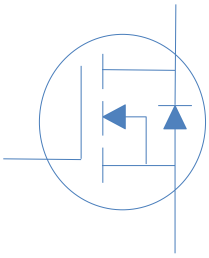
# 150V N-Ch Power MOSFET

| | | | |
|---|---|---|---|
| $V_{DS}$ | | 150 | V |
| $R_{DS(on),typ}$ | TO-263 | 9.4 | m |
| $R_{DS(on),typ}$ | TO-220 | 9.7 | m |
| $I_D$ | | 91 | A |



| Part Number | Package | Marking |
|---|---|---|
| HGB115N15S | TO-263 | GB115N15S |
| HGP115N15S | TO-220 | GP115N15S |

## 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℃ | 91 | A |
| | | $T_C$=100℃ | 64 | |
| Drain to Source Voltage | $V_{DS}$ | - | 150 | V |
| Gate to Source Voltage | $V_{GS}$ | - | ±20 | V |
| Pulsed Drain Current | $I_{DM}$ | - | 300 | A |
| Avalanche Energy, Single Pulse | $E_{AS}$ | L=0.4mH, $T_C$=25℃ | 125 | mJ |
| Power Dissipation | $P_D$ | $T_C$=25℃ | 214 | W |
| Operating and Storage Temperature | $T_J$, $T_{stg}$ | - | -55 to175 | ℃ |

## Absolute Maximum Ratings

| Parameter | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance Junction-Ambient | $R_{JA}$ | 60 | ℃/W |
| Thermal Resistance Junction-Case | $R_{JC}$ | 0.7 | ℃/W |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | 42 | - | |
| | | | - | 14 | - | nC |
| | | | - | 7 | - | |
| Turn on Delay Time | $t_{d(on)}$ | | - | 17 | - | |
| Rise time | $t_r$ | $V_{DD}$=75V, $I_D$=20A, $V_{GS}$=10V, $R_G$=10 , | - | 8 | - | ns |
| Turn off Delay Time | $t_{d(off)}$ | | - | 26 | - | |
| Fall Time | $t_f$ | | - | 10 | | |

**Reverse Diode Characteristics**

| | | | | | | |
|---|---|---|---|---|---|---|
| Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V, $I_F$=20A | - | 0.9 | 1.2 | V |
| Reverse Recovery Time | $t_{rr}$ | $V_R$=75V, $I_F$=20A, dI | - | | | ns |
| Reverse Recovery Charge | | | | | | |

