# **CPH6347**

# Power MOSFET –20V, 39mΩ, –6A, Single P-Channel



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#### **Features**

- Low Gate Drive Voltage
- ESD Diode-Protected Gate
- Pb-Free, Halogen Free and RoHS Compliance

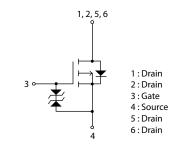
VDSS	R <sub>DS</sub> (on) Max	ID Max
	39mΩ@ -4.5V	
-20V	66mΩ@ –2.5V	-6A
	102mΩ@ –1.8V	

#### **Specifications**

**Absolute Maximum Ratings** at Ta = 25°C

Parameter	Symbol	Value	Unit
Drain to Source Voltage	V <sub>DSS</sub>	-20	V
Gate to Source Voltage	V <sub>GSS</sub>	±12	V
Drain Current (DC)	ID	-6	Α
Drain Current (Pulse) PW≤10μs, duty cycle≤1%	IDP	-24	А
Power Dissipation When mounted on ceramic substrate (900mm² × 0.8mm)	PD	1.6	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

## Electrical Connection P-Channel



#### **Thermal Resistance Ratings**

Parameter	Symbol	Value	Unit
Junction to Ambient			
When mounted on ceramic substrate	$R_{\theta JA}$	78.1	°C/W
$(900 \text{mm}^2 \times 0.8 \text{mm})$			

#### Packing Type: TL Marking



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.

#### **ORDERING INFORMATION**

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

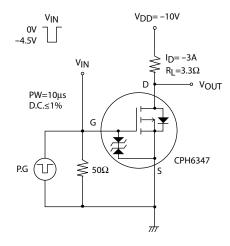
#### **CPH6347**

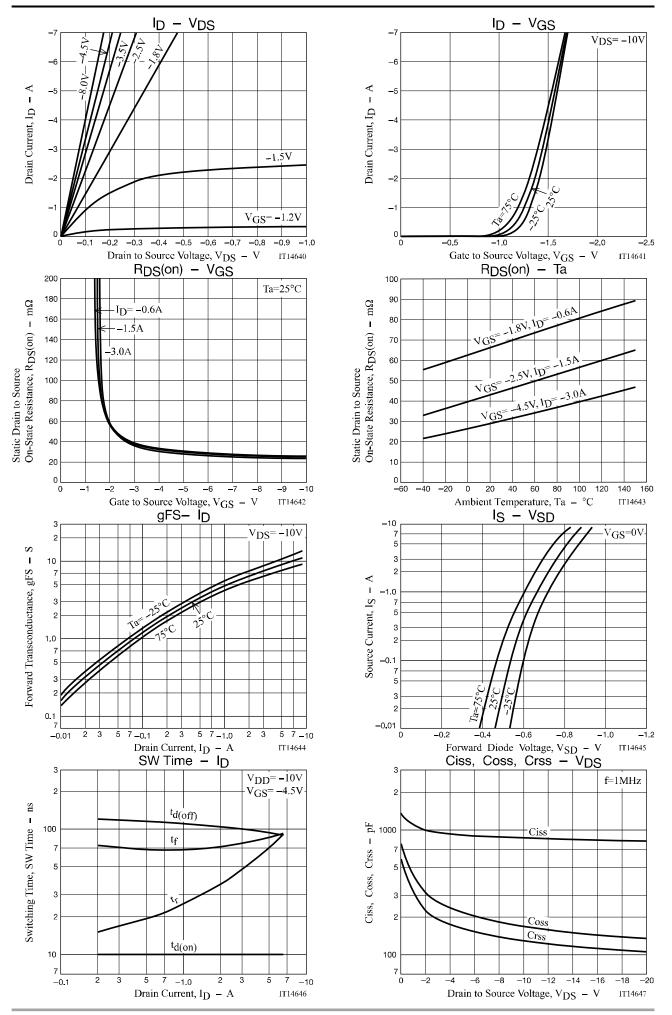
#### **Electrical Characteristics** at Ta = 25°C

