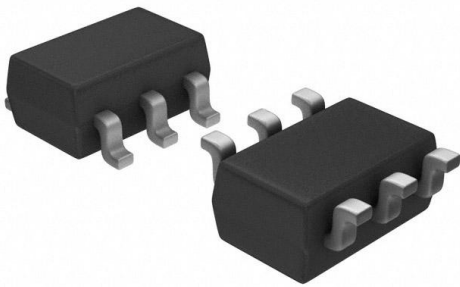


# CPH6347-TL-H Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

|                              |  |
|------------------------------|--|
| DiGi Electronics Part Number | CPH6347-TL-H-DG                                      |
| Manufacturer                 | <a href="#">onsemi</a>                               |
| Manufacturer Product Number  | CPH6347-TL-H   |
| Description                  | MOSFET P-CH 20V 6A 6CPH                              |
| Detailed Description         | P-Channel 20 V 6A (Ta) 1.6W (Ta) Surface Mount 6-CPH |



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

CPH6347-TL-H

Series:

-

FET Type:

P-Channel

Drain to Source Voltage (Vdss):

20 V

Drive Voltage (Max Rds On, Min Rds On):

1.8V, 4.5V

Vgs(th) (Max) @ Id:

-

Vgs (Max):

±12V

FET Feature:

-

Operating Temperature:

150°C (TJ)

Supplier Device Package:

6-CPH

Base Product Number:

CPH634

Manufacturer:

onsemi

Product Status:

Obsolete

Technology:

MOSFET (Metal Oxide)

Current - Continuous Drain (Id) @ 25°C:

6A (Ta)

Rds On (Max) @ Id, Vgs:

39mOhm @ 3A, 4.5V

Gate Charge (Qg) (Max) @ Vgs:

10.5 nC @ 4.5 V

Input Capacitance (Ciss) (Max) @ Vds:

860 pF @ 10 V

Power Dissipation (Max):

1.6W (Ta)

Mounting Type:

Surface Mount

Package / Case:

SOT-23-6

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0095



ON Semiconductor®

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# CPH6347

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

### Features

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

### Specifications

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

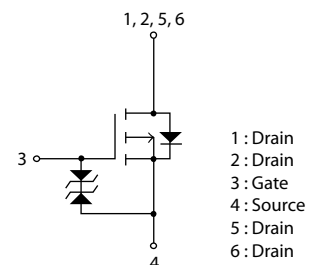
| Parameter  | Symbol           | Value       | Unit |
|--|------------------|-------------|------|
| Drain to Source Voltage  | V <sub>DSS</sub> | –20         | V    |
| Gate to Source Voltage   | V <sub>GSS</sub> | ±12         | V    |
| Drain Current (DC)   | I <sub>D</sub>   | –6          | A    |
| Drain Current (Pulse)<br>PW≤10μs, duty cycle≤1%  | I <sub>DP</sub>  | –24         | A    |
| Power Dissipation<br>When mounted on ceramic substrate<br>(900mm <sup>2</sup> × 0.8mm) | P <sub>D</sub>   | 1.6         | W    |
| Junction Temperature   | T <sub>J</sub>   | 150         | °C   |
| Storage Temperature  | T <sub>stg</sub> | –55 to +150 | °C   |

#### Thermal Resistance Ratings

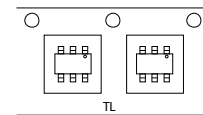
| Parameter  | Symbol           | Value | Unit |
|--|------------------|-------|------|
| Junction to Ambient<br>When mounted on ceramic substrate<br>(900mm <sup>2</sup> × 0.8mm) | R <sub>θJA</sub> | 78.1  | °C/W |