=075

Fig 1. Typical Output Characteristics

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

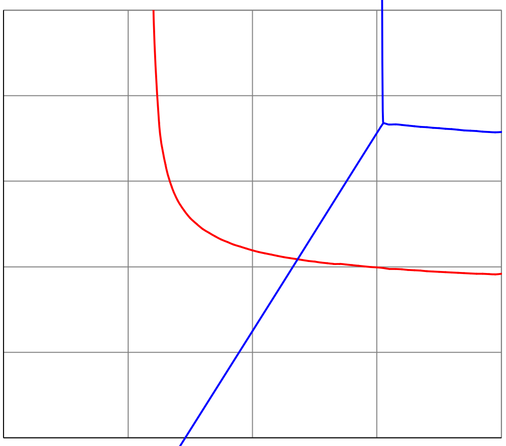


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

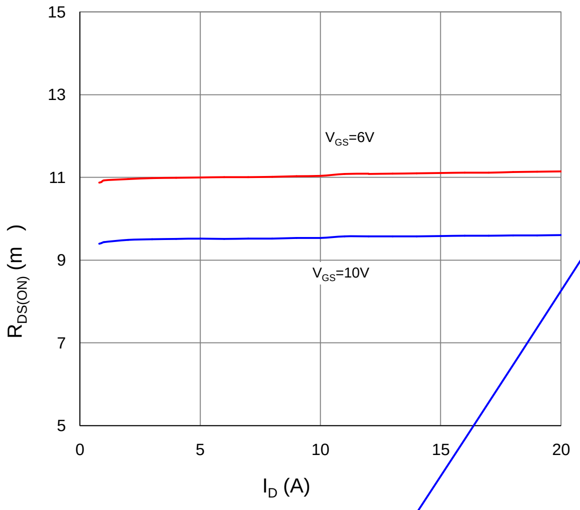


Figure 4. Normalized On-Resistance vs. Junction Temperature

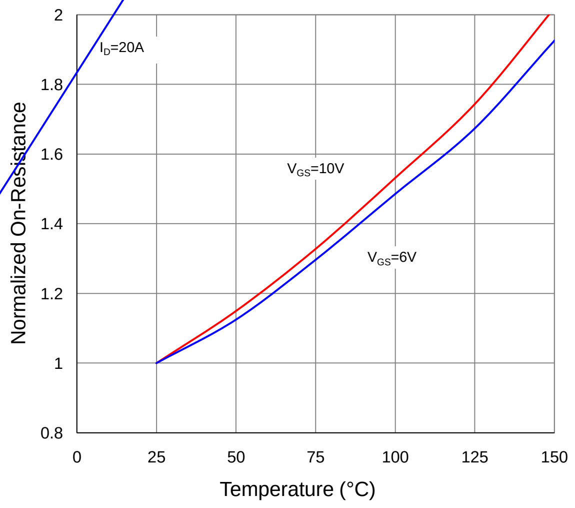
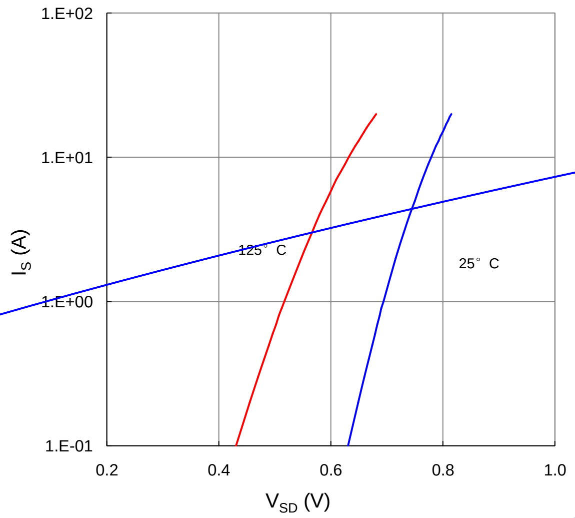
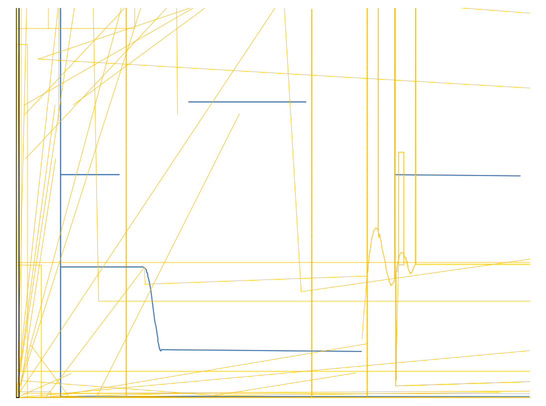


Figure 5. Typical Transfer Characteristics

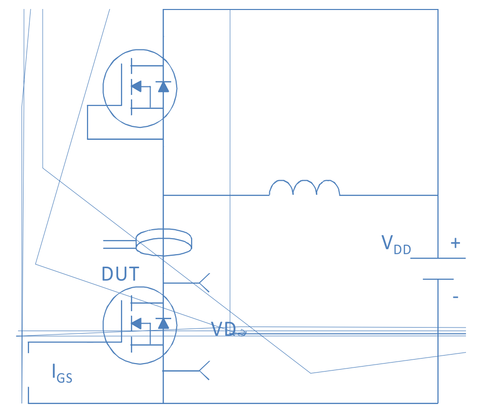
Figure 6. Typical Source-Drain Diode Forward Voltage

