

**SE7314**  
**Dual-20V P-Channel Enhancement-Mode MOSFET**

Revision:A

**General Description**

SE7314 is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount

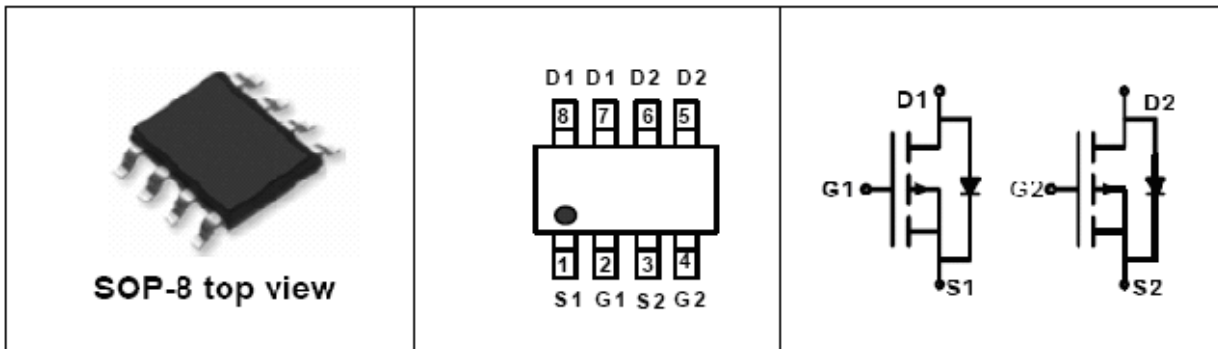
**Features**

- $V_{DS} = -20V$
- $R_{DS(on)} = 68m\Omega @ V_{GS} = -1.8V, I_D = -2A$
- $R_{DS(on)} = 52m\Omega @ V_{GS} = -2.5V, I_D = -4.1A$
- $R_{DS(on)} = 39m\Omega @ V_{GS} = -4.5V, I_D = -4.7A$

**Application**

- Load Switch
- A Switch and Battery Switch for Portable Devices

**Pin configurations( SOP8)**

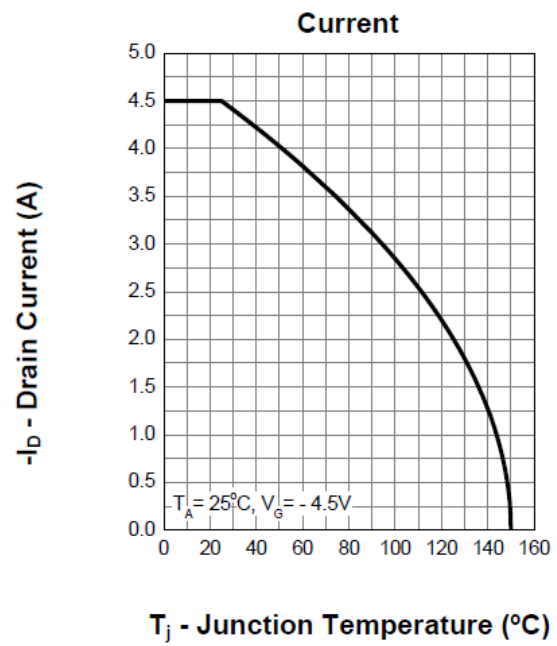
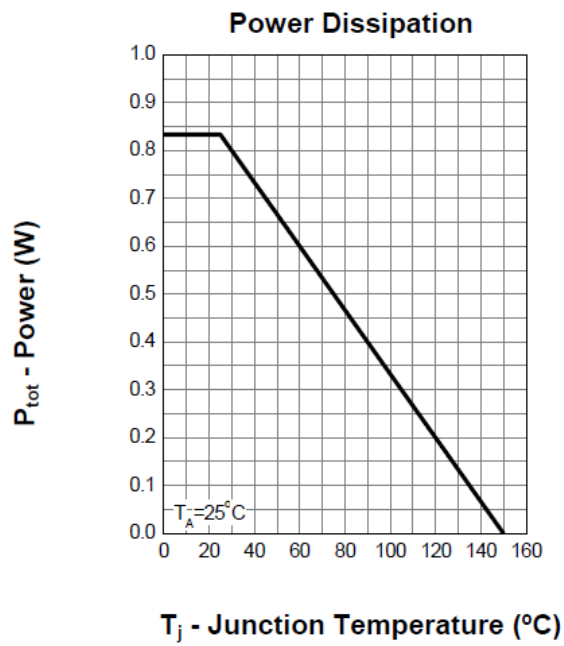


