

Features

| | |
|--------------|---------------|
| BV_{DSS} | 30V |
| $R_{DS(ON)}$ | 450m Ω |
| I_D | 800mA |

Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

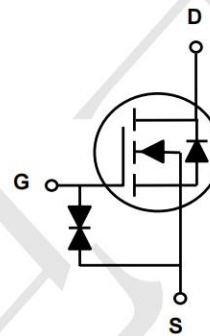
Package and Pin Configuration



DFN1006-3L

Marking:35

Circuit diagram



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Max. | Unit |
|--|-----------------|-------------|---------------------------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 12 | V |
| Drain Current-Continuous($T_C=25^\circ\text{C}$) | I_D | 800 | mA |
| Drain Current-Pulsed ¹ | I_{DM} | 2100 | mA |
| Power Dissipation($T_C=25^\circ\text{C}$) | P_D | 155 | mW |
| Power Dissipation-Derate Above 25°C | | 1.25 | mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 800 | $^\circ\text{C}/\text{W}$ |
| Storage Temperature Range | T_{STG} | -55 To +150 | $^\circ\text{C}$ |
| Operating Junction Temperature Range | T_J | -55 To +150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|------------------------------|---|------|-------|----------|----------------------|
| Off Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=250\mu A$ | 30 | - | - | V |
| BV_{DSS} Temperature Coefficient | $\Delta BV_{DSS}/\Delta T_J$ | Reference to 25°C , $I_D=1mA$ | - | -0.03 | - | $V/^\circ\text{C}$ |
| Drain-Source Leakage Current | I_{DSS} | $V_{DS}=30V, V_{GS}=0V,$ $T_J=25^\circ\text{C}$ | - | - | 1 | μA |
| | | $V_{DS}=24V, V_{GS}=0V,$ $T_J=125^\circ\text{C}$ | - | - | 10 | μA |
| Gate-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 12V, V_{DS}=0V$ | - | - | ± 20 | μA |
| On Characteristics | | | | | | |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=4.5V, I_D=0.5A$ | - | 350 | 450 | m Ω |
| | | $V_{GS}=2.5V, I_D=0.5A$ | - | 450 | 650 | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu A$ | 0.5 | 0.8 | 1.2 | V |
| $V_{GS(th)}$ Temperature Coefficient | $\Delta V_{GS(th)}$ | | - | -1.74 | - | mV/ $^\circ\text{C}$ |
| Forward Transconductance | g_{FS} | $V_{DS}=4V, I_D=0.3A$ | - | 1 | - | S |
| Dynamic and Switching Characteristics | | | | | | |
| Total Gate Charge ^{2,3} | Q_g | $V_{DS}=15V, I_D=0.3A,$ $V_{GS}=4.5V$ | - | 2.6 | 5.2 | nC |
| Gate-Source Charge ^{2,3} | Q_{gs} | | - | 0.9 | 1.8 | |
| Gate-Drain Charge ^{2,3} | Q_{gd} | | - | 0.6 | 1.2 | |
| Turn-On Delay Time ^{2,3} | $t_{d(on)}$ | $V_{DD}=15V, R_G=10\Omega$ $V_{GS}=4.5V, I_D=0.3A$ | - | 5.5 | 11 | nS |
| Rise Time ^{2,3} | t_r | | - | 4 | 8 | |
| Turn-Off Delay Time ^{2,3} | $t_{d(off)}$ | | - | 14.5 | 29 | |
| Fall Time ^{2,3} | t_f | | - | 6.5 | 13 | |
| Input Capacitance | C_{iss} | $V_{DS}=15V, V_{GS}=0V,$ $F=1MHz$ | - | 72.9 | 146 | PF |
| Output Capacitance | C_{oss} | | - | 18.3 | 36.6 | |
| Reverse Transfer Capacitance | C_{rss} | | - | 7.4 | 14.8 | |
| Drain-Source Diode Characteristics and Maximum Ratings | | | | | | |
| Continuous Source Current | I_S | $V_G=V_D=0V,$ | - | - | 400 | mA |
| Pulsed Source Current | I_{SM} | Force Current | - | - | 800 | |
| Diode Forward Voltage | V_{SD} | $V_{GS}=0V, I_S=0.2A,$ $T_J=25^\circ\text{C}$ | - | - | 1 | V |
| Reverse Recovery Time | T_{rr} | $V_{GS}=0V, I_S=0.3A,$ $d/d_i=100A/\mu s,$ | - | 13 | - | nS |
| Reverse Recovery Charge | Q_{rr} | $T_J=25^\circ\text{C}$ | - | 6 | - | nC |

