## / Descriptions

PDFN3×3-8L N MOS

Double N-CHANNEL MOSFET in a PDFN3×3-8L Plastic Package.

## / Features

N-channel

VDS(V)=30V

ID=20A

RDS(ON)<25mΩ(VGS=10V)

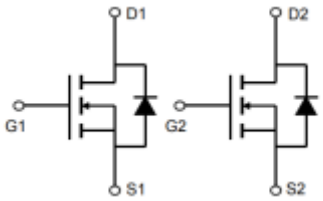
RDS(ON)<40mΩ(VGS=4.5V)

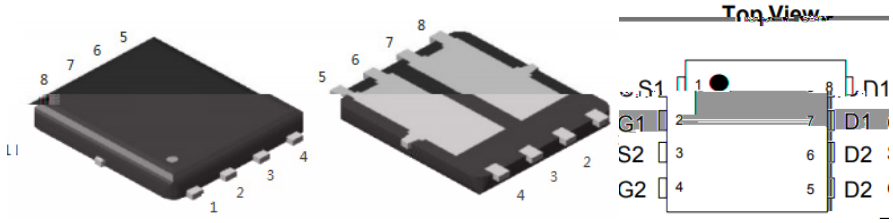
Halogen-free Product.

## / Applications

Intended for use in general purpose switching and phase control applications.

## / Equivalent Circuit




## / Marking

See Marking Instructions.

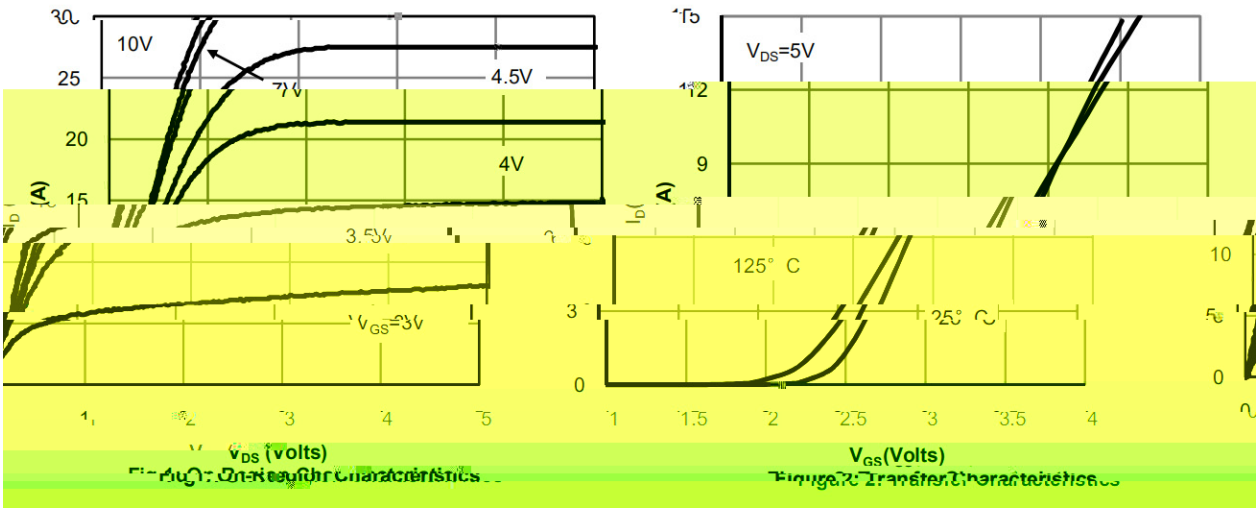
## / Absolute Maximum Ratings(Ta=25 )

