



## 650V SuperJunction Power MOSFET

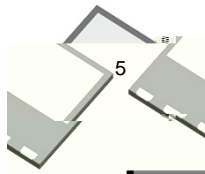
### Features

### Product Summary

| Parameter                                | Value | Unit |
|--|-------|------|
| $V_{DS}$                                 | 650   | V    |
| $V_{GS(th\_Typ)}$                        | 3.5   | V    |
| $I_D$ (@ $V_{GS} = 10V$ ) <sup>(1)</sup> | 4.0   | A    |
| $R_{DS(ON\_Typ)}$ (@ $V_{GS} = 10V$ )    | 890   | m    |
| $E_{oss@400V}$                           | 0.68  | J    |

### Applications

- Telecom / Server Power Supplies
- Industrial Power Supplies
- UPS / Solar
- Lighting / Charger / Adapter



### Ordering Information

| Device           | Package    | # of Pins | Marking  | MSL | $T_J$ (°C) | Media        | Quantity (pcs) |
|------------------|------------|-----------|----------|-----|------------|--------------|----------------|
| JMH65R980APLN-13 | DFN8080-4L | 4         | H65R980A | 1   | -55 to 150 | 13-inch Reel | 3000           |

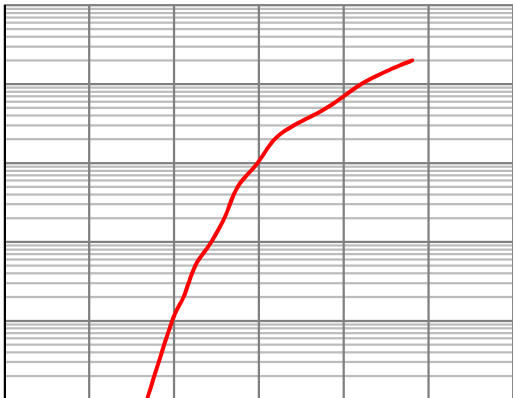
### Absolute Maximum Ratings (@ $T_A = 25^\circ C$ unless otherwise specified)

| Parameter                               | Symbol       | Value               | Unit |
|---|--------------|---------------------|------|
| Drain-to-Source Voltage                 | $V_{DS}$     | 650                 | V    |
| Gate-to-Source Voltage                  | $V_{GS}$     | $\pm 20$            | V    |
| Continuous Drain Current <sup>(1)</sup> | $I_D$        | $T_C = 25^\circ C$  | 4.0  |
|   |              | $T_C = 100^\circ C$ | 2.4  |
| Pulsed Drain Current <sup>(2)</sup>     | $I_{DM}$     | 16.0                | A    |
| Avalanche Current <sup>(3)</sup>        | $I_{AS}$     | 4.0                 | A    |
| Avalanche Energy <sup>(3)</sup>         | $E_{AS}$     | 80                  | mJ   |
| Power Dissipation <sup>(4)</sup>        | $P_D$        | $T_C = 25^\circ C$  | 37   |
|   |              | $T_C = 100^\circ C$ | 14.7 |
| Junction & Storage Temperature Range    | $T_{J\_STG}$ | -55 to 150          | °C   |

|  |  |  |              |
|--|--|--|--------------|
|  |  |  | $I_D = 2.0A$ |
|  |  |  |              |
|  |  |  |              |
|  |  |  |              |
|  |  |  |              |

|                        | Symbol        | Min. | Typ. | Max. | Unit |
|------------------------|---------------|------|------|------|------|
| Gate Threshold Voltage | $V_{(BR)DSS}$ | 650  |      |      | V    |
|                        | $I_{DSS}$     |      |      | 1.0  |      |
|                        | $I_{GSS}$     |      |      | ±100 | nA   |
|                        | $V_{GS(th)}$  | 2.5  | 3.5  | 4.5  | V    |
|                        | $R_{DS(ON)}$  |      | 890  | 980  | m    |
|                        | $V_{SD}$      |      | 0.75 |      | V    |
|                        | $I_S$         |      |      |      |      |

Typical Electrical & Thermal Characteristics





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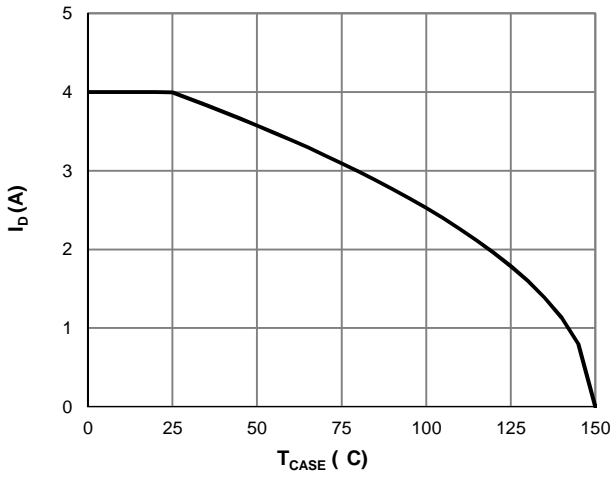