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

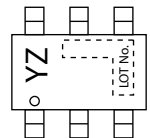
#### Electrical Connection P-Channel



#### 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.

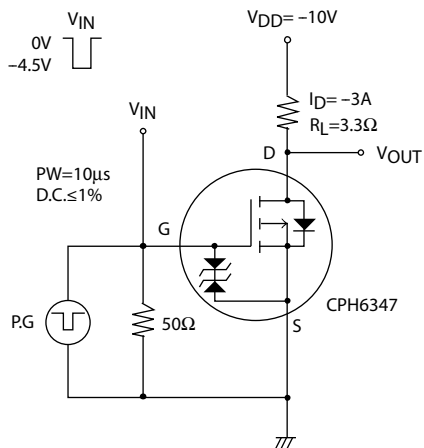
## CPH6347

### Electrical Characteristics at $T_a = 25^\circ\text{C}$

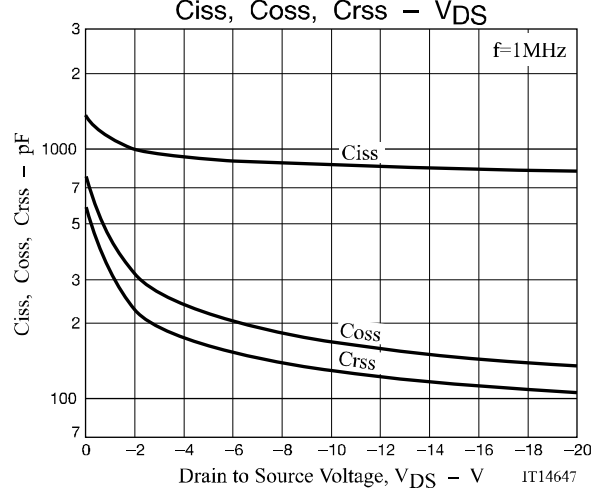
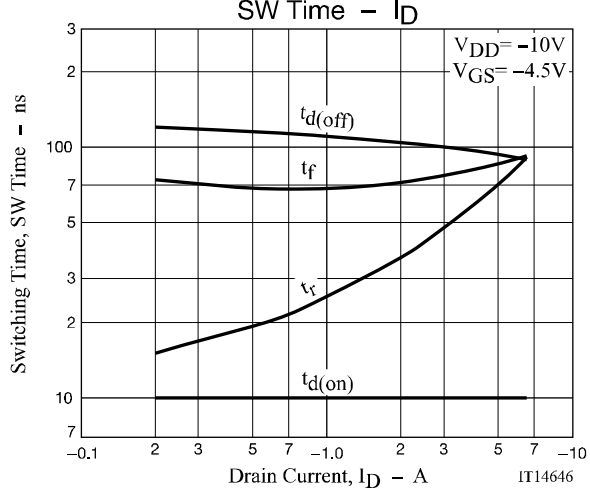
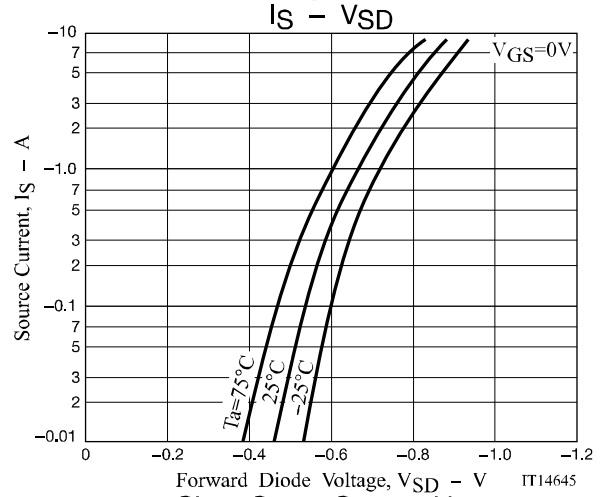
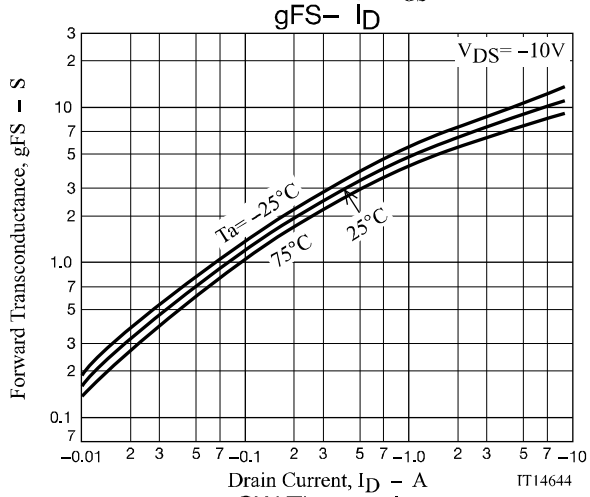
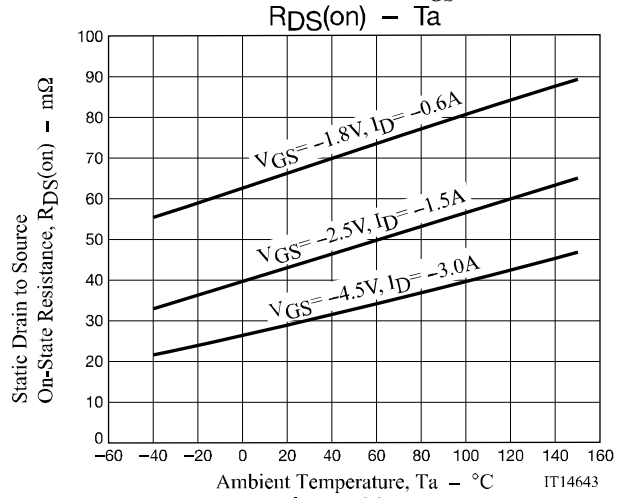
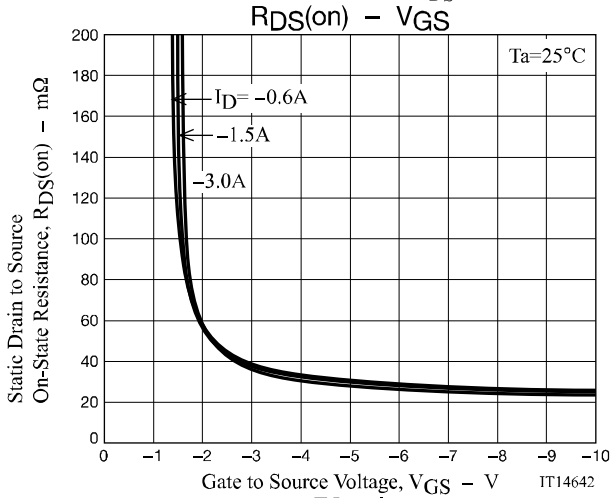
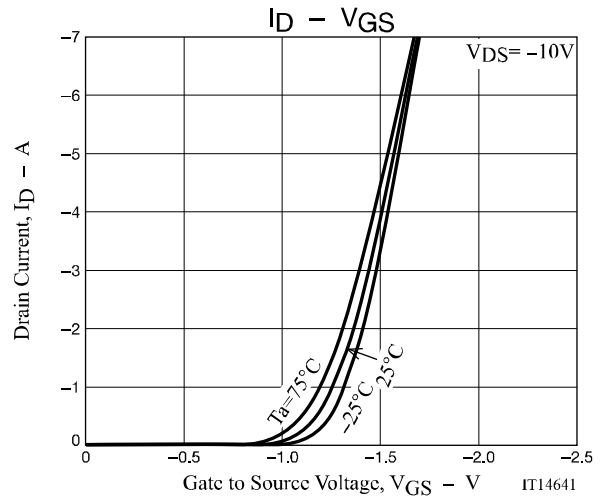
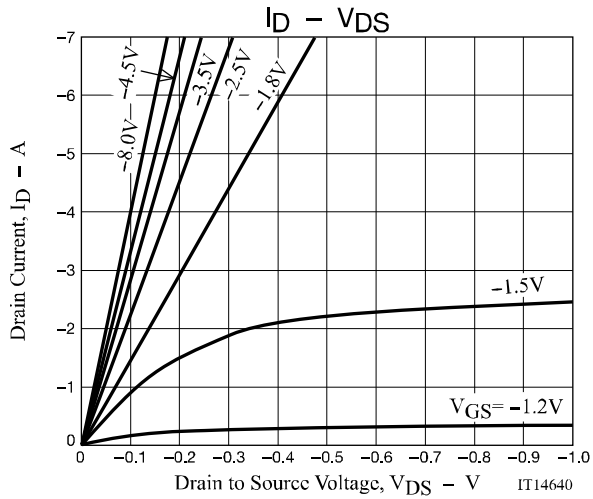
| Parameter                                  | Symbol        | Conditions                                      | Value   |       |          | Unit             |
|--|---------------|---|---|-------|----------|------------------|
|  |               |   | min   | typ   | max      |                  |
| Drain to Source Breakdown Voltage          | $V_{(BR)DSS}$ | $I_D = -1\text{mA}$ , $V_{GS} = 0\text{V}$      | -20   |       |          | V                |
| Zero-Gate Voltage Drain Current            | $I_{DSS}$     | $V_{DS} = -20\text{V}$ , $V_{GS} = 0\text{V}$   |   |       | -1       | $\mu\text{A}$    |
