# 100V N-Ch Power MOSFET

| | | | |
|---|---|---|---|
| $V_{DS}$ | | 100 | V |
| $R_{DS(on),typ}$ | TO-263 | 6.1 | mΩ |
| $R_{DS(on),typ}$ | TO-220 | 6.4 | mΩ |
| $I_D$ | | 100 | A |

## Feature

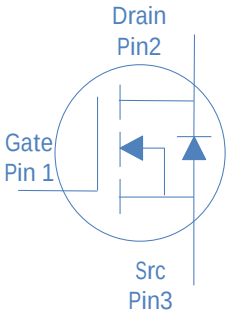
- Optimized for high speed smooth switching
- Enhanced Body diode dv/dt capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free

## Application

- Synchronous Rectification in SMPS
- Hard Switching and High Speed Circuit
- Power Tools
- UPS
- Motor Control

TO-263

TO-220




| Part Number | Package | Marking |
|---|---|---|
| HGB082N10M | TO-263 | GB082N10M |
| HGP082N10M | TO-220 | GP082N10M |

**Absolute Maximum Ratings at $T_j$=25 (unless otherwise specified)**

| Parameter | Symbol | Conditions | Value | Unit |
|---|---|---|---|---|
| Continuous Drain Current | $I_D$ | $T_C$=25 | 100 | A |
| | | $T_C$=100 | 71 | |
| Drain to Source Voltage | $V_{DS}$ | - | 100 | V |
| Gate to Source Voltage | $V_{GS}$ | - | ±20 | V |
| Pulsed Drain Current | $I_{DM}$ | - | 390 | A |
| Avalanche Energy, Single Pulse | $E_{AS}$ | L=0.5mH, $T_C$=25 | 400 | mJ |
| Power Dissipation | $P_D$ | $T_C$=25 | 176 | W |
| Operating and Storage Temperature | $T_J$, $T_{stg}$ | - | -55 to175 | |

**Absolute Maximum Ratings**

| Parameter | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance Junction-Case | $R_{\theta JC}$ | 0.85 | /W |
| Thermal Resistance Junction-Ambient | $R_{\theta JA}$ | 65 | /W |

