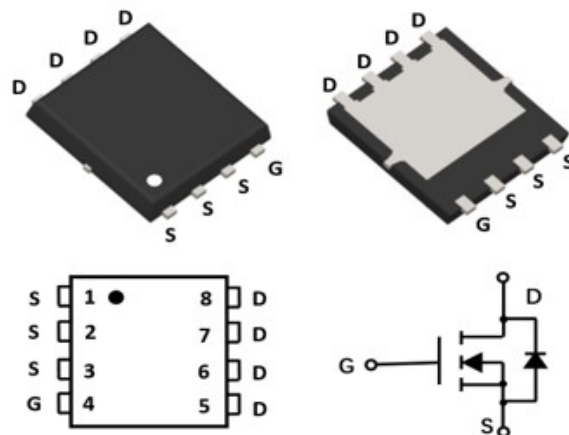


**MOSFET (N-CHANNEL)**
**FEATURES**

- Low on-resistance
- Fast switching speed
- Easily designed drive circuits
- Easy to parallel

**MECHANICAL DATA**

- Case: PDFN5x6
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.016 grams (approximate)
- **Marking:G150N03**

**PDFN 5X6**

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

| Parameter                                   | Symbol                            | Value     | Unit |
|---|-----------------------------------|-----------|------|
| Drain-source voltage                        | V <sub>DS</sub>                   | 30        | V    |
| Gate-source voltage                         | V <sub>GS</sub>                   | ±20V      | V    |
| Continuous drain current                    | I <sub>D</sub>                    | 150       | A    |
| Power dissipation                           | P <sub>D</sub>                    | 75        | W    |
| Thermal resistance from Junction to ambient | R <sub>θJA</sub>                  | 20        | °C/W |
| Junction and Storage temperature            | T <sub>J</sub> , T <sub>STG</sub> | -55 ~+150 | °C   |