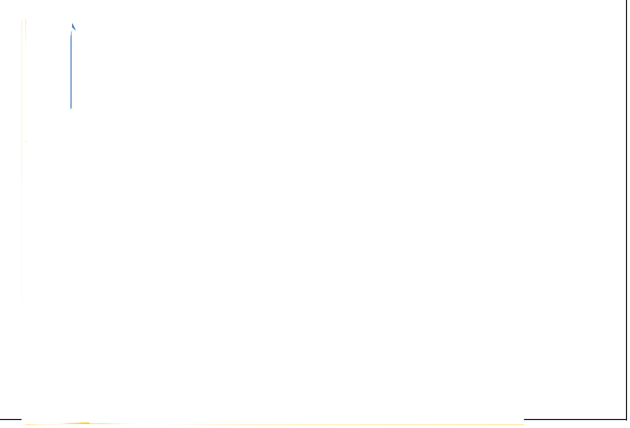


## Inductive switching Test

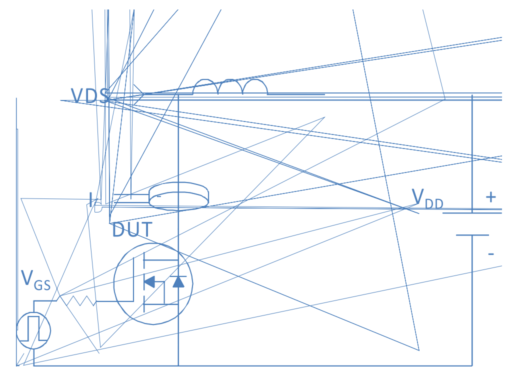


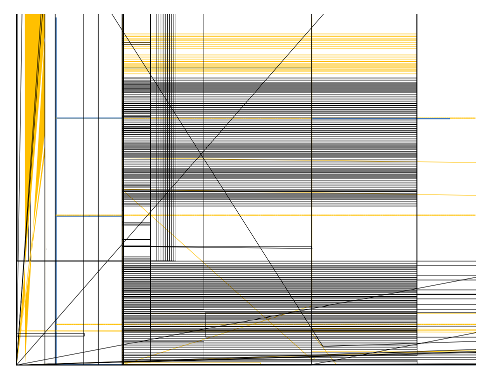
## Gate Charge Test



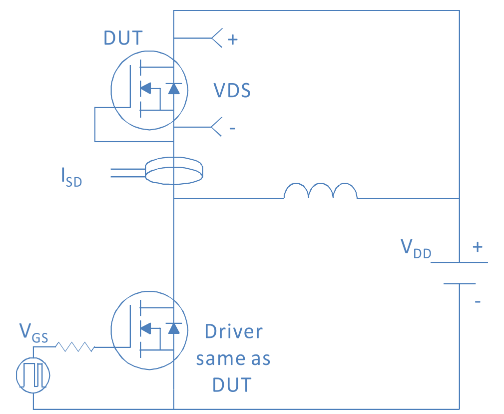


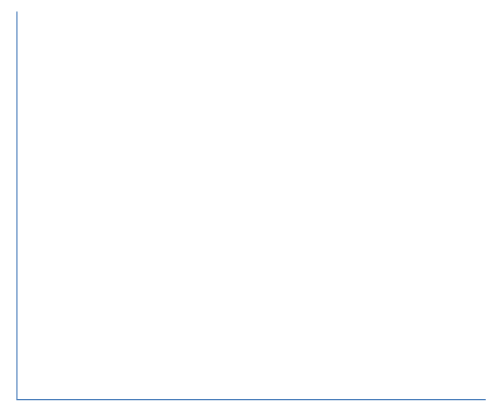
## Uclamped Inductive Switching (UIS) Test





