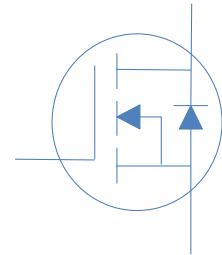




HGD290N10SL , HGI290N10SL

100V N-Ch Power MOSFET

| | | | |
|-------------------------|---------------|-----|------------|
| V_{DS} | | 100 | V |
| $R_{DS(on), typ}$ | $V_{GS}=10V$ | 22 | m Ω |
| | $V_{GS}=4.5V$ | 25 | m Ω |
| I_D (Silicon Limited) | | 31 | A |



| Part Number | Package | Marking |
|-------------|---------|------------|
| HGD290N10SL | TO-252 | GD290N10SL |
| HGI290N10SL | TO-251 | GI290N10SL |

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

| Parameter | Symbol | Conditions | Value | Unit |
|--|----------|-------------------|------------|------|
| Continuous Drain Current (Silicon Limited) | I_D | $T_C=25$ | 31 | A |
| | | $T_C=100$ | 22 | |
| Drain to Source Voltage | V_{DS} | - | 100 | V |
| Gate to Source Voltage | V_{GS} | - | ± 20 | V |
| Pulsed Drain Current | I_{DM} | - | 80 | A |
| Avalanche Energy, Single Pulse | E_{AS} | $L=0.4mH, T_C=25$ | 20 | mJ |
| | | | | W |
| | | | -55 to 175 | |

| | | | |
|--|-----|-----|---|
| | P-1 | | |
| | | | |
| | | 2.4 | W |

t

| | | | | | | |
|--------------------|-------------|-----------------------------------|---|----|---|----|
| Turn on Delay Time | $t_{d(on)}$ | | - | 7 | - | |
| Rise time | t_r | $V_{DD}=50V, I_D=8A, V_{GS}=10V,$ | | 4 | - | |
| Turn off Da | Dme | $R_G=10\Omega,$ | - | 20 | - | ns |
| Fall Time | t_f | | - | 4 | | |

Reverse Diode Characteristics

| | | | | | | |
|-----------------------|----------|----------------------|---|-----|-----|---|
| Diode Forward Voltage | V_{SD} | $V_{GS}=0V, I_F=20A$ | - | 0.9 | 1.2 | V |
| | | | - | | | |