Typical Electrical and Thermal Characteristic Curves

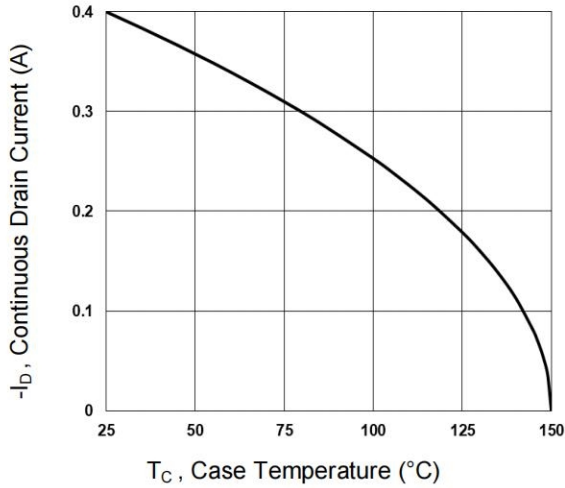


Figure 1. Continuous Drain Current vs. T_c

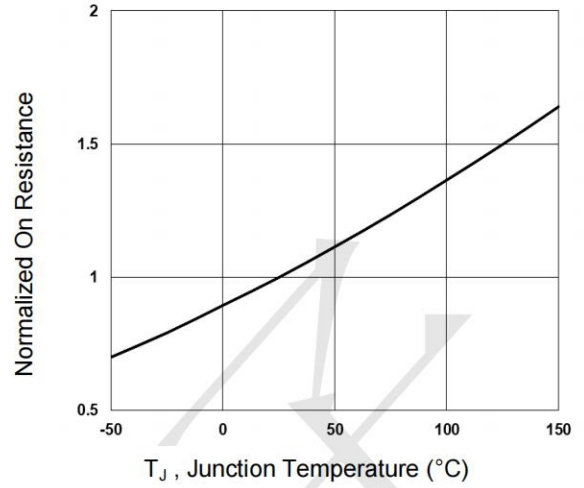


Figure 2. Normalized $R_{DS(on)}$ vs. T_j

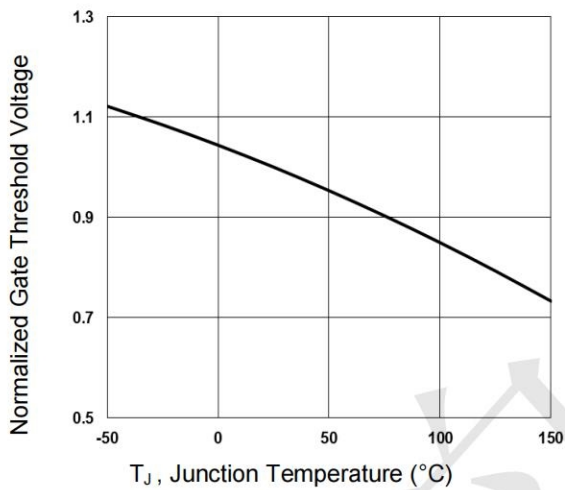


Figure 3. Normalized V_{th} vs. T_j

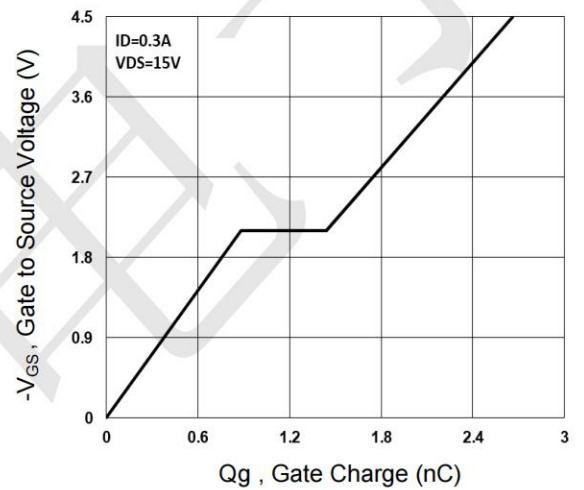