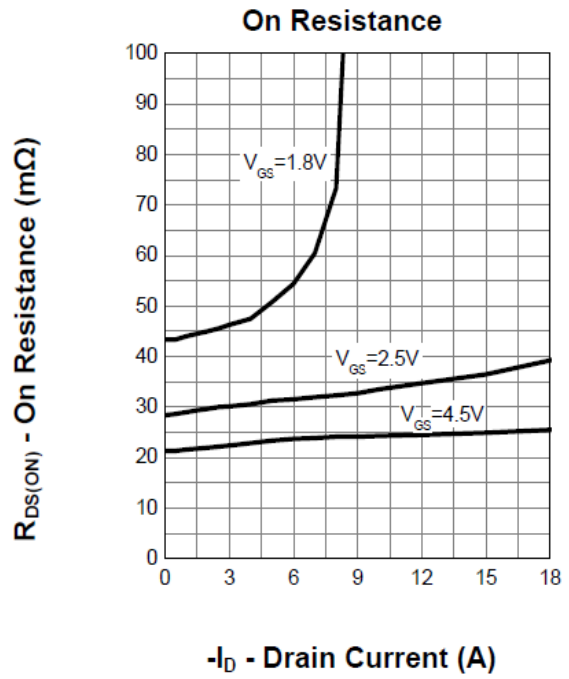
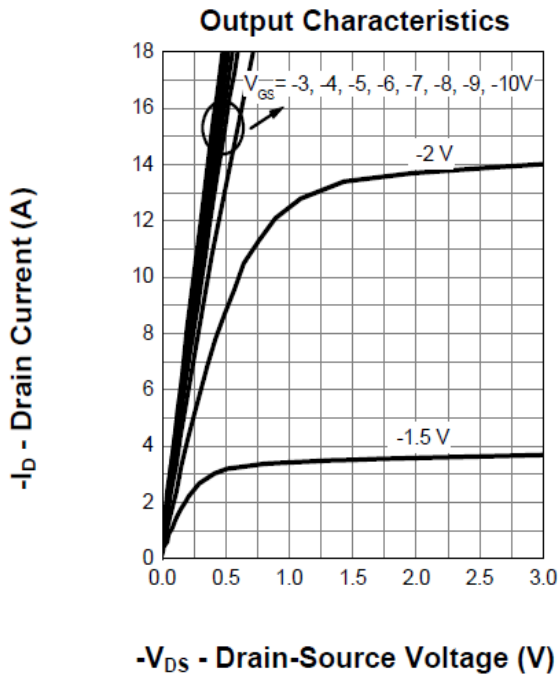
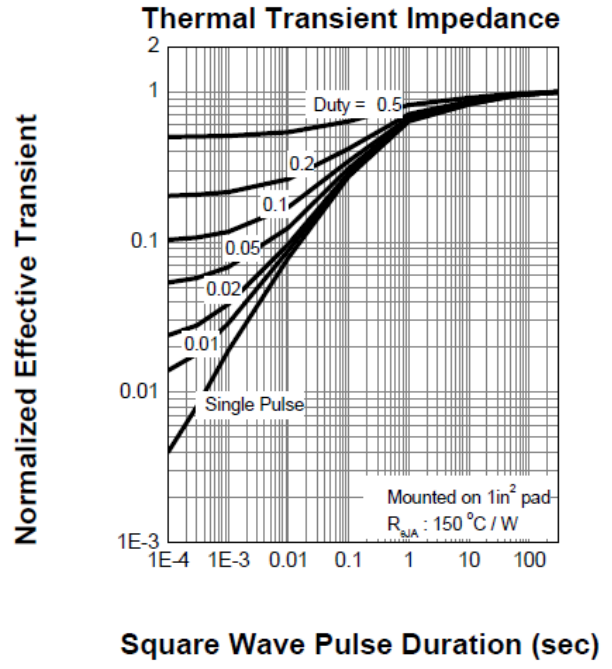
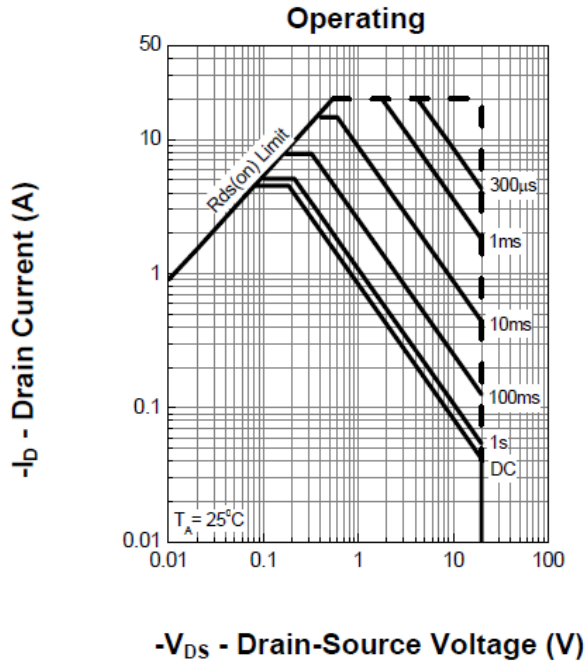
**Absolute Maximum Ratings**