Fig 1. Typical Output Characteristics

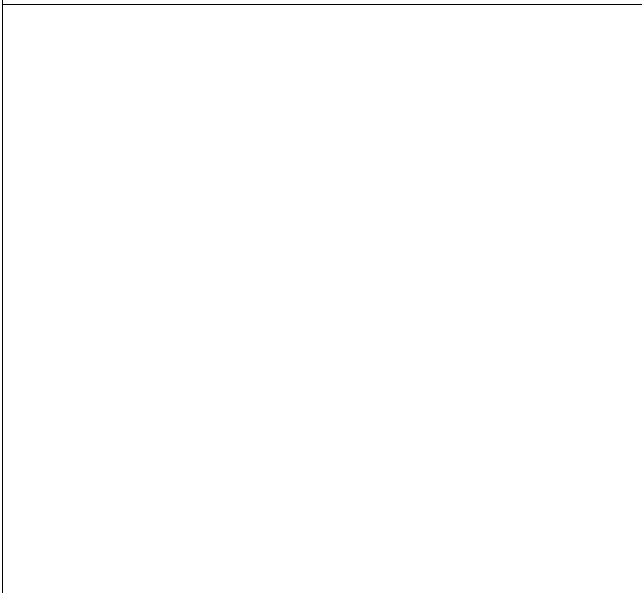


Figure 2. On-Resistance vs. Gate-Source Voltage

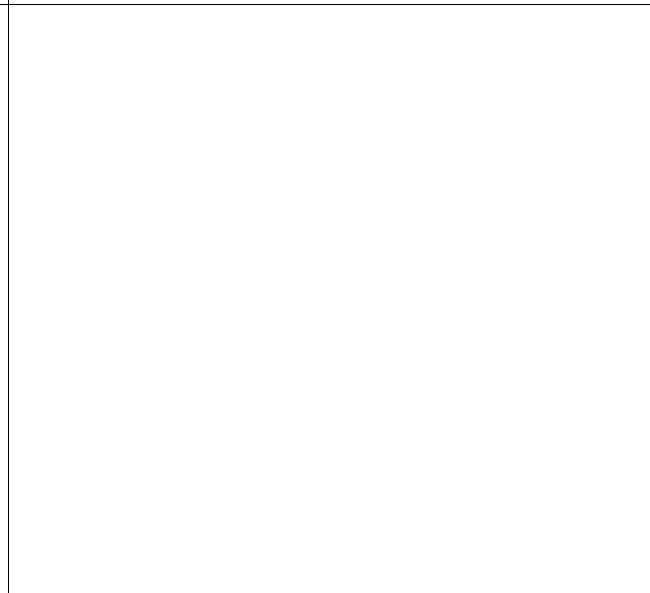


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

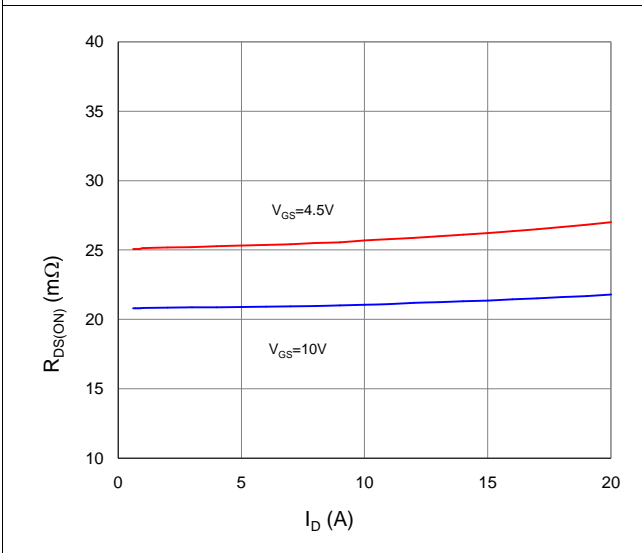


Figure 4. Normalized On-Resistance vs. Junction Temperature

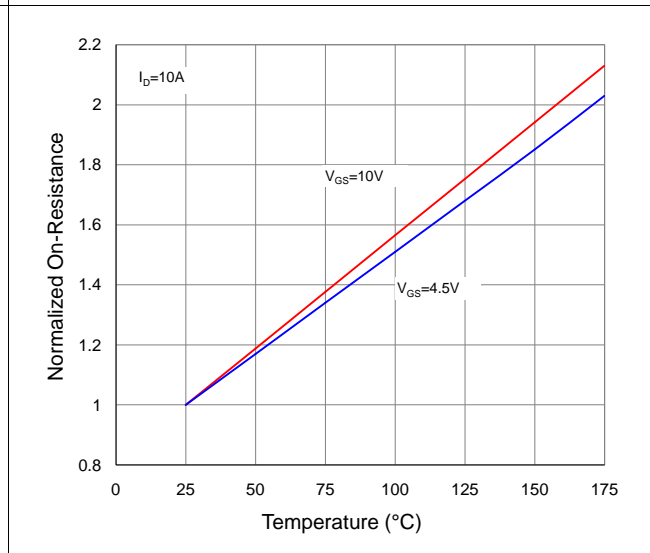


Figure 5. Typical Transfer Characteristics

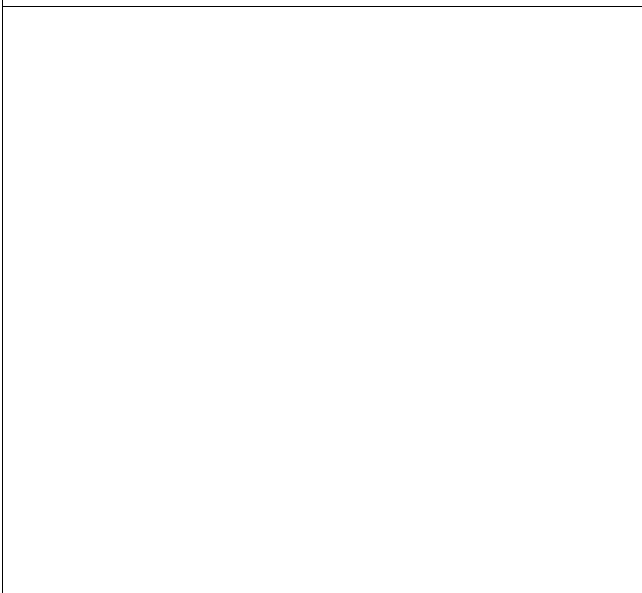
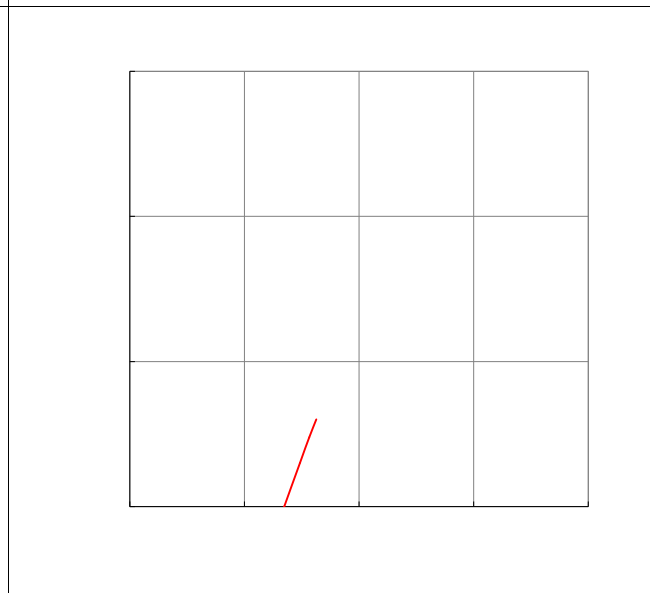


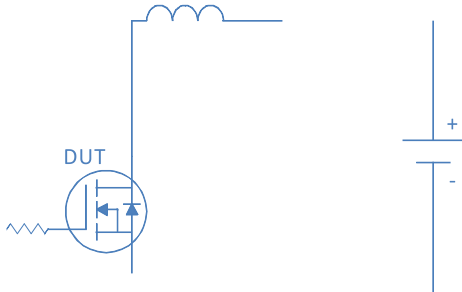
Figure 6. Typical Source-Drain Diode Forward Voltage



HGD290N10SL , HGI290N10SL

| Inductive switching Test | |
|--------------------------|--|
| | |

| Gate Charge Test | |
|------------------|--|
| | |

| Uclamped Inductive Switching (UIS) Test | |
|--|--|
|  <p>The diagram shows a MOSFET labeled 'DUT' connected in series with an inductor and a diode. The MOSFET's drain is connected to one terminal of the inductor. The other terminal of the inductor is connected to the anode of the diode. The cathode of the diode is connected to the MOSFET's source. The MOSFET's gate is connected to a separate terminal. The diode's anode is also connected to a positive terminal of a DC source, and its cathode is connected to the MOSFET's source, which is connected to the negative terminal of the DC source.</p> | |

| Diode Recovery Test | |
|---------------------|--|
| | |