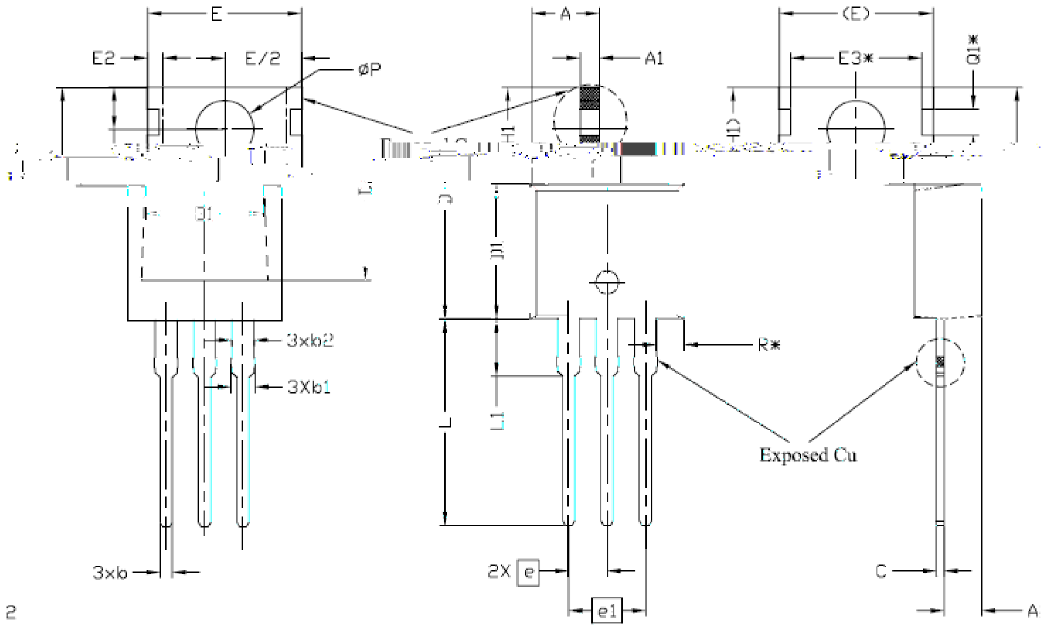
## Diode Recovery Test





Package Outline

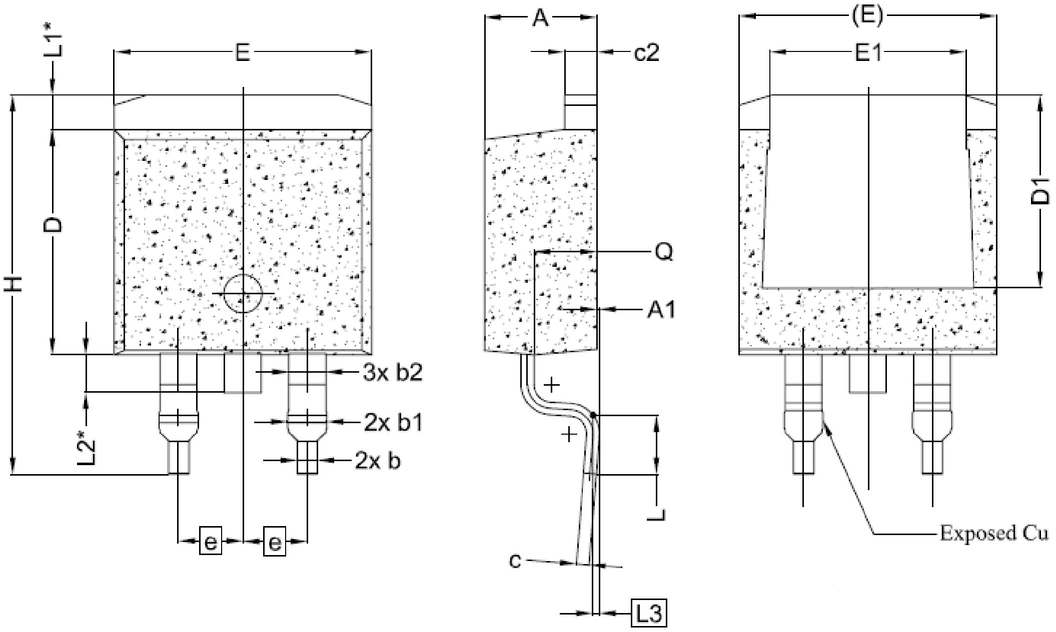
### TO-220, 3 leads



| SYMBOL | DIMENSIONS | | | NOTES |
|---|---|---|---|---|
| | MIN. | NOM. | MAX. | |
| A | 4.24 | 4.44 | 4.64 | |
| A1 | 1.18 | 1.27 | 1.40 | |
| A2 | 2.26 | 2.52 | 2.72 | |
| b | 0.70 | 0.82 | 0.90 | |
| b1 | 1.20 | 1.33 | 1.46 | |
| b2 | 1.20 | 1.33 | 1.46 | |
| c | 0.36 | 0.45 | 0.52 | |
| D | 15.20 | 15.57 | 15.93 | 4 |
| D1 | 8.38 | 8.69 | 9.02 | |
| D2 | 12.98 | 12.73 | 12.93 | 5 |
| E | 9.96 | 10.16 | 10.36 | 4,5 |
| E1 | 6.86 | 7.77 | 8.89 | 5 |
| E2 | | | 0.76 | 7 |
| E3 | | 8.70 REF | | |
| e | | 2.54 BSC | | |
| e1 | | 5.08 BSC | | |
| H1 | 6.10 | 6.40 | 6.80 | 6,7 |
| L | 12.75 | 13.13 | 13.52 | |
| L1 | 2.80 | 3.30 | 3.81 | |
| øP | 3.70 | 3.84 | 3.96 | |
| Q | 2.40 | 2.74 | 3.05 | |
| Q1 | | 1.75 REF | | |
| R | | 1.52 REF | | |

Package Outline

### TO-263, 3 leads



| [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|
| MIN. | NOM. | MAX. | SYMBOL |
| [illegible] | 4.44 | [illegible] | A |
| [illegible] | [illegible] | [illegible] | A1 |
| [illegible] | [illegible] | [illegible] | b |
| .20 | [illegible] | 1.75 | b1 |
| .20 | 1.45 | 1.70 | b2 |
| .40 | [illegible] | 0.63 | c |
| .15 | 1.27 | 1.40 | c2 |
| 8.82 | 8.90 | 9.02 | D |
| [illegible] | [illegible] | — | D1 |
| .96 | 10.16 | 10.36 | E |
| .89 | [illegible] | 7.26 | E1 |
| 2.54 BSC. | | | e |
| 4.61 | 15.00 | 15.88 | H |
| .78 | 2.32 | 2.79 | L |
| 1.36 REF. | | | L1 |
| 1.50 REF. | | | L2 |
| 0.25 BSC. | | | L3 |
| .30 | 2.48 | 2.70 | Q |