| Gate to Source Leakage Current             | $I_{GSS}$     | $V_{GS} = \pm 8\text{V}$ , $V_{DS} = 0\text{V}$ |   |       | $\pm 10$ | $\mu\text{A}$    |
| Gate Threshold Voltage                     | $V_{GS(th)}$  | $V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$    | -0.4  |       | -1.4     | V                |
| Forward Transconductance                   | $g_{FS}$      | $V_{DS} = -10\text{V}$ , $I_D = -3\text{A}$     | 4.3   | 7.3   |          | S                |
| Static Drain to Source On-State Resistance | $R_{DS(on)1}$ | $I_D = -3\text{A}$ , $V_{GS} = -4.5\text{V}$    |   | 30    | 39       | $\text{m}\Omega$ |
|  | $R_{DS(on)2}$ | $I_D = -1.5\text{A}$ , $V_{GS} = -2.5\text{V}$  |   | 44    | 66       | $\text{m}\Omega$ |
|  | $R_{DS(on)3}$ | $I_D = -0.6\text{A}$ , $V_{GS} = -1.8\text{V}$  |   | 68    | 102      | $\text{m}\Omega$ |
| Input Capacitance                          | $C_{iss}$     | $V_{DS} = -10\text{V}$ , $f = 1\text{MHz}$      |   | 860   |          | $\text{pF}$      |
| Output Capacitance                         | $C_{oss}$     |   |   | 170   |          | $\text{pF}$      |
| Reverse Transfer Capacitance               | $C_{rss}$     |   |   | 130   |          | $\text{pF}$      |
| Turn-ON Delay Time                         | $t_{d(on)}$   | See specified Test Circuit                      |   | 10    |          | ns               |
| Rise Time                                  | $t_r$         |   |   | 48    |          | ns               |
| Turn-OFF Delay Time                        | $t_{d(off)}$  |   |   | 100   |          | ns               |
| Fall Time                                  | $t_f$         |   |   | 78    |          | ns               |
| Total Gate Charge                          | $Q_g$         |   | $V_{DS} = -10\text{V}$ , $V_{GS} = -4.5\text{V}$ , $I_D = -6\text{A}$ |       | 10.5     |                  |
| Gate to Source Charge                      | $Q_{gs}$      |   |   | 2.0   |          | nC               |
| Gate to Drain "Miller" Charge              | $Q_{gd}$      |   |   | 3.0   |          | nC               |
| Forward Diode Voltage                      | $V_{SD}$      | $I_S = -6\text{A}$ , $V_{GS} = 0\text{V}$       |   | -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.