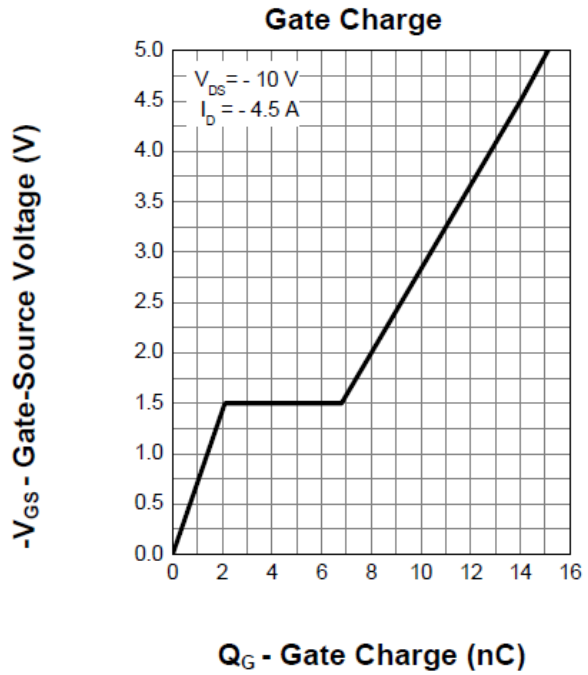
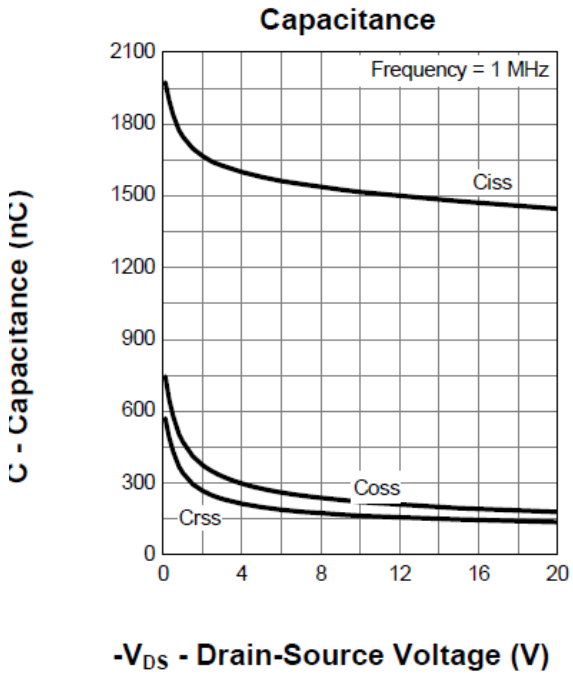
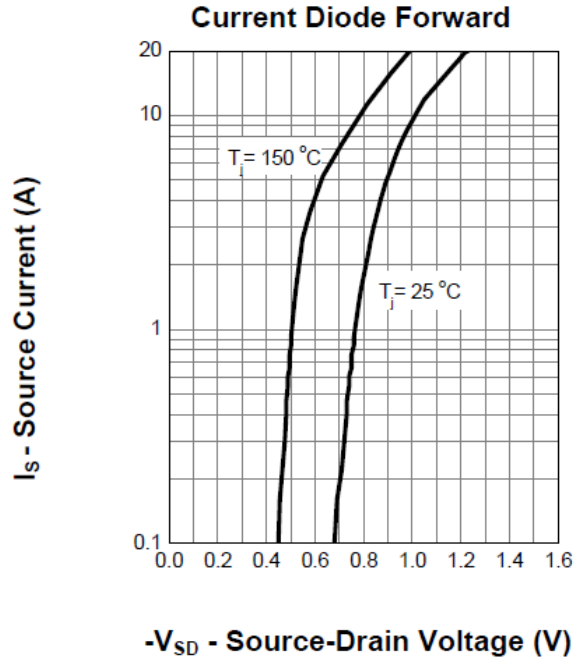
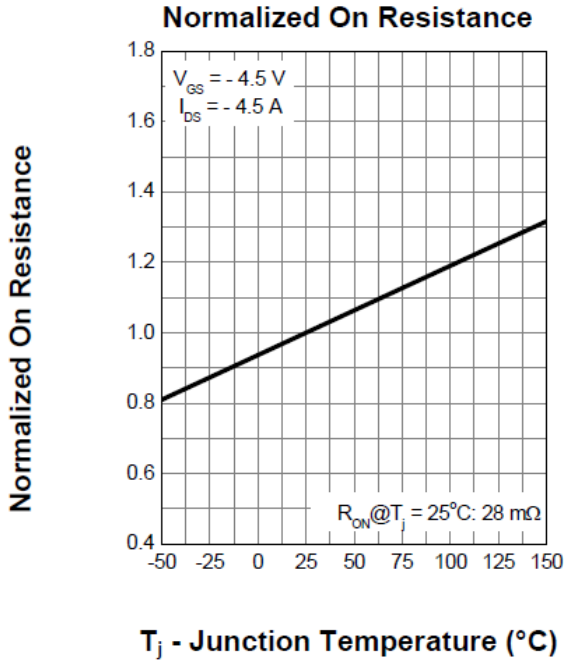
| Parameter                            |            | Symbol   | Rating     | Units |
|--------------------------------------|------------|----------|------------|-------|
| Drain-Source Voltage                 |            | $V_{DS}$ | -20        | V     |
| Gate-Source Voltage                  |            | $V_{GS}$ | $\pm 12$   | V     |
| Drain Current (Note 1)               | Continuous | $I_D$    | -4.7       | A     |
|                                      | Pulsed     |          | -20        |       |
| Total Power Dissipation              | @TA=25°C   | $P_D$    | 1.25       | W     |
|                                      | @TA=75°C   |          | 0.8        |       |
| Operating Junction Temperature Range |            | $T_J$    | -55 to 150 | °C    |

