

Rev.A Feb.-2026

TOLL-8L N

N-Channel MOSFET in a TOLL-8L Plastic Package .

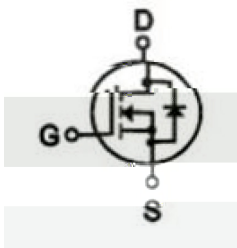
$V_{DS}(V)=120V$   $I_D=330A$

$R_{DS(ON)}@10V \leq 1.6m\Omega$  (Typ. 1.17m $\Omega$ )

HF Product.

DC/DC

Motor control and drives, Battery management, DC/DC converter.

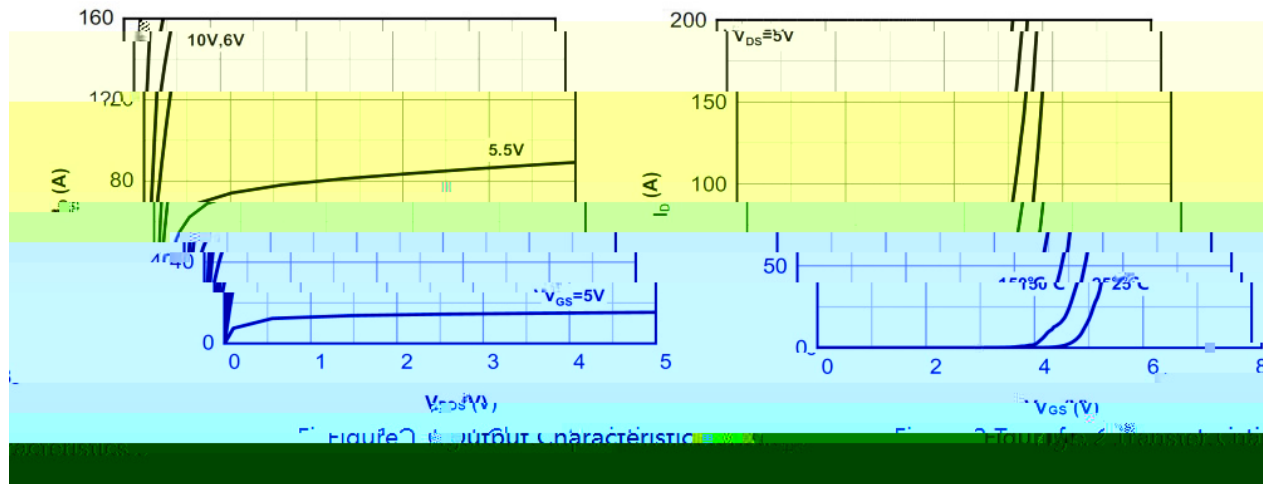
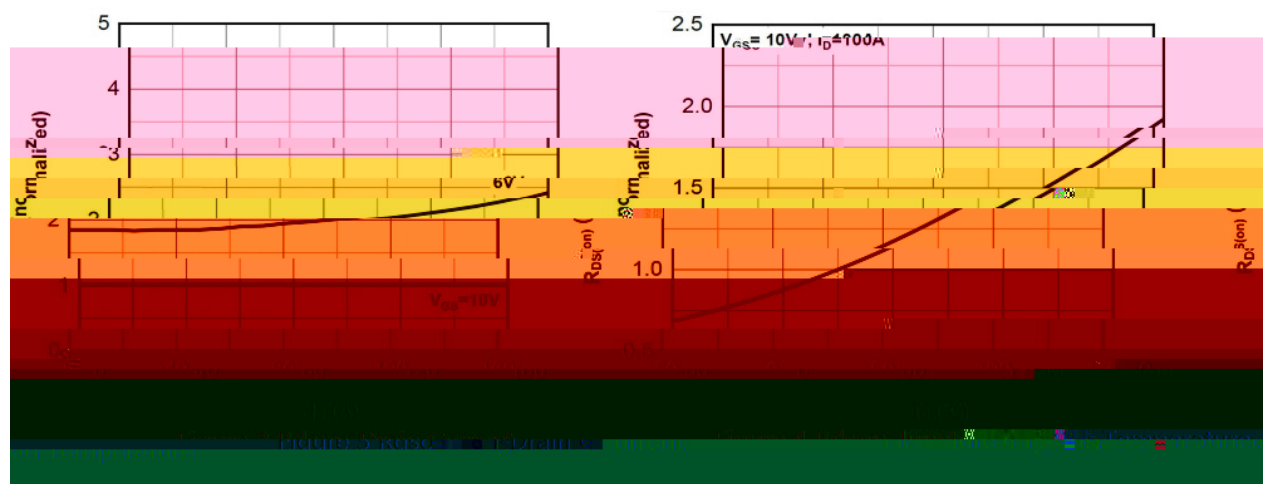
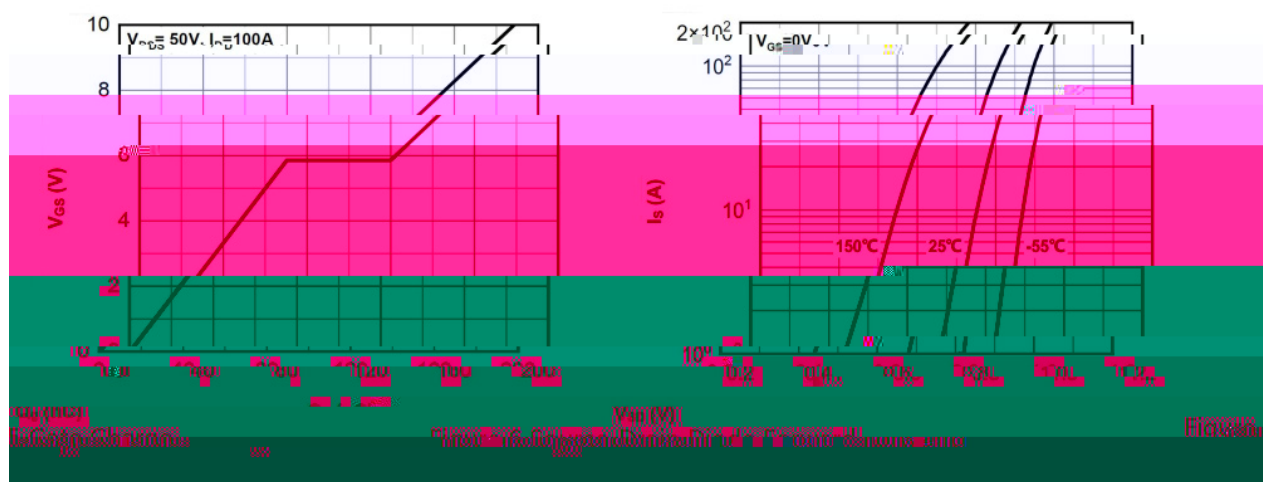