Fig 1. Typical Output Characteristics

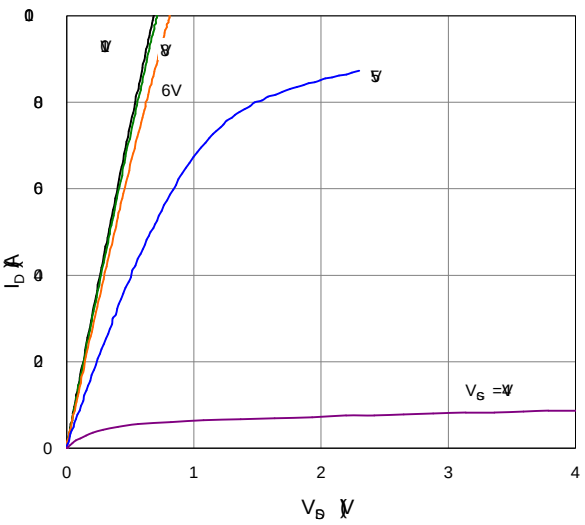



Figure 2. On-Resistance vs. Gate-Source Voltage

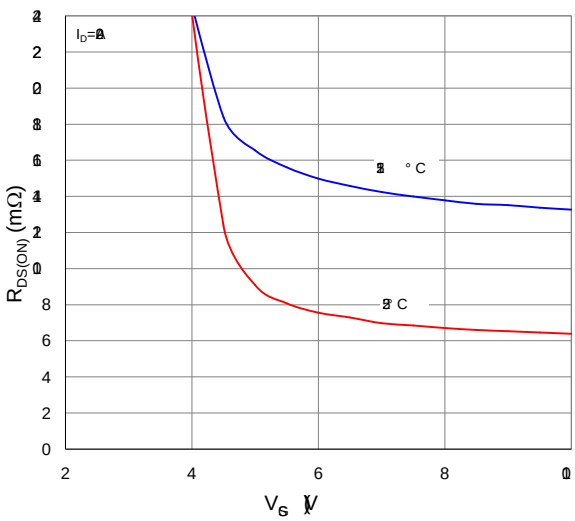



Figure 3. On-Resistance vs. Drain Current and Gate Voltage

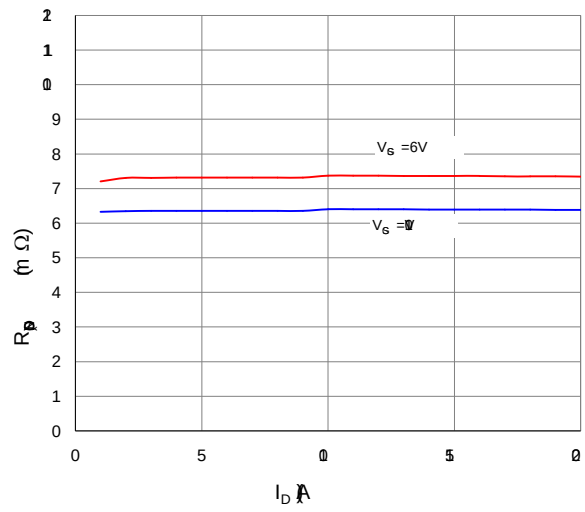



Figure 4. Normalized On-Resistance vs. Junction Temperature

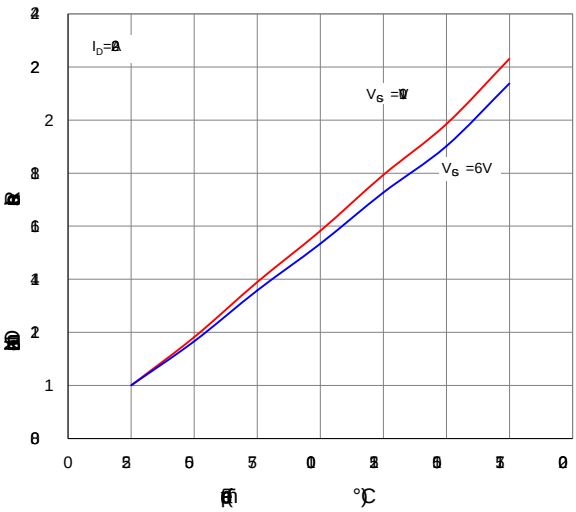



Figure 5. Typical Transfer Characteristics

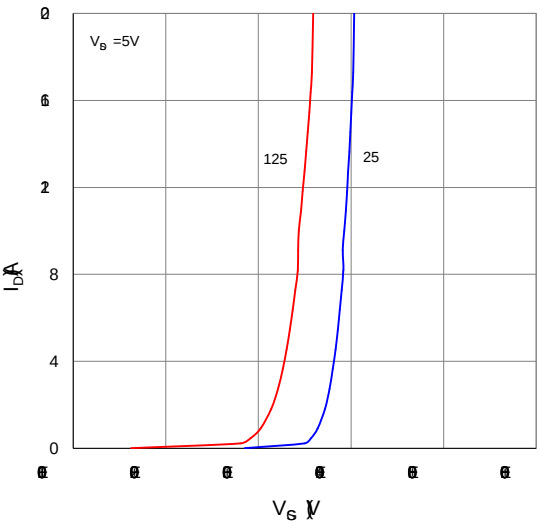
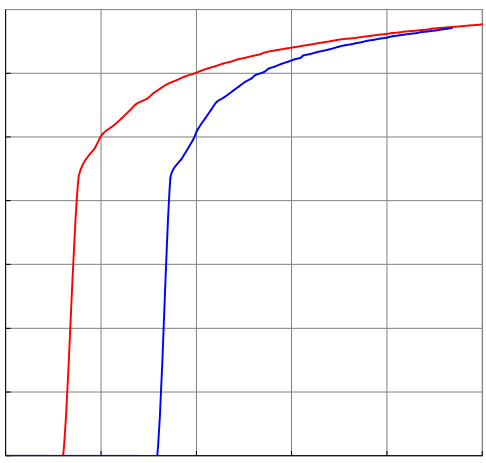
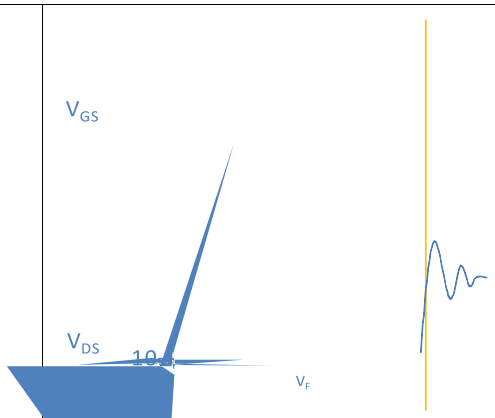
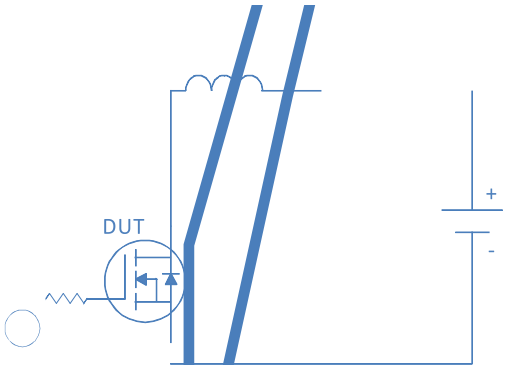