Figure 7: Current De-rating

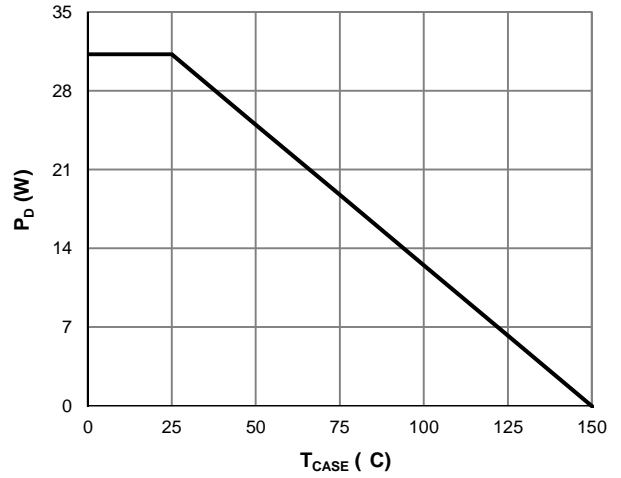


Figure 8: Power De-rating

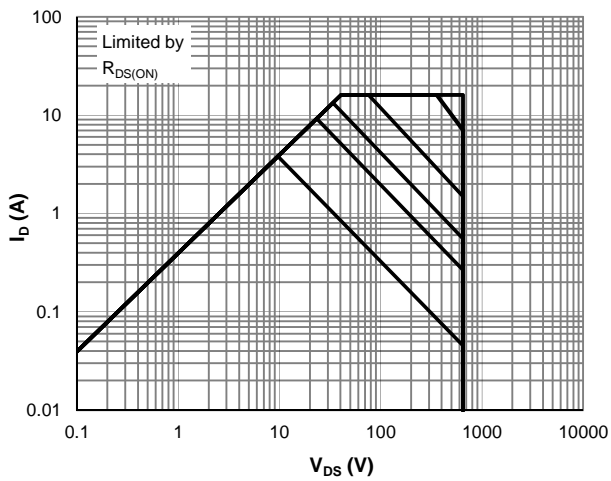
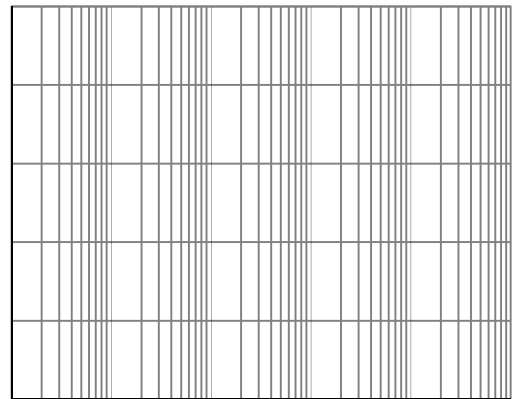
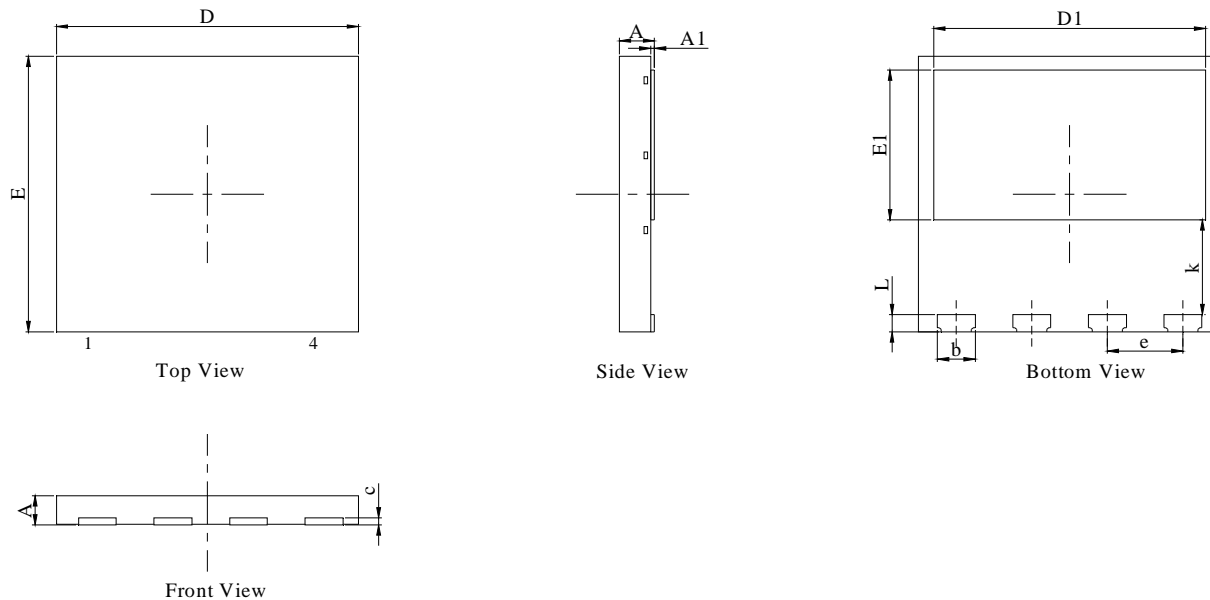


Figure 9: Maximum Safe Operating Area





DFN8080-4L Package Information



| DIM. | MILLIMETER |      |      |
|------|------------|------|------|
|      | MIN.       | NOM. | MAX. |
| A    | 0.85       | 0.90 | 0.95 |
| A1   | --         | --   | 0.05 |
| b    | 0.95       | 1.00 | 1.05 |
| c    | --         | 0.20 | --   |
| D    | 7.90       | 8.00 | 8.10 |
| D1   | 7.10       | 7.20 | 7.30 |
| E    | 7.90       | 8.00 | 8.10 |
| E1   | 4.25       | 4.35 | 4.45 |
| L    | 0.40       | 0.50 | 0.60 |
| k    | 2.75       |      |      |
| Y    | 2.00 BSC   |      |      |

