



### Features

- Low On-resistance
- Low gate charge
- Low intrinsic capacitance
- Extremely fast switching

### Applications

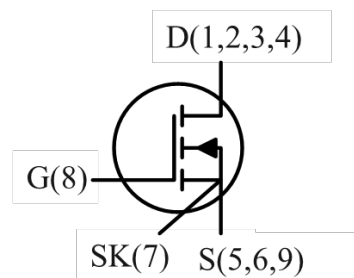
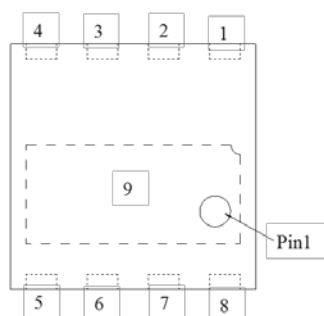
- Resonant soft switching Converters
- Switch Mode Power Supplies
- Isolated DC/DC converters

### Product Summary

|                              |     |    |
|------------------------------|-----|----|
| $V_{DS}$                     | 650 | V  |
| $R_{DS(on),TYP@ V_{GS}=6 V}$ | 100 | mΩ |
| $I_D$                        | 15  | A  |



DFN 8x8



### Absolute Maximum Ratings( $T_c=25^{\circ}\text{C}$ unless otherwise specified) Parameter

| Symbol                            | Value     | Unit     | Test Condition |   |                           |
|-----------------------------------|-----------|----------|----------------|---|---------------------------|
| Drain-source voltage              |           | $V_{DS}$ | 650            | V |                           |
| Gate-source voltage               |           | $V_{GS}$ | -10 to +7      | V | DC                        |
| Continuous drain current *        | $I_D$     |          | 15             | A | $T_c=25^{\circ}\text{C}$  |
|                                   |           |          | 12             | A | $T_c=100^{\circ}\text{C}$ |
| Operation and storage temperature | $T_j$     |          | -55 to 150     | ? |                           |
|                                   | $T_{stg}$ |          | -55 to 150     | ? |                           |

**Electrical Characteristics**( $T_c=25^{\circ}\text{C}$  unless otherwise specified)**Typical Performance - Static**

| Parameter                         | Symbol       | Values |      |      | Unit      | Test Condition                                          |
|-----------------------------------|--------------|--------|------|------|-----------|---------------------------------------------------------|
|                                   |              | Min.   | Typ. | Max. |           |                                                         |
| Drain source breakdown voltage    | $BV_{DS}$    | 650    | /    | /    | V         | $V_{GS}=0V$ , $I_D=20\mu A$                             |
| Total drain leakage current       | $I_{DSS}$    | /      | 10   | 20   | $\mu A$   | $V_{DS}=650V$ , $V_{GS}=0V$ , $T_j=25^{\circ}\text{C}$  |
|                                   |              | /      | 40   | 80   | $\mu A$   | $V_{DS}=650V$ , $V_{GS}=0V$ , $T_j=150^{\circ}\text{C}$ |
| Gate-to-source current            | $I_{GS}$     | /      | 200  | /    | $\mu A$   | $V_{DS}=0V$ , $V_{GS}=6V$ , $T_j=25^{\circ}\text{C}$    |
|                                   |              | /      | 1000 | /    | $\mu A$   | $V_{DS}=0V$ , $V_{GS}=6V$ , $T_j=150^{\circ}\text{C}$   |
| Static drain-source on-resistance | $R_{DS(on)}$ | /      | 100  | /    | $m\Omega$ | $V_{GS}=6V$ , $I_D=5A$ , $T_j=25^{\circ}\text{C}$       |
|                                   |              | /      | 210  | /    | $m\Omega$ | $V_{GS}=6V$ , $I_D=5A$ , $T_j=150^{\circ}\text{C}$      |
| Gate threshold voltage            | $V_{G(th)}$  | /      | 1.0  | /    | V         | $V_{DS}=V_{GS}$ , $I_D=3.5mA$ ,                         |
| Body diode forward voltage        | $V_{SD}$     | /      | 1.8  | /    | V         | $V_{GS}=0V$ , $I_{SD}=1A$ ,                             |