| Electrical Characteristics (T <sub>J</sub> =25°C unless otherwise noted) |  |  |                     |      |      |       |
|--|--|--|---------------------|------|------|-------|
| Symbol   | Parameter                                      | Test Conditions  | Min                 | Typ  | Max  | Units |
| <b>OFF CHARACTERISTICS (Note 2)</b>                                      |  |  |                     |      |      |       |
| BVDSS  | Drain-Source Breakdown Voltage                 | I <sub>D</sub> =-250μA, V <sub>GS</sub> =0 V   | -20                 | -    | -    | V     |
| IDSS   | Zero Gate Voltage Drain Current                | V <sub>DS</sub> =-16 V, V <sub>GS</sub> =0 V   | -                   | -    | 1    | μA    |
| IGSS   | Gate-Body leakage current                      | V <sub>DS</sub> =0 V, V <sub>GS</sub> =±8 V  | -                   | -    | ±100 | μA    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage                         | V <sub>DS</sub> =V <sub>GS</sub> I <sub>D</sub> =-250μA                                    | -0.4                | -    | -1   | V     |
| R <sub>DS(ON)</sub>  | Static Drain-Source On-Resistance <sup>2</sup> | V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-2A  | -                   | 45   | 68   | mΩ    |
|  |  | V <sub>GS</sub> =-2.50V, I <sub>D</sub> =-4.1A   | -                   | 35   | 52   |       |
|  |  | V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-4.7A  | -                   | 30   | 39   |       |
| <b>DYNAMIC PARAMETERS</b>  |  |  |                     |      |      |       |
| C <sub>iss</sub>   | Input Capacitance                              | V <sub>GS</sub> =0V, V <sub>DS</sub> =-10V,<br>f=1MHz                                      | -                   | 1020 | -    | pF    |
| C <sub>oss</sub>   | Output Capacitance                             |  | -                   | 191  | -    | pF    |
| C <sub>rss</sub>   | Reverse Transfer Capacitance                   |  | -                   | 140  | -    | pF    |
| <b>SWITCHING PARAMETERS</b>  |  |  |                     |      |      |       |
| t <sub>d(on)</sub>   | Turn-On DelayTime <sup>2</sup>                 | V <sub>GS</sub> =-10V, V <sub>GEN</sub> =-4.5V,<br>R <sub>L</sub> =10Ω, R <sub>G</sub> =6Ω | -                   | 25   | 50   | ns    |
| t <sub>d(off)</sub>  | Turn-Off DelayTime                             |  | I <sub>D</sub> =-1A | -    | 71   |       |
| V <sub>SD</sub>  | Drain-Source Diode Forward Voltage             | V <sub>GS</sub> =0V, I <sub>S</sub> =-1  | -                   | -    | -1.2 | V     |