Figure 4. Gate Charge Waveform

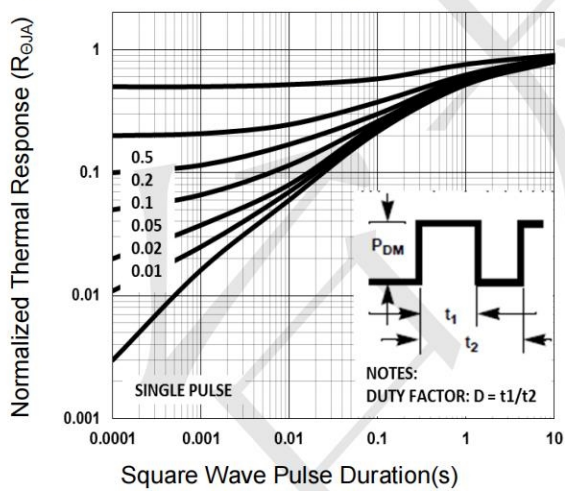


Figure 5. Normalized Transient Response

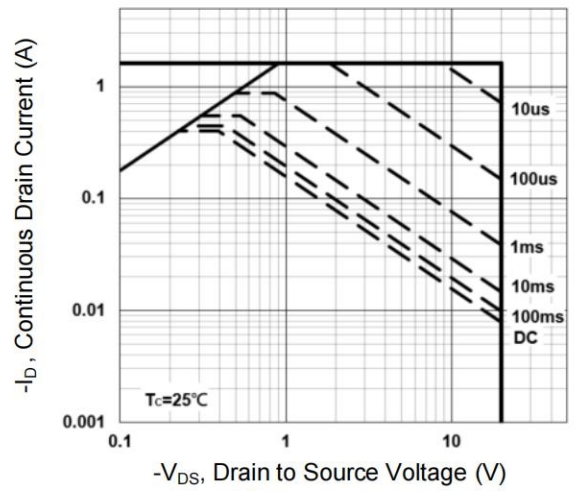


Figure 6. Maximum Safe Operation Area

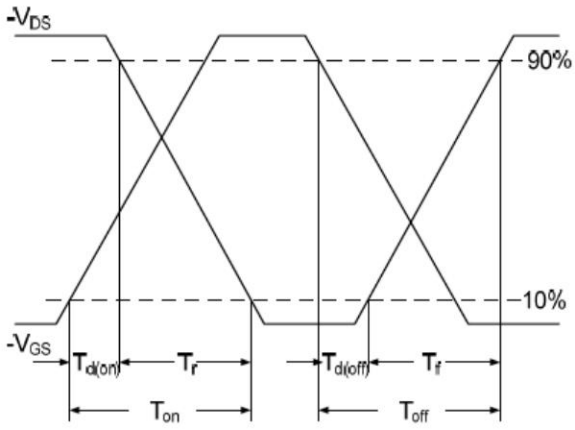


Figure 7. Switching Time Waveform

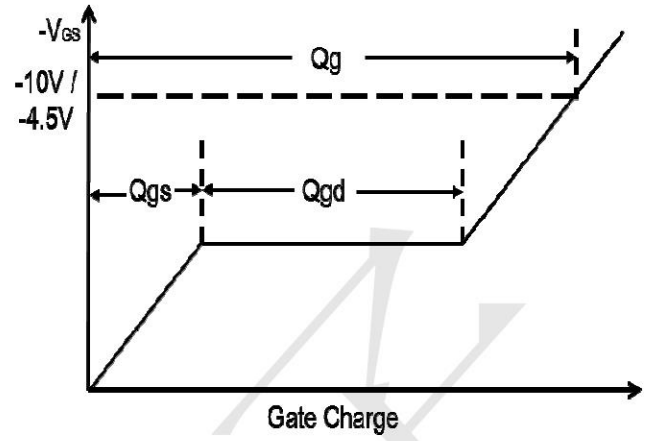
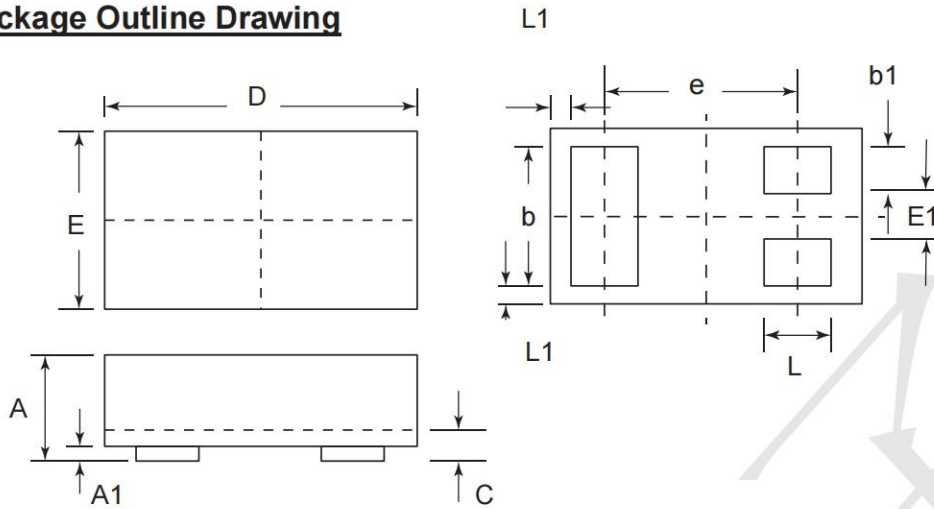