**Typical Performance - Dynamic**

| Parameter                          | Symbol        | Values |      |      | Unit     | Test Condition                               |
|------------------------------------|---------------|--------|------|------|----------|----------------------------------------------|
|                                    |               | Min.   | Typ. | Max. |          |                                              |
| Input capacitance                  | $C_{ISS}$     | /      | 123  | /    | pF       | $V_{DS}=400V$ ,<br>$V_{GS}=0V$ ,<br>$f=1MHz$ |
| Output capacitance                 | $C_{OSS}$     | /      | 41   | /    | pF       |                                              |
| Reverse transfer capacitance       | $C_{RSS}$     | /      | 1.3  | /    | pF       |                                              |
| Output capacitance, energy related | $C_{OSS(er)}$ | /      | 53   | /    | pF       | $V_{DS}=0V$ to $400V$ ,<br>$V_{GS}=0V$       |
| Output capacitance, time related   | $C_{OSS(tr)}$ | /      | 70   | /    | pF       |                                              |
| Total gate charge                  | $Q_G$         | /      | 3.5  | /    | nC       | $V_{DS}=400V$ ,<br>$V_{GS}=0V$ to $6V$       |
| Gate-drain charge                  | $Q_{GD}$      | /      | 1.1  | /    | nC       |                                              |
| Gate-source charge                 | $Q_{GS}$      | /      | 1.1  | /    | nC       |                                              |
| Gate Resistance                    | $R_G$         | /      | 1.0  | /    | $\Omega$ | $f = f_{res}$ , Open drain                   |