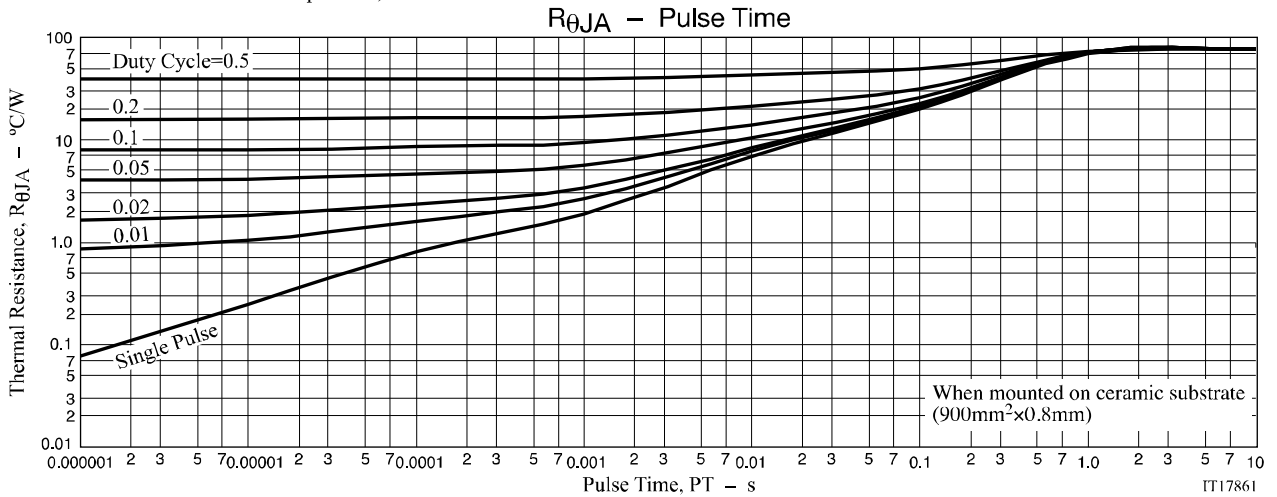
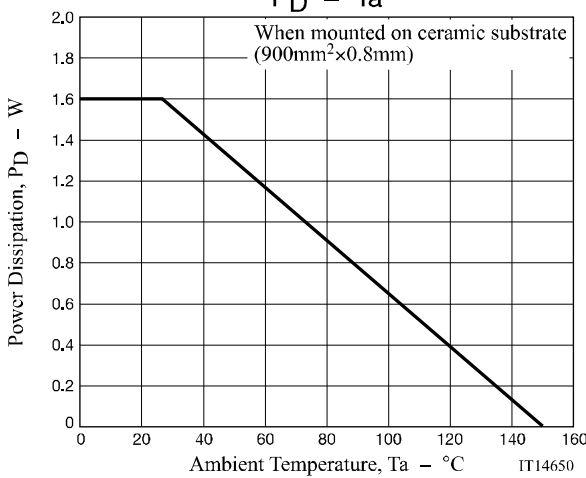
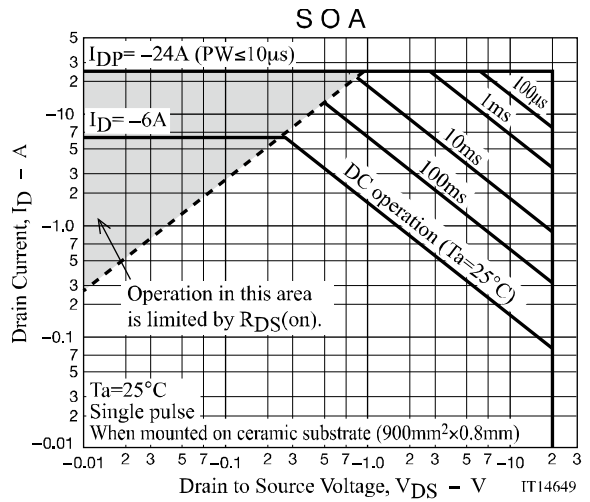
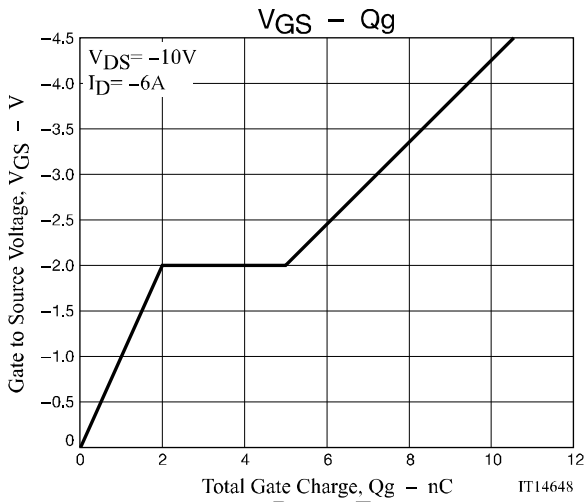
### Switching Time Test Circuit



