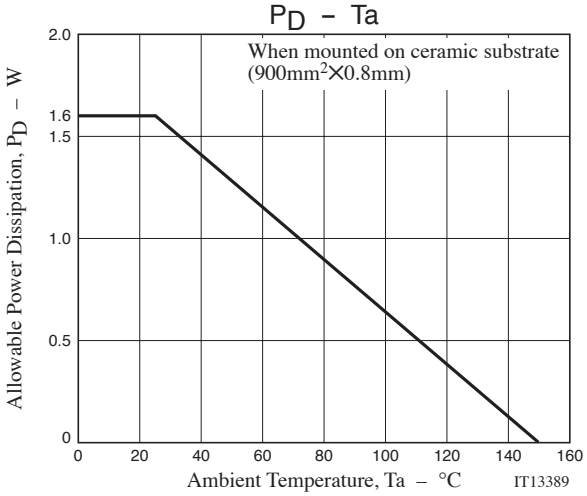

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT13384
VGS=0V
Ta=75°C
25°C
–25°C


SW Time – ID
Switching Time, SW Time – ns
Drain Current, ID – A
IT13385
VDD= –15V
VGS= –10V
td(off)
tf
tr
td(on)


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT13386
f=1MHz
Ciss
Coss
Crss

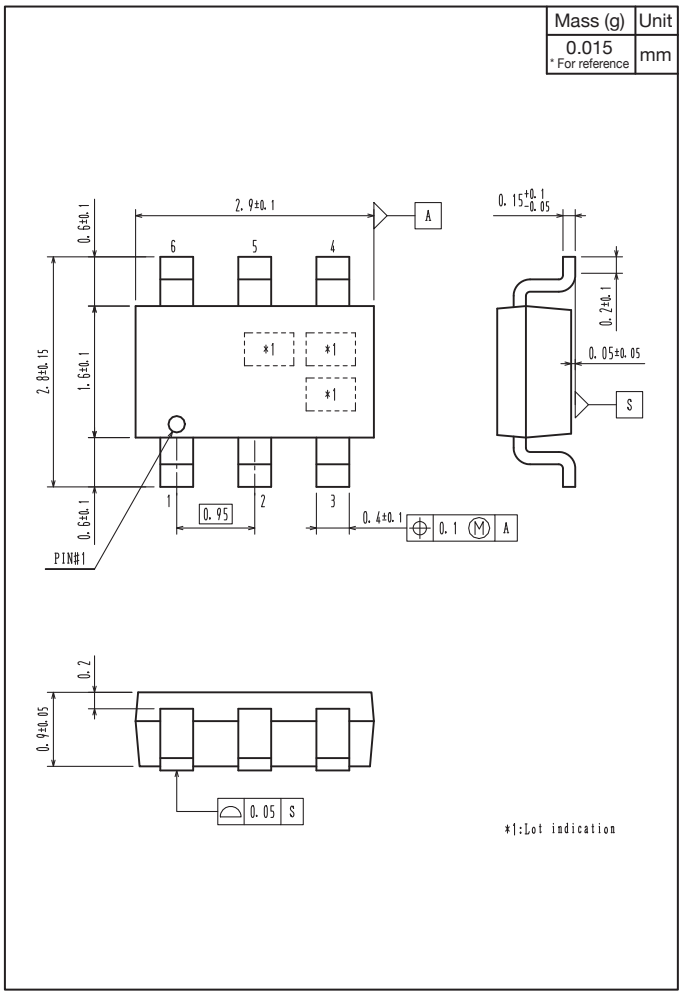

VGS – Qg
VDS= –15V
ID= –5A
Gate-to-Source Voltage, VGS – V
Total Gate Charge, Qg – nC
IT13387


A S O
IDP= –20A
PW≤10μs
ID= –5A
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
IT13388

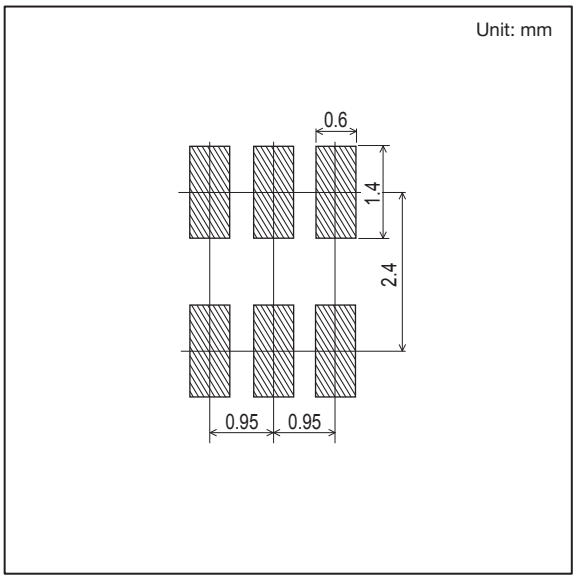

PD – Ta
When mounted on ceramic substrate
(900mm2×0.8mm)
Allowable Power Dissipation, PD – W
Ambient Temperature, Ta – °C
IT13389

Outline Drawing

CPH6341-TL-E, CPH6341-TL-W



Land Pattern Example



Note on usage : Since the CPH6341 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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