### Typical Performance Diagrams

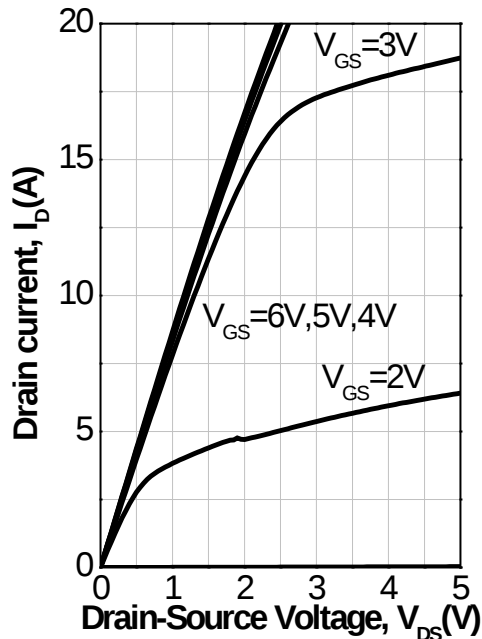


Figure 1 Typical output characteristics at  $T_j = 25^\circ\text{C}$

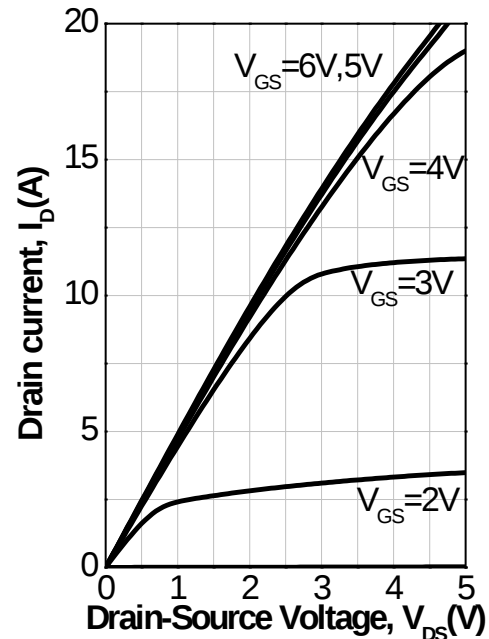


Figure 2 Typical output characteristics at  $T_j = 150^\circ\text{C}$

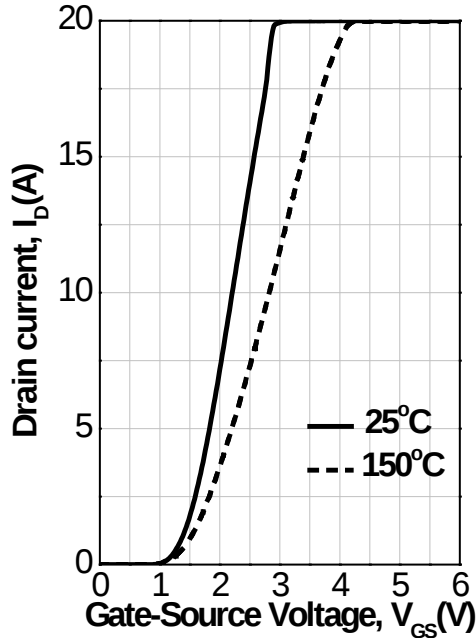


Figure 3 Typical transfer characteristics at  $V_{DS} = 5\text{V}$

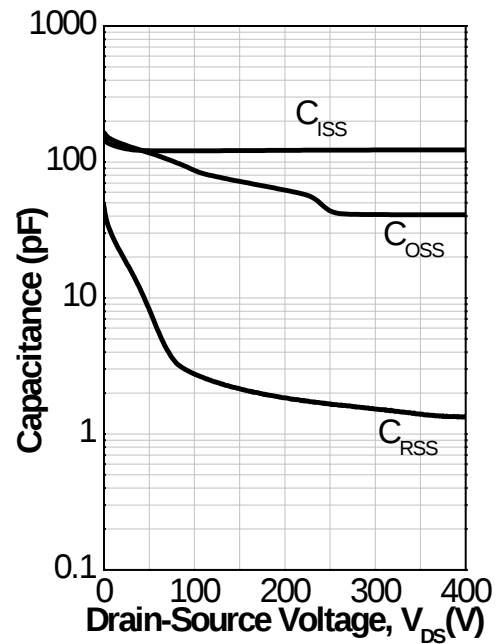


Figure 4 Typical capacitance characteristics at 1MHz

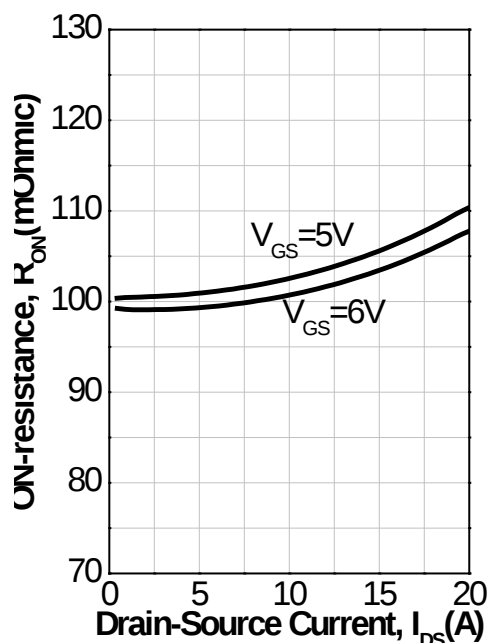


Figure 5 ON-resistance for various drain current at  $T_J=25^{\circ}\text{C}$

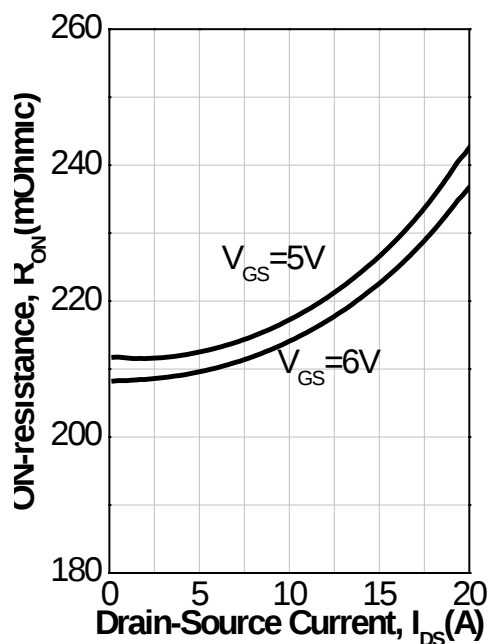


Figure 6 ON-resistance for various drain current at  $T_J=150^{\circ}\text{C}$

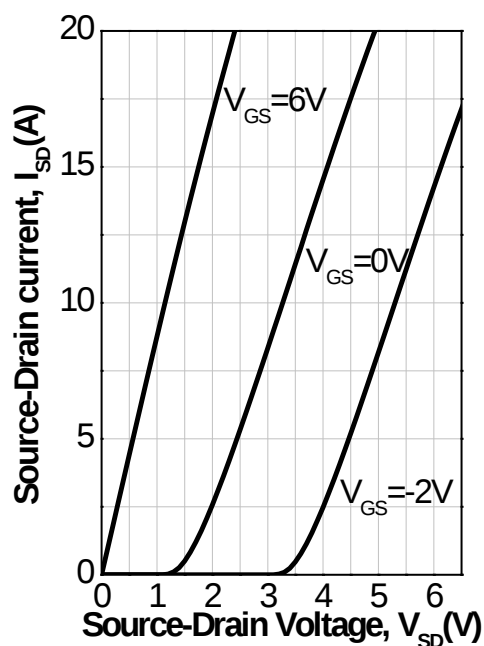


Figure 7 Typical reverse conduction characteristics

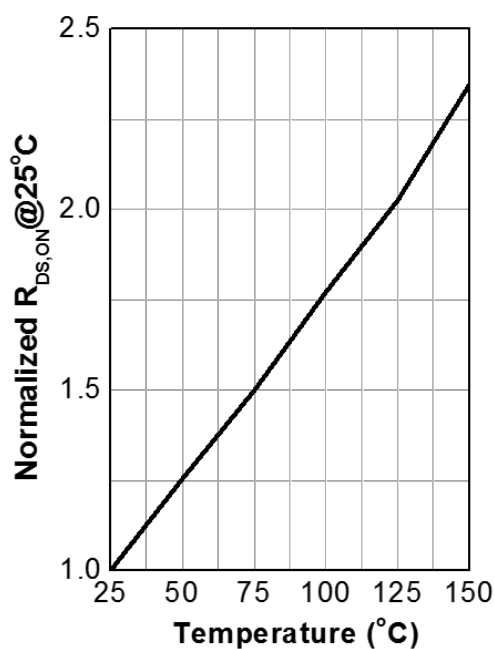
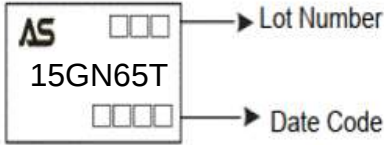


Figure 8 Normalized ON-resistance at various temperatures

## Ordering and Marking Information

| Ordering Device No. | Marking | Package | Packing   | Quantity  |
|---------------------|---------|---------|-----------|-----------|
| ASDM15GN65TE-R      | 15GN65T | DFN8*8  | Tape&Reel | 5000/Reel |

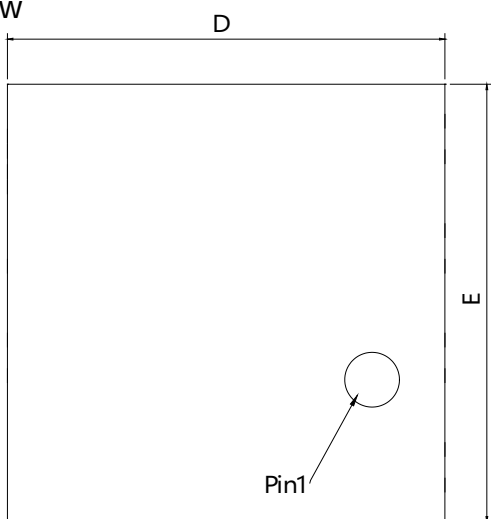
| PACKAGE | MARKING                                                                            |
|---------|------------------------------------------------------------------------------------|
| DFN8*8  |  |

## Package

### Outline Dimension (unit= mm)

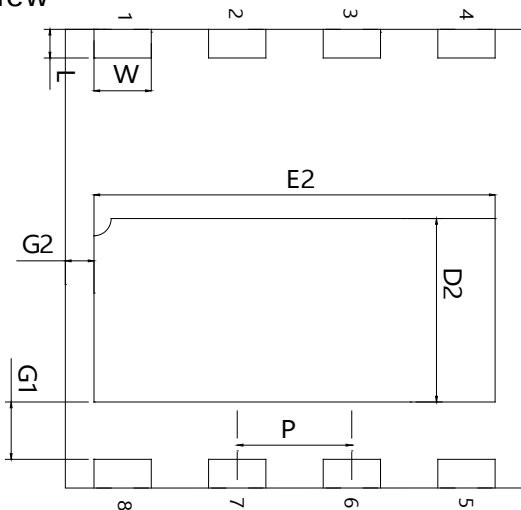
Package DFN8x8