# CPH6347



# CPH6347



# CPH6347

## Package Dimensions

CPH6347-TL-H / CPH6347-TL-W

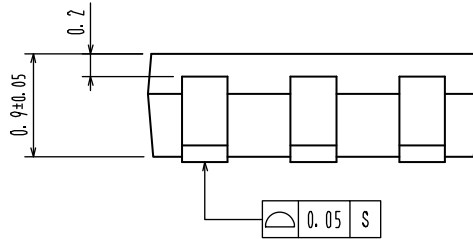
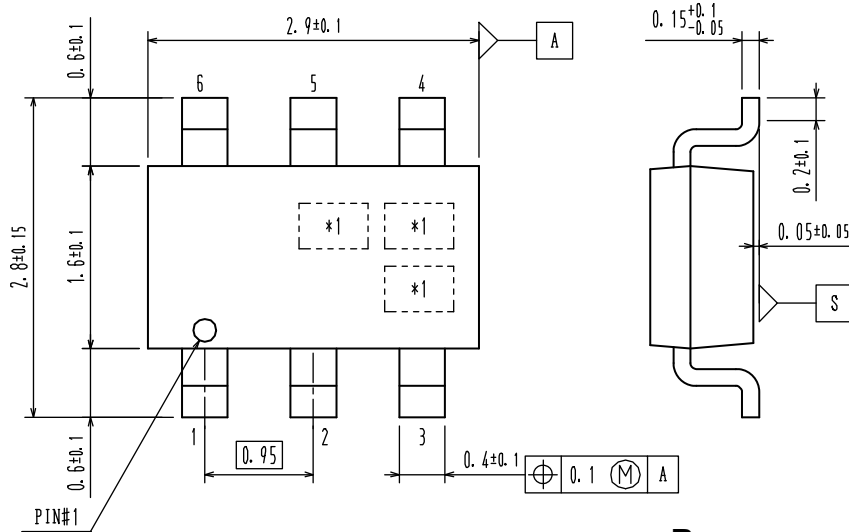
### CPH6

CASE 318BD

ISSUE O

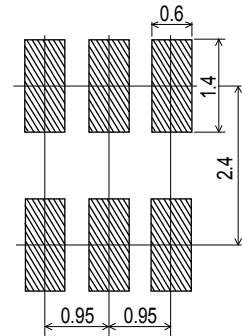
Unit : mm

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



\*1: Lot indication

## Recommended Soldering Footprint



## ORDERING INFORMATION

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

† 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](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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