## Typical Characteristics

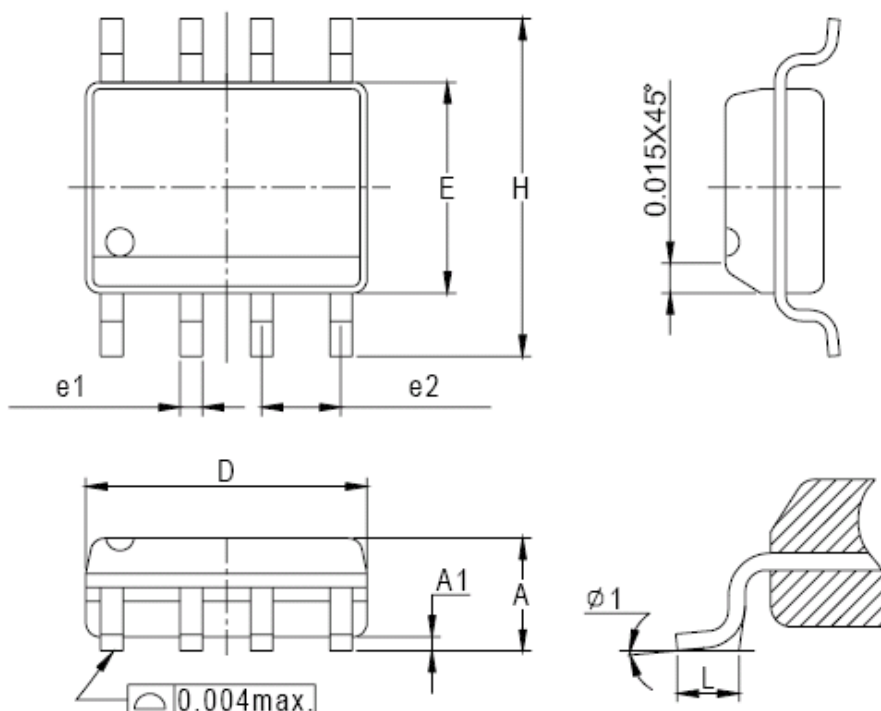






## Packaging Information

SOP-8 pin



| Dim | Millimeters |      | Inches  |       |
|-----|-------------|------|---------|-------|
|     | Min.        | Max. | Min.    | Max.  |
| A   | 1.35        | 1.75 | 0.053   | 0.069 |
| A1  | 0.10        | 0.25 | 0.004   | 0.010 |
| D   | 4.80        | 5.00 | 0.189   | 0.197 |
| E   | 3.80        | 4.00 | 0.150   | 0.157 |
| H   | 5.80        | 6.20 | 0.228   | 0.244 |
| L   | 0.40        | 1.27 | 0.016   | 0.050 |
| e1  | 0.33        | 0.51 | 0.013   | 0.020 |
| e2  | 1.27BSC     |      | 0.50BSC |       |
| φ 1 | 8°          |      | 8°      |       |

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### SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China

Phone: +86-21-33932402 33932403 33932405 33933508 33933608

Fax: +86-21-33932401

Email: szrxw002@126.com

Website: <http://www.sino-ic.net>