Top view

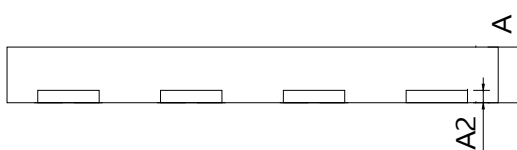


| Dimension[unit:mm] |       |            |
|--------------------|-------|------------|
| No                 | Typ.  | Tolerance  |
| A                  | 0.9   | $\pm 0.1$  |
| A2                 | 0.203 | Ref.       |
| D                  | 8.0   | BSC        |
| E                  | 8.0   | BSC        |
| D2                 | 3.20  | Ref.       |
| E2                 | 7.00  | Ref.       |
| L                  | 0.5   | $\pm 0.05$ |
| W                  | 1.0   | $\pm 0.05$ |
| P                  | 2.0   | BSC        |
| G1                 | 1.0   | Ref.       |
| G2                 | 0.5   | Ref.       |

Bottom view



Side view



**IMPORTANT NOTICE**

Xi'an Ascend Semiconductor incorporated MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Xi'an Ascend Semiconductor Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Xi'an Ascend Semiconductor Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Xi'an Ascend Semiconductor Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume .

all risks of such use and will agree to hold Ascendsemi Incorporated and all the companies whose products are represented on Xi'an Ascend Semiconductor Incorporated website, harmless against all damages.

Xi'an Ascend Semiconductor Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Xi'an Ascend Semiconductor Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Xi'an Ascend Semiconductor Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

**[www.ascendsemi.com](http://www.ascendsemi.com)**