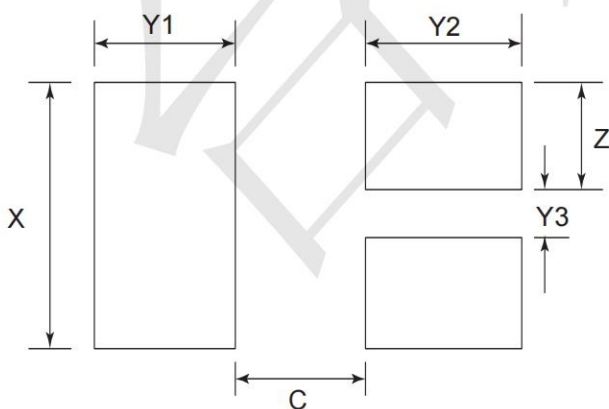
Figure 8. Gate Charge Waveform

DFN1006-3L Package Outline Drawing



| SYM | DIMENSIONS | | | | | |
|-----|-------------|------|------|------------|-------|-------|
| | MILLIMETERS | | | INCHES | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| A1 | 0.00 | 0.02 | 0.05 | 0.000 | 0.001 | 0.002 |
| b | 0.45 | 0.50 | 0.55 | 0.018 | 0.020 | 0.022 |
| b1 | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| C | 0.12 | 0.15 | 0.18 | 0.005 | 0.006 | 0.007 |
| D | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| E | 0.55 | 0.60 | 0.65 | 0.022 | 0.024 | 0.026 |
| E1 | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.010 |
| L | 0.20 | 0.25 | 0.30 | 0.008 | 0.010 | 0.012 |
| L1 | 0.05 REF | | | 0.0002 REF | | |

Suggested Land Pattern



| SYM | DIMENSIONS | |
|-----|-------------|--------|
| | MILLIMETERS | INCHES |
| C | 0.25 | 0.010 |
| X | 0.65 | 0.024 |
| Y1 | 0.50 | 0.020 |
| Y2 | 0.50 | 0.020 |
| Y3 | 0.25 | 0.010 |
| Z | 0.20 | 0.008 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [TECH PUBLIC](#) manufacturer:

Other Similar products are found below :

[614233C](#) [648584F](#) [IRFD120](#) [IRFF430](#) [JANTX2N5237](#) [2N7000](#) [FCA20N60_F109](#) [FDZ595PZ](#) [AOD464](#) [2SK2267\(Q\)](#) [2SK2545\(Q,T\)](#)
[405094E](#) [423220D](#) [MIC4420CM-TR](#) [VN1206L](#) [614234A](#) [715780A](#) [SSM6J414TU,LF\(T](#) [751625C](#) [BSC884N03MS G](#) [BSF024N03LT3 G](#)
[PSMN4R2-30MLD](#) [TK31J60W5,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [FCAB21350L1](#) [P85W28HP2F-](#)
[7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [NTE2969](#) [NTE6400A](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#)
[SSM6P54TU,LF](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [STU5N65M6](#)
[C3M0021120D](#) [DMN13M9UCA6-7](#) [BSS340NWH6327XTSA1](#) [MCM3400A-TP](#) [DMTH10H4M6SPS-13](#) [IRF40SC240ARMA1](#)
[IPS60R1K0PFD7SAKMA1](#)