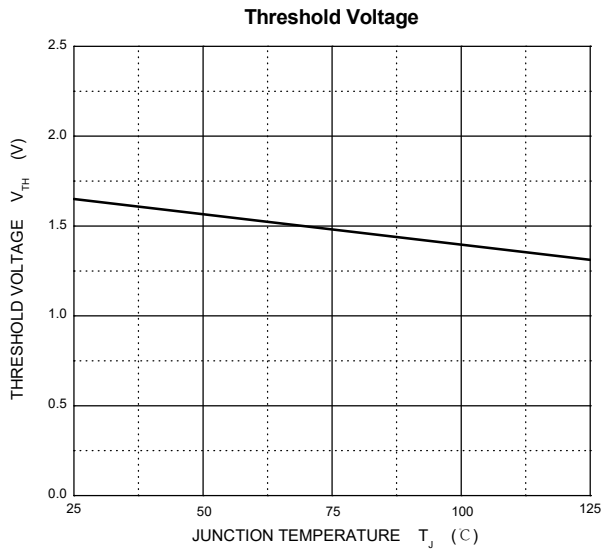
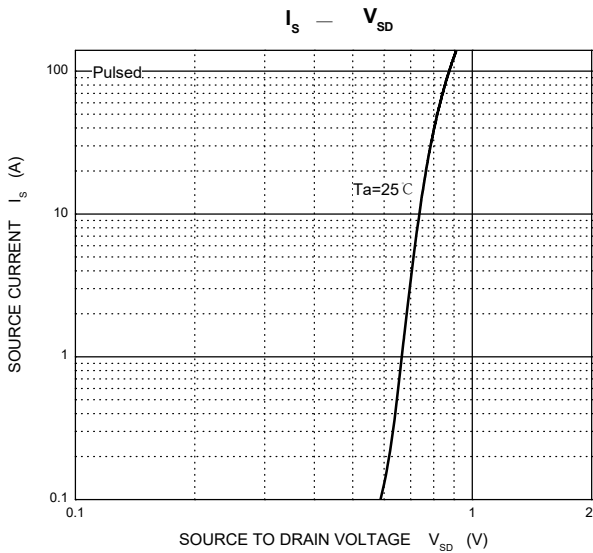
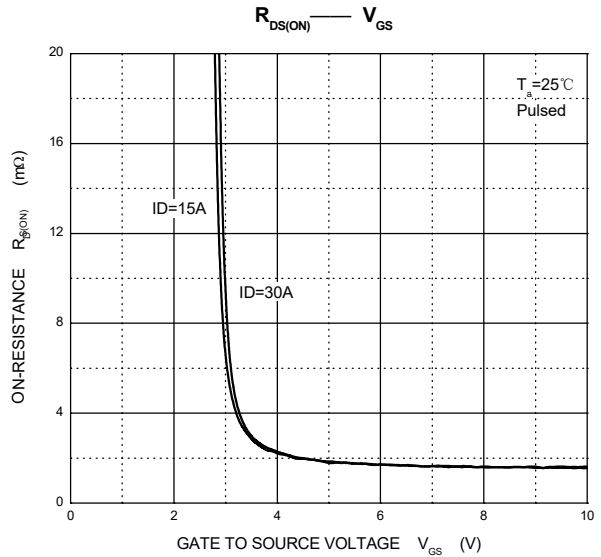
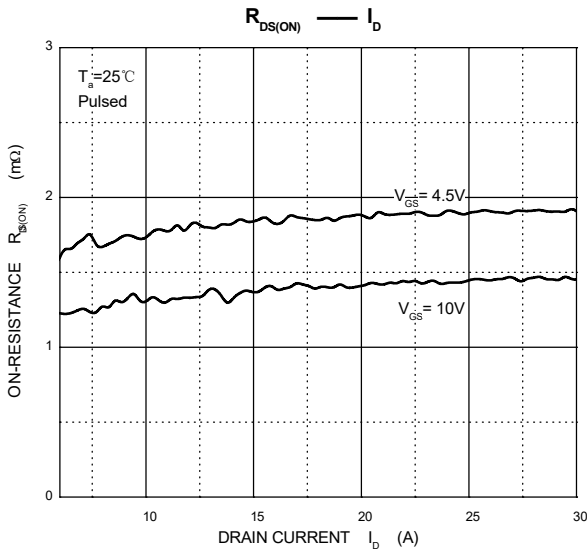
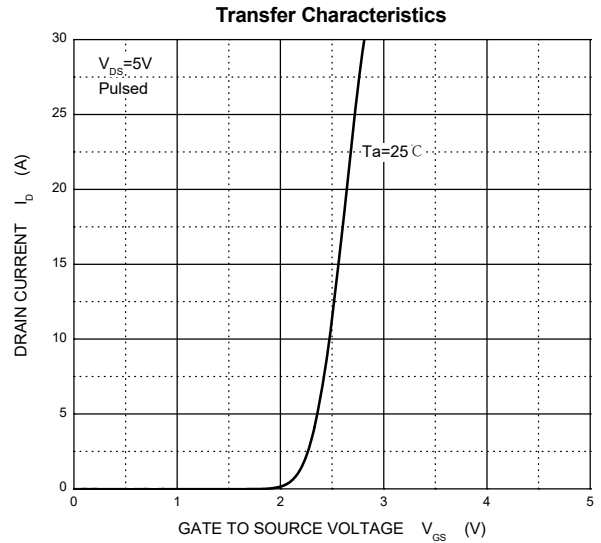
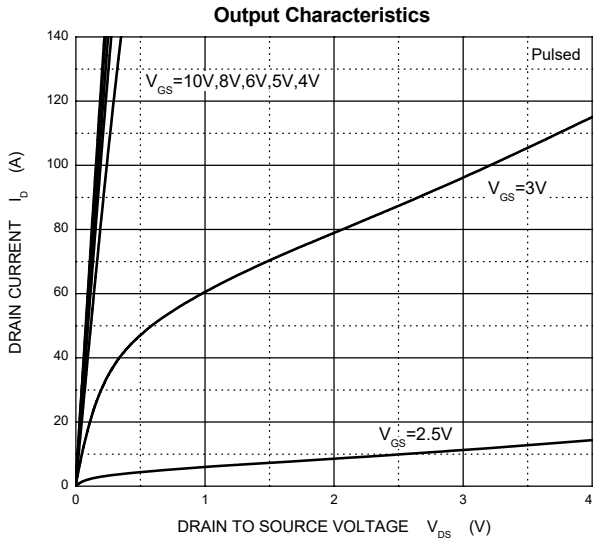
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