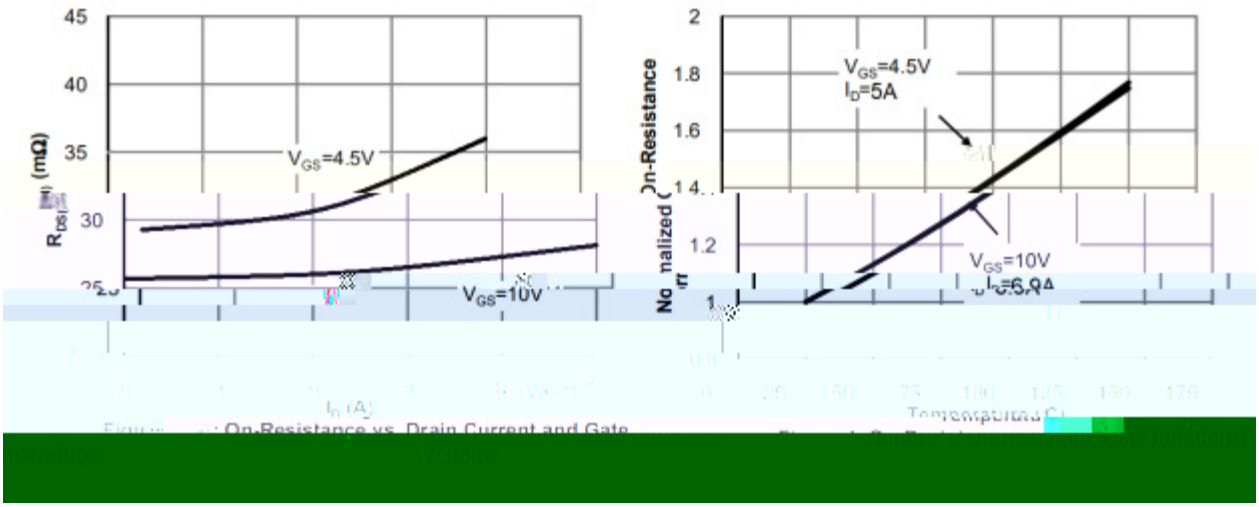
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DSS}$ | 30 | V |
| Gate-Source Voltage | $V_{GSS}$ | ±20 | V |
| Continuous Drain Current | $I_D$ ($T_A$=25 ) | 20 | A |
| Power Dissipation | $P_D$ ($T_A$=25 ) | 11.2 | W |
| Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 to +150 | |
| Maximum Junction-to-Case | $R_{\theta JC}$(Steady-State) | 11.2 | /W |
| Maximum Junction-to-Ambient | $R_{\theta JA}$(Steady-State) | 45 | /W |

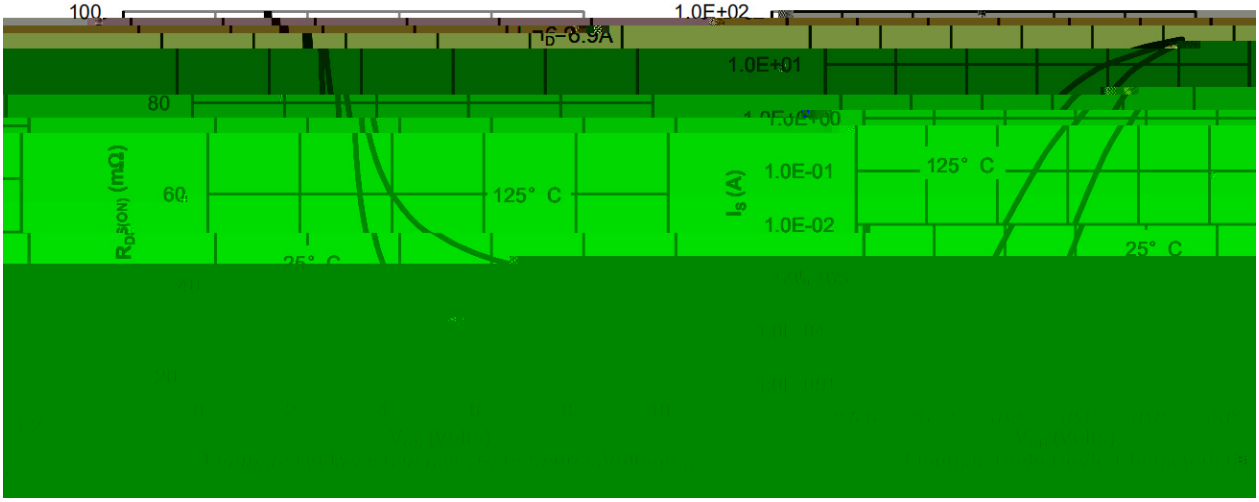
## / Electrical Characteristics(Ta=25 )

| Parameter | Symbol | Test Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$=0V | $I_D$=250μA | 30 | 35 | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=30V | $V_{GS}$=0V | | | 1.0 | μA |
| Gate-Body leakage current | $I_{GSS}$ | $V_{GS}$=±20V | $V_{DS}$=0V | | | 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ | $I_D$=250μA | 1.0 | 1.6 | 2.5 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}$=10V | $I_D$=6.9A | | 20 | 25 | mΩ |
| | | $V_{GS}$=4.5V | $I_D$=5.0A | | 28 | 40 | mΩ |
| Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V | $I_S$=1.0A | | 0.78 | 1.2 | V |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=25V f=1.0MHz | $V_{GS}$=0V | | 690 | | pF |
| Output Capacitance | $C_{oss}$ | | | | 200 | | pF |
| Reverse Transfer Capacitance | $C_{rss}$ | | | | 130 | | pF |
| Gate resistance | $R_g$ | $V_{DS}$=0V f=1.0MHz | $V_{GS}$=0V | | 2.7 | | Ω |
| Total Gate Charge(10V) | $Q_g$ | $V_{GS}$=10V $I_D$=6A | $V_{DS}$=15V | | 5.2 | | nC |
| Total Gate Charge(4.5V) | | | | | 2.5 | | nC |
| Gate-Source Charge | $Q_{gs}$ | | | | 0.8 | | nC |
| Gate-Drain Charge | $Q_{gd}$ | | | | 1.3 | | nC |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DS}$=15 V $R_L$=2.5Ω | $V_{GS}$=10V $R_{GEN}$=3Ω | | 4.5 | | ns |
| Turn-On Rise Time | $t_r$ | | | | 2.5 | | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | | | 14.5 | | ns |
| Turn-Off Fall Time | $t_f$ | | | | 3.5 | | ns |

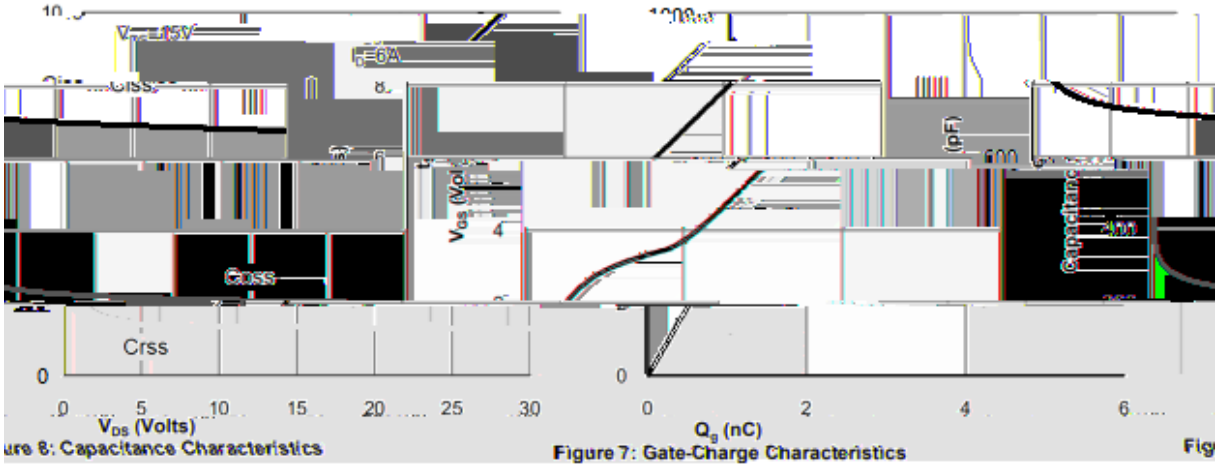
## / Electrical Characteristic Curve



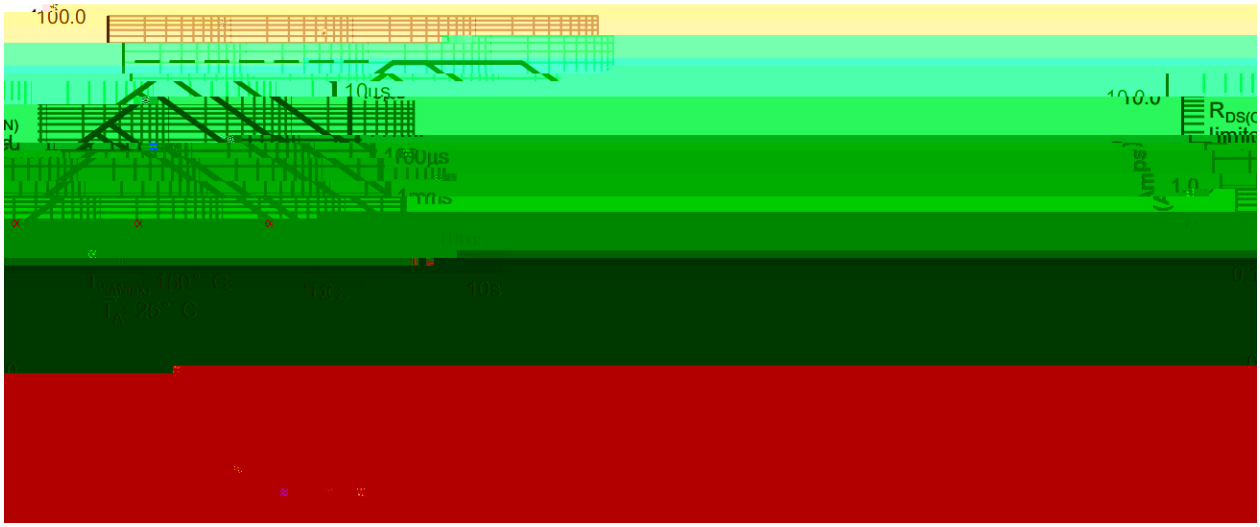
## / Electrical Characteristic Curve




ure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

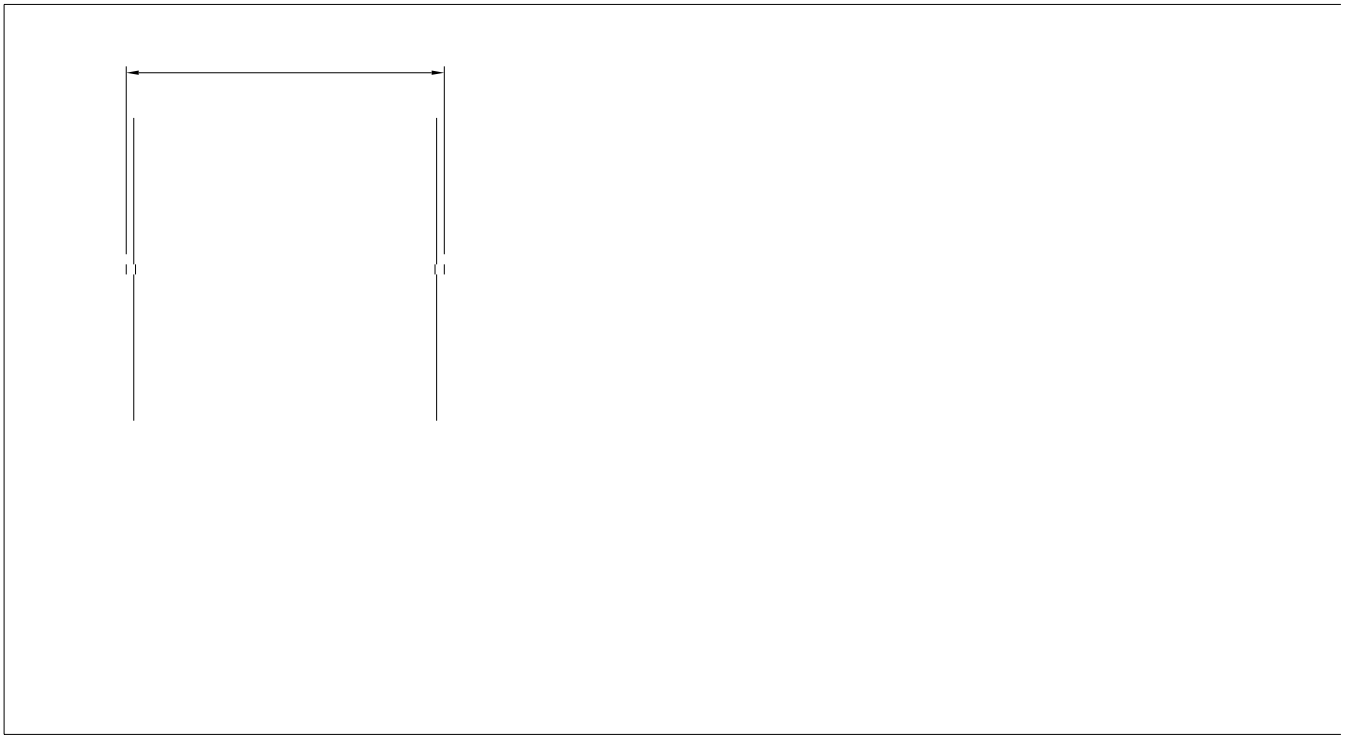
Fig



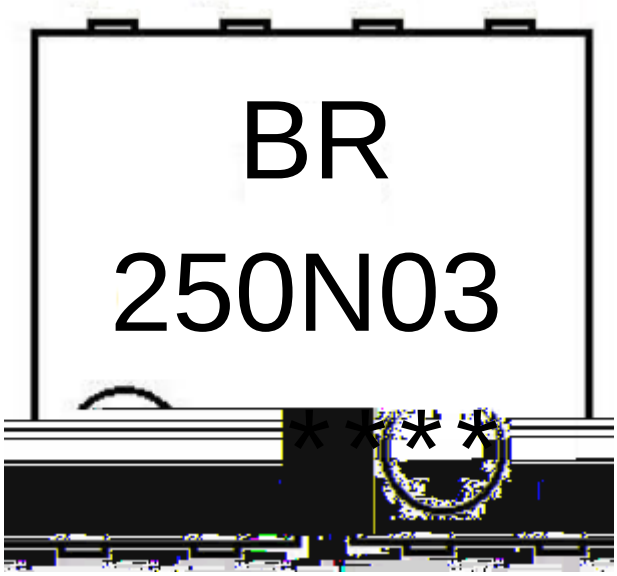
## / Package Dimensions

PDFN3X3-8L

Unit:mm



## / Marking Instructions




BR

250N03

****

Note:

| | |
|---|---|
| BR: | Company Code |
| 250N03: | Product Type Code |
| ****: | Lot No. Code, code change with Lot No |

## ( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

| | | | | |
|---|---|---|---|---|
| 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. |

## / Resistance to Soldering Heat Test Conditions

| | | | |
|---|---|---|---|
| 260±5 | 10±1 sec. | Temp.:260±5 | Time:10±1 sec |

## / Packaging SPEC.

/ REEL

| Package Type 封装形式 | Units 包装数量 | | | | | Dimension 包装尺寸 (unit: $mm^3$) | | |
|---|---|---|---|---|---|---|---|---|
| | Units/Reel 只/卷盘 | Reels/Inner Box 卷盘/盒 | Units/Inner Box 只/盒 | Inner Boxes/Outer Box 盒/箱 | Units/Outer Box 只/箱 | Reel | Inner Box 盒 | Outer Box 箱 |
| PDFN 3 × 3-8L | 5,000 | 2 | 10,000 | 6 | 60,000 | 13 ×12 | 360×360×50 | 380×335×366 |

## / Notices