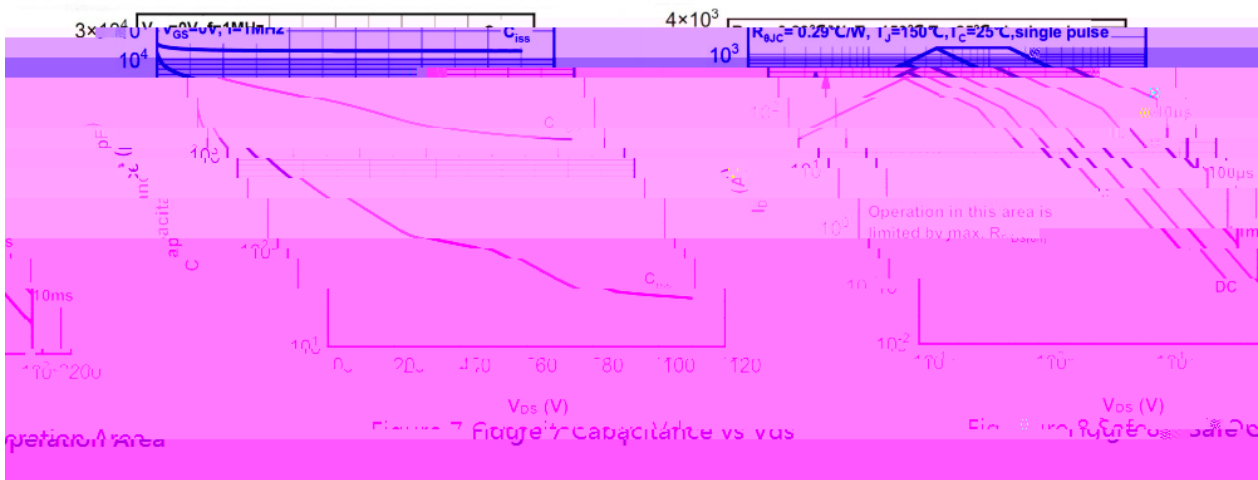
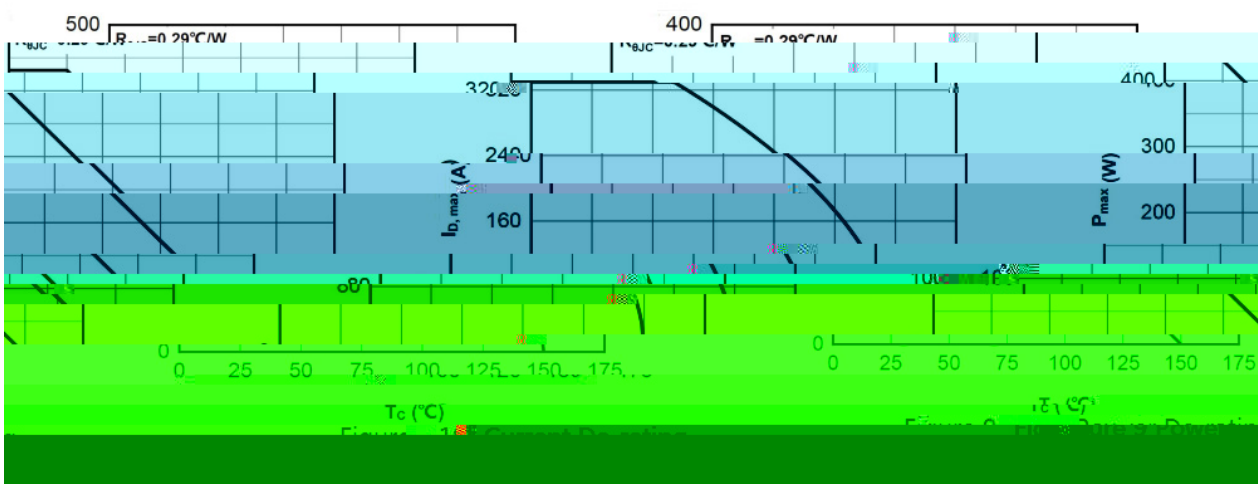
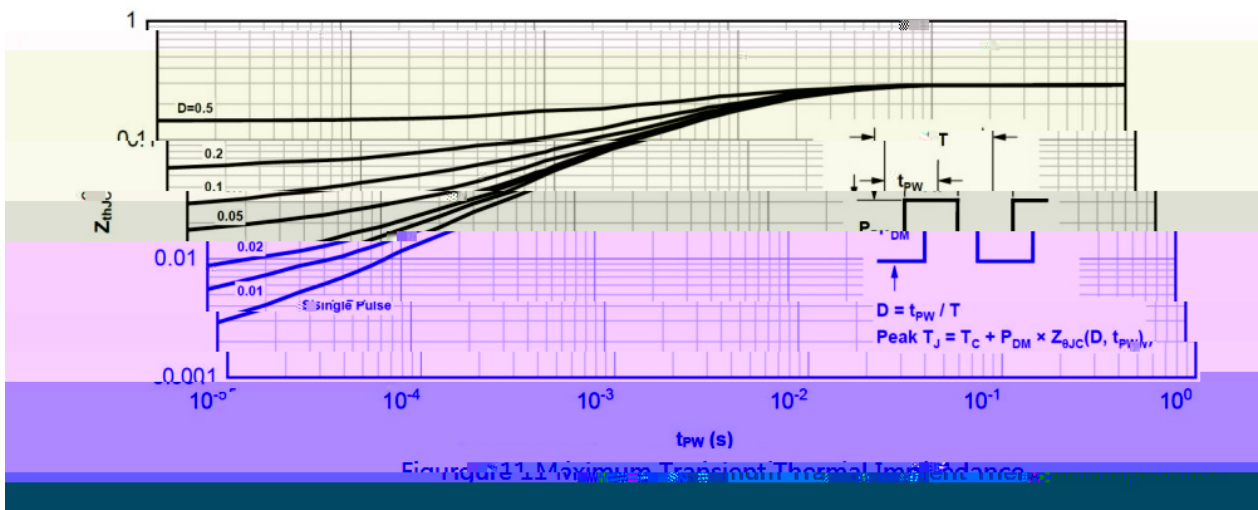
PIN1 G PIN2 3 4 5 6 7 8 S PIN9 D