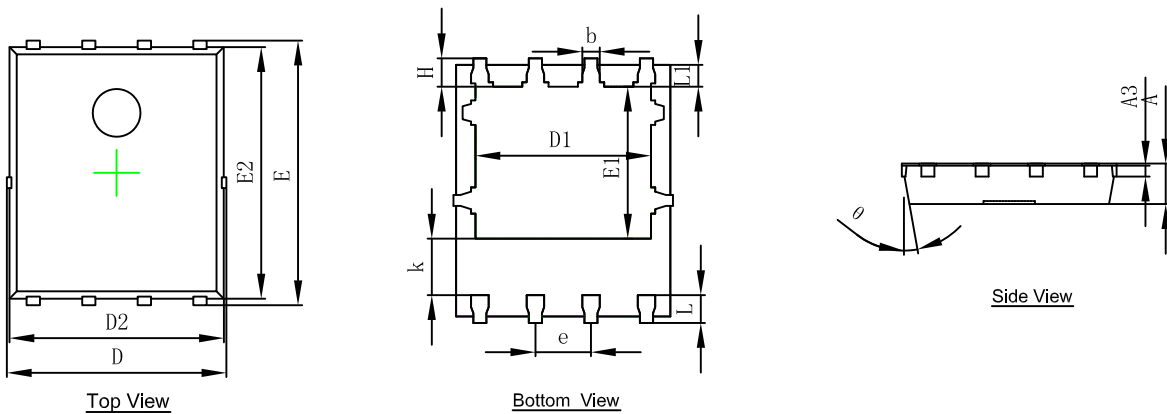
| Parameter                           | Symbol               | Min | Typ  | Max  | Unit | Conditions  |
|-------------------------------------|----------------------|-----|------|------|------|---|
| <b>Off Characteristics</b>          |                      |     |      |      |      |   |
| Drain-Source breakdown voltage      | V <sub>(BR)DSS</sub> | 30  |      |      | V    | V <sub>GS</sub> =0V, I <sub>D</sub> =250μA  |
| Zero gate voltage drain current     | I <sub>DSS</sub>     |     |      | 1    | μA   | V <sub>DS</sub> =30V, V <sub>GS</sub> =0V   |
| Gate-body leakage current           | I <sub>GSS</sub>     |     |      | ±100 | nA   | V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V  |
| Gate-threshold voltage (note 1)     | V <sub>GS(th)</sub>  | 1.1 | 1.6  | 2.4  | V    | V <sub>DS</sub> =20V, I <sub>D</sub> =250μA   |
| Drain-source on-resistance (note 1) | R <sub>DS(ON)</sub>  |     | 2    | 3    | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =30A   |
|                                     |                      |     | 4    | 6    | mΩ   | V <sub>GS</sub> =4.5V, I <sub>D</sub> =20A  |
| <b>Dynamic Characteristics</b>      |                      |     |      |      |      |   |
| Input capacitance                   | C <sub>iss</sub>     |     | 4500 |      | pF   | V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz   |
| Output capacitance                  | C <sub>oss</sub>     |     | 800  |      | pF   |   |
| Reverse transfer capacitance        | C <sub>rss</sub>     |     | 640  |      | pF   |   |
| <b>Switching Characteristics</b>    |                      |     |      |      |      |   |
| Turn-on delay time                  | t <sub>d(on)</sub>   |     | 11   |      | nS   | V <sub>DD</sub> =20V, V <sub>GS</sub> =10V, I <sub>D</sub> =4A<br>R <sub>g</sub> =3Ω, R <sub>L</sub> =0.75Ω |
| Turn-on rise time                   | t <sub>r</sub>       |     | 80   |      | nS   |   |
| Turn-off delay time                 | t <sub>d(off)</sub>  |     | 39   |      | nS   |   |
| Turn-off fall time                  | t <sub>f</sub>       |     | 92   |      | nS   |   |

Note:1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2% .