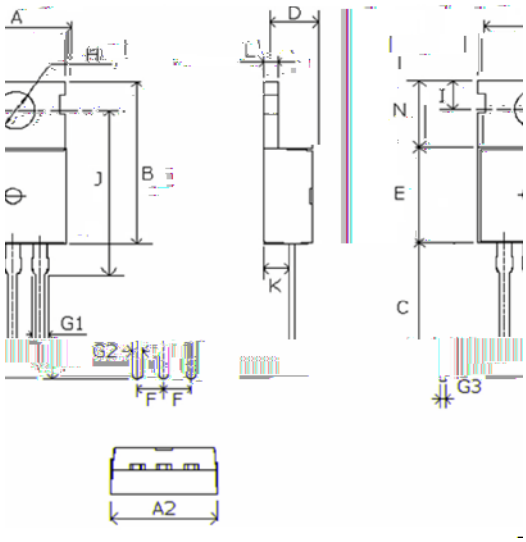

Figure 6. Typical Source-Drain Diode Forward Voltage



| Inductive switching Test |
| --- |
|  |
| Gate Charg |
| |
| Uclamped Inductive Switching (UIS) Test |
|  |
| Diode Recovery Test |
| |

Package Outline

## TO-220, 3 leads




Dimentions in mm unless otherwise specified

| Symbol | Min | Nom | Max |
|---|---|---|---|
| A | 9.66 | 9.97 | 10.28 |
| A2 | 9.80 | 10.00 | 10.20 |
| B | 15.60 | 15.70 | 15.80 |
| C | 12.70 | 13.48 | 14.27 |
| D | 4.30 | 4.50 | 4.70 |
| E | 9.00 | 9.20 | 9.40 |
| F | | 2.54 | |
| G1 | 1.32 | 1.52 | 1.72 |
| G2 | 0.70 | 0.82 | 0.95 |
| G3 | 0.45 | 0.52 | 0.60 |
| H | 3.50 | 3.60 | 3.70 |
| I | 2.70 | 2.80 | 2.90 |
| J | 15.70 | 15.97 | 16.25 |
| K | 2.20 | 2.40 | 2.60 |
| L | 1.15 | 1.27 | 1.40 |
| N | 6.40 | 6.60 | 6.80 |

## TO-263, 2 leads

Dimentions in mm unless otherwise specified

| Symbol | Min | Nom | Max |
|---|---|---|---|
| A | 9.66 | 9.97 | 10.28 |
| B | 1.02 | 1.17 | 1.32 |
| C | 8.59 | 9.00 | 9.40 |
| D1 | 1.14 | 1.27 | 1.40 |
| D2 | 0.70 | 0.83 | 0.95 |
| D3 | | 5.08 | |
| E | 15.09 | 15.24 | 15.39 |
| F | 1.15 | 1.28 | 1.40 |
| G | 4.30 | 4.50 | 4.70 |
| H | 2.29 | 2.54 | 2.79 |
| I | | 0.25 | |
| K | 1.30 | 1.45 | 1.60 |
| a1 | 0.45 | 0.55 | 0.65 |
| a2(degree) | 0° | | 8° |