

NTH4L015N065SC1

Table 1. THERMAL CHARACTERISTICS

| Parameter | Symbol | Max | Unit |
|---|-----------------|-----|------|
| Junction-to-Case – Steady State (Note 1) | $R_{\theta JC}$ | 0.3 | °C/W |
| Junction-to-Ambient – Steady State (Note 1) | $R_{\theta JA}$ | 40 | |

Table 2. ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit | |
|---|-------------------|---|---------------------------|------|-----|------|---------------|
| OFF CHARACTERISTICS | | | | | | | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS} = 0\text{ V}, I_D = 1\text{ mA}$ | 650 | – | – | V | |
| Drain-to-Source Breakdown Voltage Temperature Coefficient | $V_{(BR)DSS}/T_J$ | $I_D = 20\text{ mA}$, referenced to 25°C | – | 0.12 | – | V/°C | |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{GS} = 0\text{ V}, V_{DS} = 650\text{ V}$ | $T_J = 25^\circ\text{C}$ | – | – | 10 | μA |
| | | | $T_J = 175^\circ\text{C}$ | – | – | 1 | mA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS} = +22/-8\text{ V}, V_{DS} = 0\text{ V}$ | – | – | 250 | nA | |

ON CHARACTERISTICS (Note 2)

| | | | | | | |
|-------------------------------|--------------|--|-----|-----|-----|------------|
| Gate Threshold Voltage | $V_{GS(TH)}$ | $V_{GS} = V_{DS}, I_D = 25\text{ mA}$ | 1.8 | 2.5 | 4.3 | V |
| Recommended Gate Voltage | V_{GOP} | | –5 | – | +18 | V |
| Drain-to-Source On Resistance | $R_{DS(on)}$ | $V_{GS} = 15\text{ V}, I_D = 75\text{ A}, T_J = 25^\circ\text{C}$ | – | 15 | – | m Ω |
| | | $V_{GS} = 18\text{ V}, I_D = 75\text{ A}, T_J = 25^\circ\text{C}$ | – | 12 | 18 | |
| | | $V_{GS} = 18\text{ V}, I_D = 75\text{ A}, T_J = 175^\circ\text{C}$ | – | 16 | – | |
| Forward Transconductance | g_{FS} | $V_{DS} = 10\text{ V}, I_D = 75\text{ A}$ | – | 47 | – | S |

CHARGES, CAPACITANCES & GATE RESISTANCE

| | | | | | | |
|------------------------------|-----------|--|---|------|---|----|
| Input Capacitance | C_{ISS} | $V_{GS} = 0\text{ V}, f = 1\text{ MHz}, V_{DS} = 325\text{ V}$ | – | 4790 | – | pF |
| Output Capacitance | C_{OSS} | | – | 430 | – | |
| Reverse Transfer Capacitance | C_{RSS} | | – | 33 | – | |

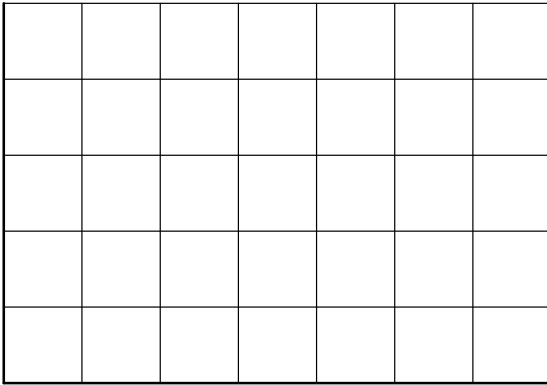
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Table 2. ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise specified) (continu

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TYPICAL CHARACTERISTICS (CONTINUED)

V_{GS} , GATE-TO-SOURCE VOLTAGE (V)



Q_g , GATE CHARGE (nC)

Figure 7. Gate-to-Source Voltage vs. Total Charge

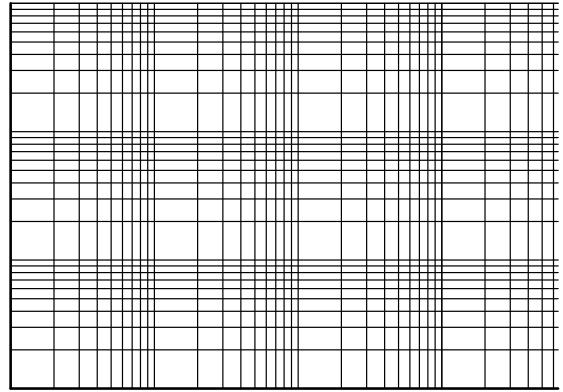
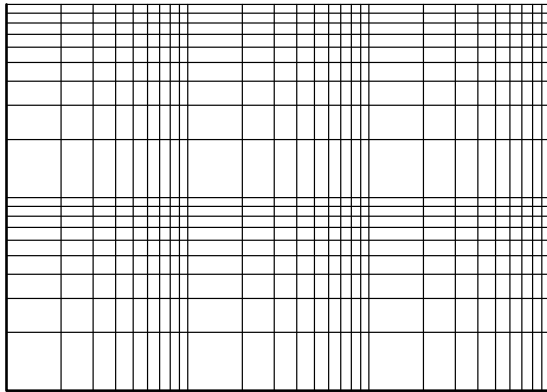


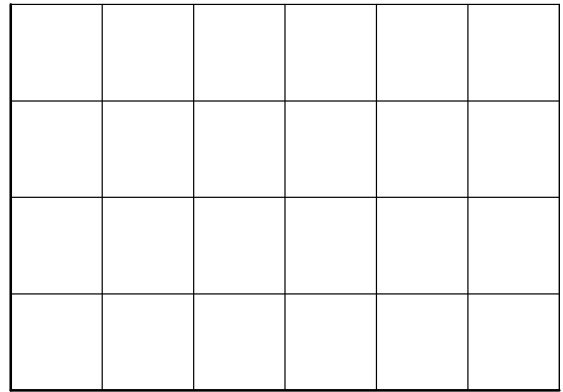
Figure 8. Capacitance vs. Drain-to-Source Voltage

I_{AS} , AVALANCHE CURRENT (A)



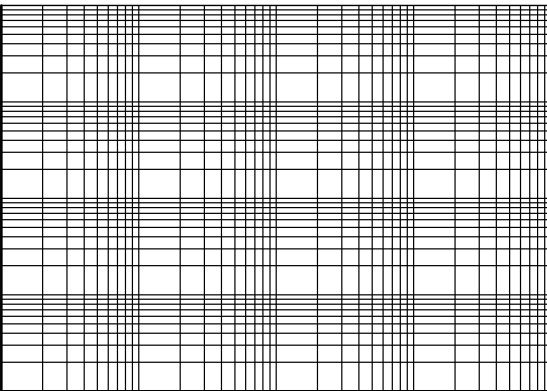
t_{AV} , TIME IN AVALANCHE (ms)

Figure 9. Unclamped Inductive Switching Capability



T_C , CASE TEMPERATURE ($^{\circ}C$)

Figure 10. Maximum Continuous Drain Current vs. Case Temperature



V_{DS} , DRAIN-TO-SOURCE VOLTAGE (V)

Figure 11. Safe Operating Area

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TO-247-4LD
CASE 340CJ
ISSUE A

DATE 16 SEP 2019

A E A B A2 E1 \emptyset p1
D2

E/2 Q D1

D \emptyset

L1

b2 A1

b1 (3X) L

1 4

e1 b(4X) c

e 2X

\oplus 0.254 (M) B A (M)

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