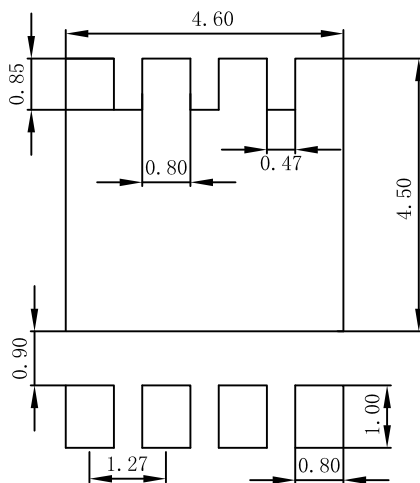
MOSFET (N-CHANNEL)

Typical Characteristics

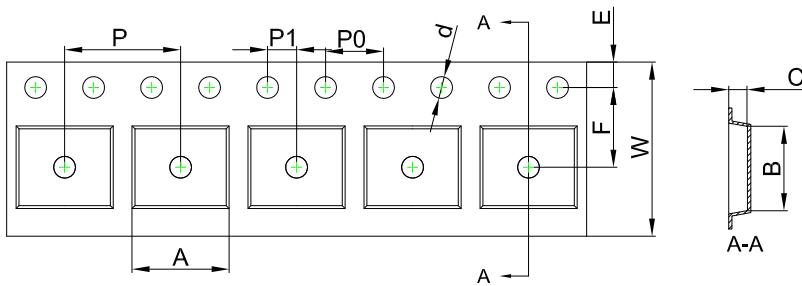


**MOSFET (N-CHANNEL)**
**PDFN5X6 Package information**


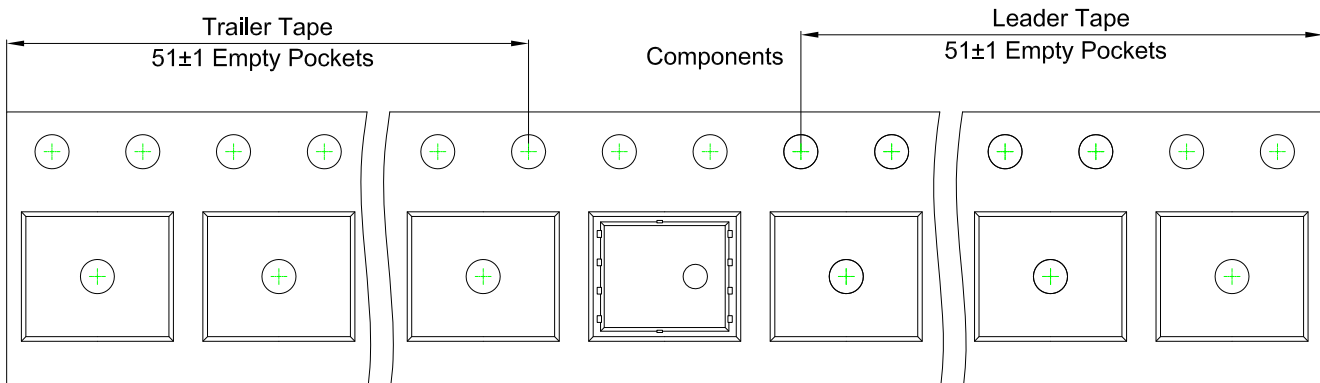
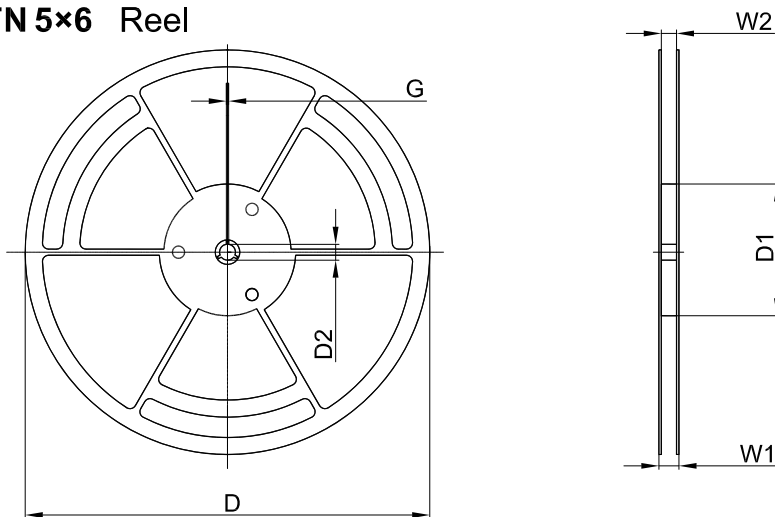
| Symbol   | Dimensions In Millimeters |       | Dimensions In Inches |       |
|----------|---------------------------|-------|----------------------|-------|
|          | Min.                      | Max.  | Min.                 | Max.  |
| A        | 0.900                     | 1.000 | 0.035                | 0.039 |
| A3       | 0.254REF.                 |       | 0.010REF.            |       |
| D        | 4.944                     | 5.096 | 0.195                | 0.201 |
| E        | 5.974                     | 6.126 | 0.235                | 0.241 |
| D1       | 3.910                     | 4.110 | 0.154                | 0.162 |
| E1       | 3.375                     | 3.575 | 0.133                | 0.141 |
| D2       | 4.824                     | 4.976 | 0.190                | 0.196 |
| E2       | 5.674                     | 5.826 | 0.223                | 0.229 |
| k        | 1.190                     | 1.390 | 0.047                | 0.055 |
| b        | 0.350                     | 0.450 | 0.014                | 0.018 |
| e        | 1.270TYP.                 |       | 0.050TYP.            |       |
| L        | 0.559                     | 0.711 | 0.022                | 0.028 |