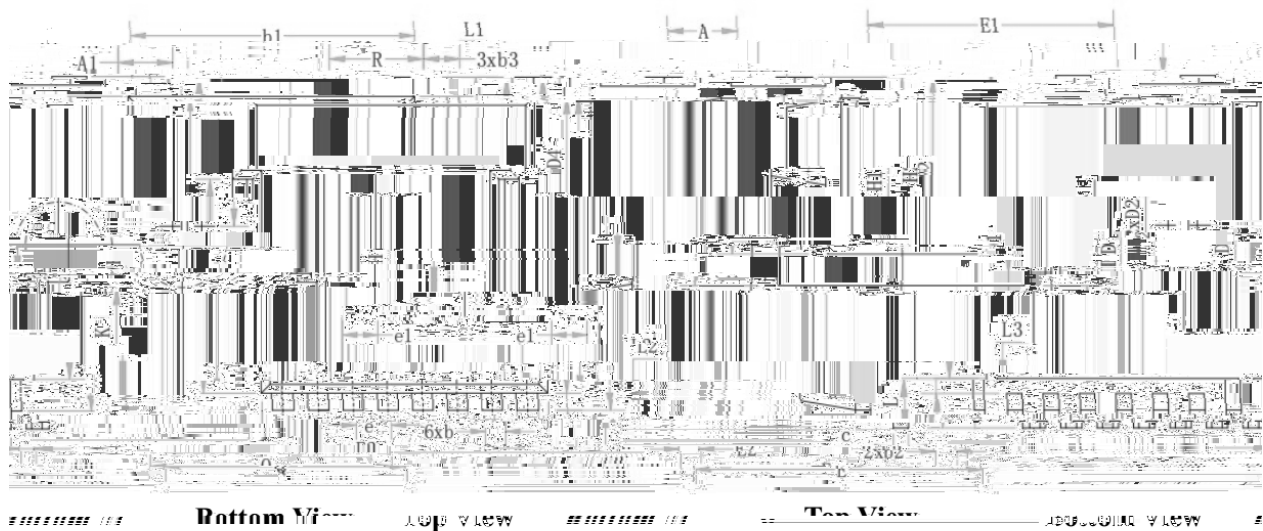
See Marking Instructions.