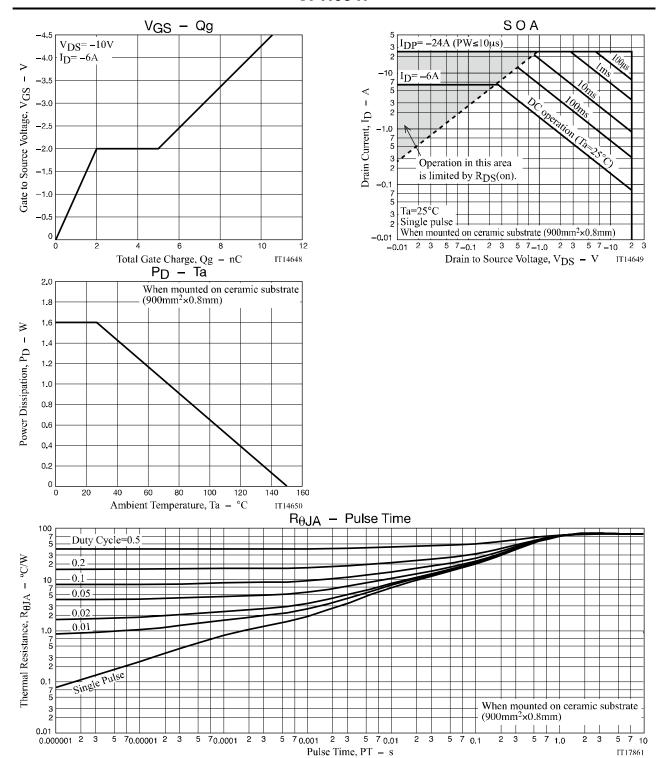
Description	Symbol Conditions	0 111	Value			
Parameter		min	typ	max	Unit	
Drain to Source Breakdown Voltage	V(BR)DSS	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	μΑ
Gate to Source Leakage Current	IGSS	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μΑ
Gate Threshold Voltage	V <sub>GS</sub> (th)	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-0.4		-1.4	V
Forward Transconductance	9FS	V <sub>DS</sub> =-10V, I <sub>D</sub> =-3A	4.3	7.3		S
	R <sub>DS</sub> (on)1	I <sub>D</sub> =-3A, V <sub>GS</sub> =-4.5V		30	39	mΩ
Static Drain to Source On-State Resistance	R <sub>DS</sub> (on)2	I <sub>D</sub> =-1.5A, V <sub>GS</sub> =-2.5V		44	66	mΩ
	R <sub>DS</sub> (on)3	I <sub>D</sub> =-0.6A, V <sub>GS</sub> =-1.8V		68	102	mΩ
Input Capacitance	Ciss	V <sub>DS</sub> =–10V, f=1MHz		860		pF
Output Capacitance	Coss			170		pF
Reverse Transfer Capacitance	Crss			130		pF
Turn-ON Delay Time	t <sub>d</sub> (on)			10		ns
Rise Time	t <sub>r</sub>	Out of the Control of		48		ns
Turn-OFF Delay Time	t <sub>d</sub> (off)	See specified Test Circuit		100		ns
Fall Time	tf			78		ns
Total Gate Charge	Qg	V <sub>DS</sub> =-10V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-6A		10.5		nC
Gate to Source Charge	Qgs			2.0		nC
Gate to Drain "Miller" Charge	Qgd			3.0		nC
Forward Diode Voltage	V <sub>SD</sub>	I <sub>S</sub> =-6A, V <sub>GS</sub> =0V		-0.82	-1.5	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.

### **Switching Time Test Circuit**







#### **Package Dimensions**

CPH6347-TL-H / CPH6347-TL-W

#### CPH6

CASE 318BD ISSUE O

Unit: mm

1: Drain

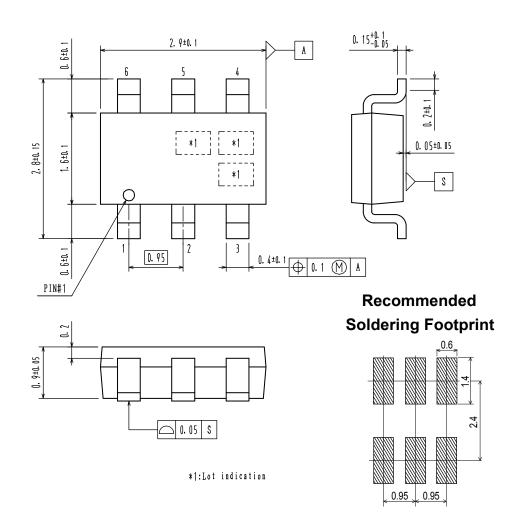
2: Drain

3: Gate

4 : Source

5: Drain

6: Drain



#### ORDERING INFORMATION

Device	Package	Shipping	Note
CPH6347-TL-H	CPH6	3,000 pcs. / Tape & Reel	Pb-Free and
CPH6347-TL-W	SC-74,SOT-26,SOT-457	3,000 pcs. / Tape & Neel	Halogen Free

<sup>†</sup> 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 CPH6347 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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