| L1       | 0.424                     | 0.576 | 0.017                | 0.023 |
| H        | 0.574                     | 0.726 | 0.023                | 0.029 |
| $\theta$ | 10°                       | 12°   | 10°                  | 12°   |

**PDFN 5x6 Suggested Pad Layout**

**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

**MOSFET (N-CHANNEL)**
**PDFN 5x6 Embossed Carrier Tape**


| Dimensions are in millimeter |      |      |      |       |      |      |      |      |      |       |
|------------------------------|------|------|------|-------|------|------|------|------|------|-------|
| Pkg type                     | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W     |
| <b>PDFN 5x6</b>              | 6.30 | 5.30 | 1.10 | Ø1.50 | 1.75 | 5.50 | 4.00 | 8.00 | 2.00 | 12.00 |

**PDFN 5x6 Tape Leader and Trailer**

**PDFN 5x6 Reel**


| Dimensions are in millimeter |         |        |       |      |       |       |
|------------------------------|---------|--------|-------|------|-------|-------|
| Reel Option                  | D       | D1     | D2    | G    | W1    | W2    |
| 13" Dia                      | Ø330.00 | 100.00 | 13.00 | 1.90 | 17.60 | 12.40 |

| REEL      | Reel Size | Box       | Box Size(mm) | Carton     | Carton Size(mm) |
|-----------|-----------|-----------|--------------|------------|-----------------|
| 5,000 pcs | 13 inch   | 5,000 pcs | 340×336×29   | 50,000 pcs | 353×346×365     |