| Parameter                              | Symbol                       | Rating     | Unit |
|----------------------------------------|------------------------------|------------|------|
| Drain-Source Voltage                   | $V_{DS}$                     | 120        | V    |
| Drain Current(DC)                      | $I_D(T_C=25^\circ\text{C})$  | 330        | A    |
|                                        | $I_D(T_C=100^\circ\text{C})$ | 258        | A    |
| Drain Current – Pulsed                 | $I_{DM}$                     | 1320       | A    |
| Gate-Source Voltage                    | $V_{GS}$                     | 20         | V    |
| Power Dissipation                      | $P_{tot}$                    | 431        | W    |
| Single Pulse Avalanche Energy          | $E_{AS}$                     | 2601       | mJ   |
| Junction and Storage Temperature Range | $T_j, T_{stg}$               | -55 to 150 |      |
| Thermal resistance, junction - case    | $R_{\theta JC}$              | 0.29       | /W   |
| Thermal resistance, junction - Ambient | $R_{\theta JA}$              | 40         |      |

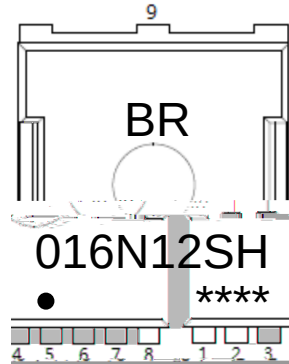
| Parameter                         | Symbol       | Test Conditions                           | Min | Typ  | Max | Unit          |
|-----------------------------------|--------------|-------------------------------------------|-----|------|-----|---------------|
| Drain-Source Breakdown Voltage    | $BV_{DSS}$   | $I_D=250\mu\text{A}, V_{GS}=0\text{V}$    | 119 | 121  |     | V             |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=110\text{V}, V_{GS}=0\text{V}$    |     |      | 1   | $\mu\text{A}$ |
| Gate-Body leakage current         | $I_{GSS}$    | $V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$ |     |      | 100 | nA            |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$       | 2.2 | 3.0  | 4.0 | V             |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=10\text{V}, I_D=40\text{A}$       |     | 1.17 | 1.6 | m $\Omega$    |
| Diode Forward Voltage             | $V_{SD}$     | $I_S=40\text{A}, V_{GS}=0\text{V}$        |     | 0.85 | 1.1 | V             |
| Reverse Recovery Time             | $t_{rr}$     |                                           |     |      |     | V             |







| Symbol | Min   | Typ   | Max   | Symbol | Min   | Typ   | Max   |
|--------|-------|-------|-------|--------|-------|-------|-------|
| A      | 2.25  | 2.30  | 2.35  | E      | 0.85  | 0.90  | 0.95  |
| A1     | 1.75  | 1.80  | 1.85  | E1     | 8.00  | 8.10  | 8.2   |
| b      | 0.65  | 0.70  | 0.75  | E2     | 0.65  | 0.70  | 0.75  |
| b1     | 9.75  | 9.80  | 9.85  | H      | 11.60 | 11.70 | 11.80 |
| h2     | 0.70  | 0.75  | 0.80  | H1     | 6.95  | 7.00  | 7.05  |
| h3     | 1.15  | 1.20  | 1.25  | H2     | 5.95  | 6.00  | 6.05  |
| h4     | 0.45  | 0.50  | 0.55  | H3     | 2.95  | 3.00  | 3.05  |
| D      | 10.35 | 10.40 | 10.45 | L      | 1.55  | 1.60  | 1.65  |
| D1     | 11.00 | 11.10 | 11.20 | L1     | 0.65  | 0.70  | 0.75  |
| D2     | 3.25  | 3.30  | 3.35  | L2     | 0.50  | 0.55  | 0.60  |
| D3     | 4.50  | 4.55  | 4.60  | L3     | 0.40  | 0.45  | 0.50  |
| D4     | 1.20  | 1.25  | 1.30  | L4     | 0.30  | 0.35  | 0.40  |
| e      | 1.225 | 1.25  | 1.275 | R      | 3.00  | 3.05  | 3.10  |



BR

016N12SH

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Note

BR                      Company Code

016N12SH          Product Type Code

\*\*\*\*:                Lot No. Code, code change with Lot No.

Temperature Profile for IR Reflow Soldering(Pb-Free)

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|  |
|  |
|  |
|  |
|  |
|  |

- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL