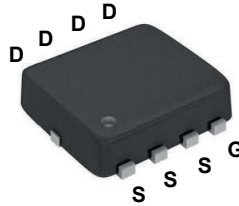
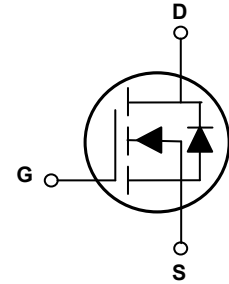


Main Product Characteristics

| | |
|---------------|---------------------|
| $V_{(BR)DSS}$ | 100V |
| $R_{DS(ON)}$ | 26m Ω (max.) |
| I_D | 25A |



PPAK3x3



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The GSFN26010 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

| Parameter | Symbol | Max. | Unit |
|--|----------------------------------|-------------|------|
| Drain-Source Voltage | V _{DS} | 100 | V |
| Gate-to-Source Voltage | V _{GS} | ±20 | V |
| Continuous Drain Current, @ Steady-State (T _c =25°C) ¹ | I _D | 25 | A |
| Continuous Drain Current, @ Steady-State (T _c =100°C) | | 19 | A |
| Pulsed Drain Current ² | I _{DM} | 100 | A |
| Power Dissipation (T _c =25°C) | P _D | 35 | W |
| Linear Derating Factor (T _c =25°C) | | 0.28 | W/°C |
| Single Pulse Avalanche Energy ³ | E _{AS} | 81 | mJ |
| Junction-to-Case | R _{θJC} | 3.57 | °C/W |
| Junction-to-Ambient (PCB Mounted, Steady-State) ⁴ | R _{θJA} | 62.0 | °C/W |
| Operating Junction and Storage Temperature Range | T _J /T _{STG} | -55 to +150 | °C |

Electrical Characteristics (T_C=25°C unless otherwise specified)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|----------------------|--|------|------|------|------|
| On / Off Characteristics | | | | | | |
| Drain-to-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =250μA | 100 | - | - | V |
| Drain-to-Source Leakage Current | I _{DSS} | V _{DS} =100V, V _{GS} =0V | - | - | 1 | μA |
| | | T _J =125°C | - | - | 20 | |
| Gate-to-Source Forward Leakage | I _{GSS} | V _{GS} =20V | - | - | 100 | nA |
| | | V _{GS} =-20V | - | - | -100 | |
| Static Drain-to-Source On-Resistance | R _{DS(on)} | V _{GS} =10V, I _D =10A | - | 21 | 26 | mΩ |
| | | V _{GS} =6V, I _D =7A | - | 28 | 36 | |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 2.1 | 3.0 | 3.8 | V |
| Dynamic and Switching Characteristics | | | | | | |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{DS} =50V F=1MHz | - | 1355 | - | pF |
| Output Capacitance | C _{oss} | | - | 171 | - | |
| Reverse Transfer Capacitance | C _{rss} | | - | 4 | - | |
| Total Gate Charge | Q _g | I _D =33A, V _{DS} =50V, V _{GS} =10V | - | 23 | - | nC |
| Gate-to-Source Charge | Q _{gs} | | - | 10 | - | |
| Gate-to-Drain ("Miller") Charge | Q _{gd} | | - | 4.9 | - | |
| Turn-on Delay Time | t _{d(on)} | V _{GS} =10V, V _{DS} =50V, I _D =33A, R _{GEN} =2Ω | - | 8.4 | - | nS |
| Rise Time | t _r | | - | 28.5 | - | |
| Turn-Off Delay Time | t _{d(off)} | | - | 22.4 | - | |
| Fall Time | t _f | | - | 7.8 | - | |
| Gate Resistance | R _g | F=1MHz | - | 2.2 | - | Ω |
| Source-Drain Ratings and Characteristics | | | | | | |
| Continuous Source Current (Body Diode) | I _S | MOSFET symbol showing the integral reverse p-n junction diode. | - | - | 45 | A |
| Pulsed Source Current (Body Diode) | I _{SM} | | - | - | 180 | A |
| Diode Forward Voltage | V _{SD} | I _S =45A, V _{GS} =0V | - | 1.0 | 1.2 | V |
| Reverse Recovery Time | T _{rr} | T _J =25°C, I _F =45A, di/dt=100A/μs | - | 56 | - | nS |
| Reverse Recovery Charge | Q _{rr} | | - | 0.09 | - | uc |

Notes:

1. Pulse test: pulse width ≤300us, duty cycle ≤2%.
2. Repetitive rating; pulse width limited by max. junction temperature.
3. L=0.5mH, V_{DD}=80V, I_{AS}=18A, R_G=25Ω, T_J=25°C.
4. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Electrical and Thermal Characteristic Curves

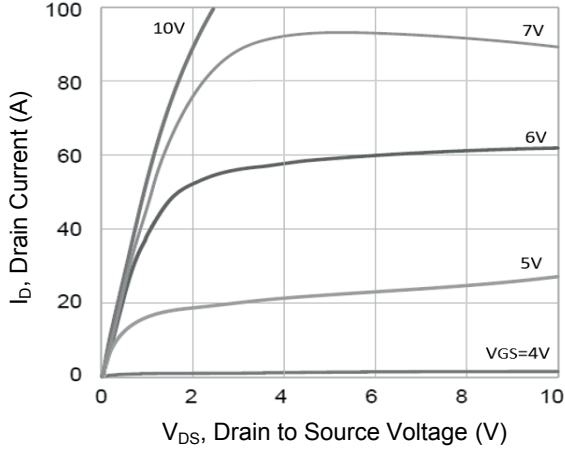


Figure 1. Output Characteristics

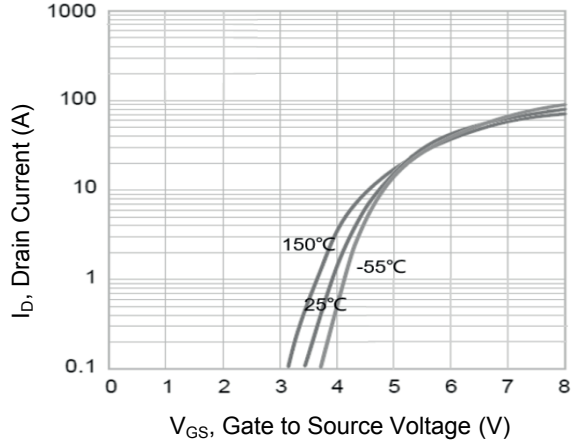


Figure 2. Transfer Characteristics

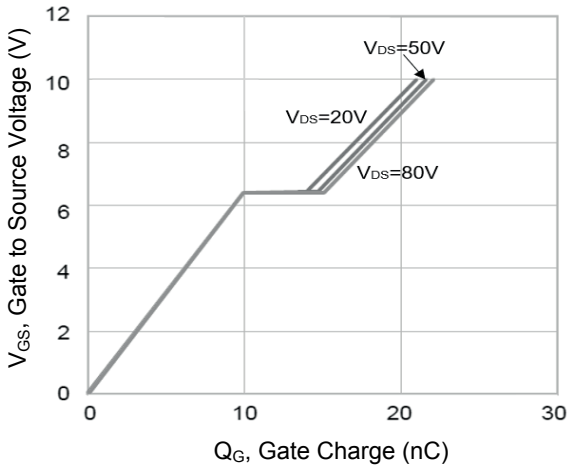


Figure 3. Gate Charge

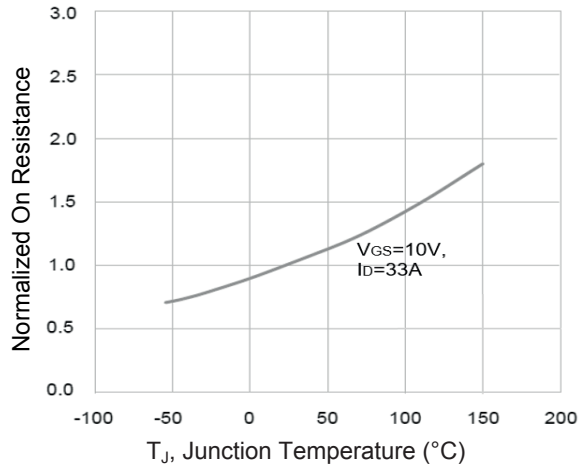


Figure 4. Normalized $R_{DS(ON)}$ Vs. T_J

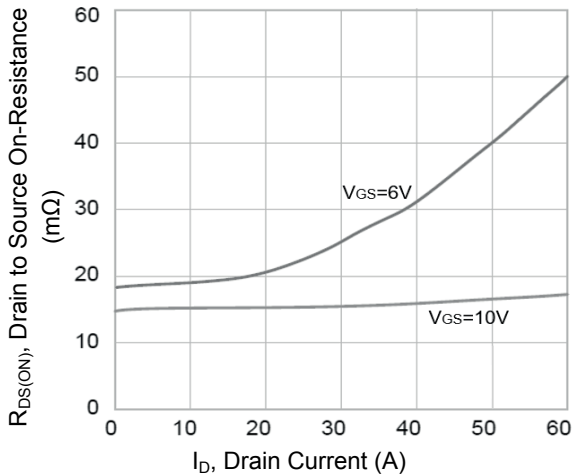


Figure 5. $R_{DS(ON)}$ Vs. Drain Current

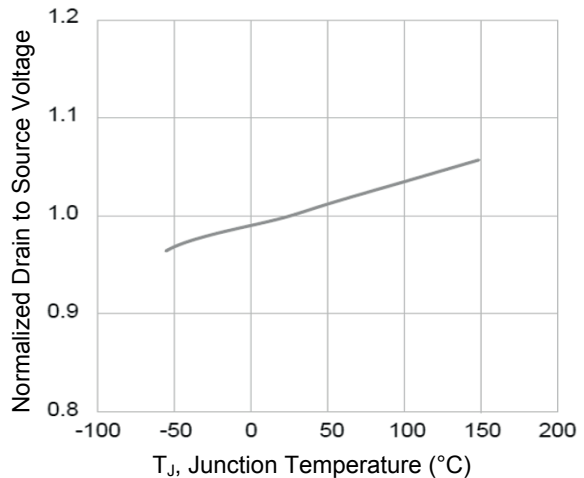


Figure 6. Normalized BV_{DSS} Vs. T_J

Typical Electrical and Thermal Characteristic Curves

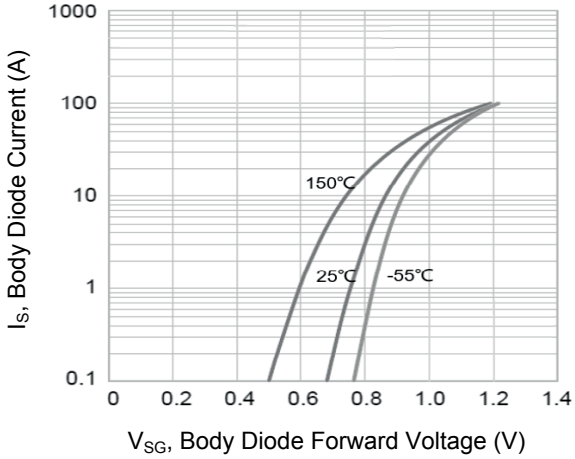


Figure 7. Body Diode Characteristics

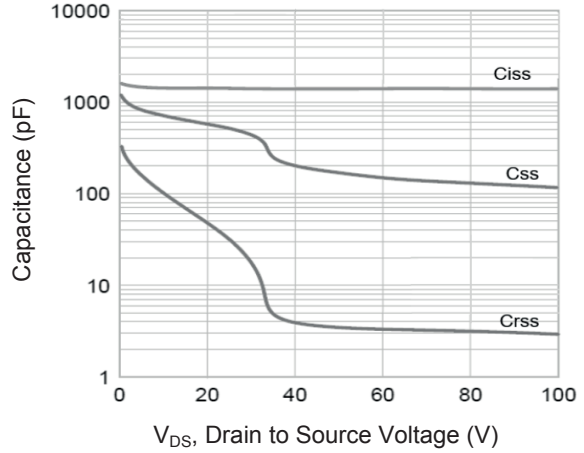


Figure 8. Capacitance Characteristics

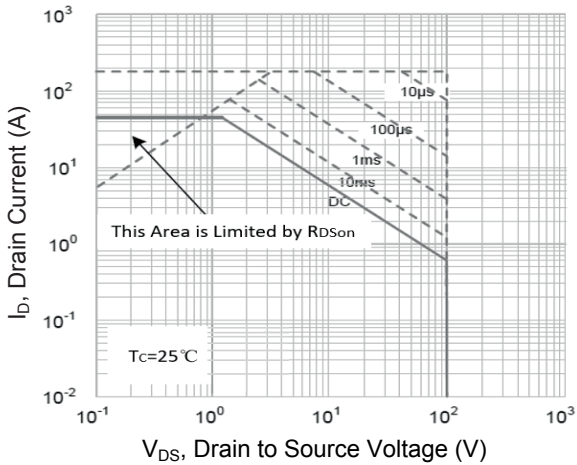
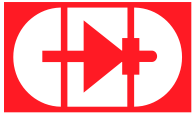
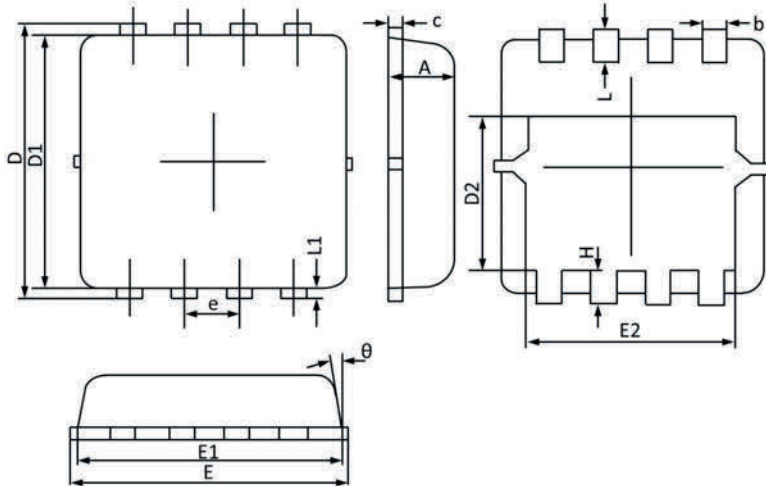


Figure 9. Safe Operation Area



Package Outline Dimensions (PPAK3x3)



| Symbol | Dimensions in Millimeters | | Dimensions in Inches | |
|--------|---------------------------|------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.70 | 0.90 | 0.028 | 0.035 |
| b | 0.25 | 0.35 | 0.010 | 0.014 |
| c | 0.10 | 0.25 | 0.004 | 0.010 |
| D | 3.05 | 3.50 | 0.120 | 0.138 |
| D1 | 2.90 | 3.20 | 0.114 | 0.126 |
| D2 | 1.35 | 1.95 | 0.053 | 0.077 |
| E | 3.00 | 3.40 | 0.118 | 0.134 |
| E1 | 2.90 | 3.30 | 0.114 | 0.130 |
| E2 | 2.35 | 2.60 | 0.093 | 0.102 |
| e | 0.65 BSC | | 0.026 BSC | |
| H | 0.30 | 0.75 | 0.012 | 0.030 |
| L | 0.30 | 0.60 | 0.012 | 0.024 |
| L1 | 0.06 | 0.20 | 0.002 | 0.008 |
| θ | 6° | 14° | 6° | 14° |

Order Information

| Device | Package | Marking | Carrier | Quantity |
|-----------|---------|---------|-------------|-----------------|
| GSFN26010 | PPAK3x3 | N26010 | Tape & Reel | 5,000pcs / Reel |