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The GreenMOS[®] C... e balance technology to achieve outstanding
low on-resistance... eered to minimize conduction loss, provide
superior switching... e capability.

The GreenMOS[®] C... for extreme switching performance to minimize
switching loss. It is... ensity applications to meet the highest efficiency
standards.

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Dynamic Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test condition |
|------------------------------|--------------|------|-------|------|------|--|
| Input capacitance | C_{iss} | | 4321 | | pF | $V_{GS}=0\text{ V}$, $V_{DS}=50\text{ V}$, kHz |
| Output capacitance | C_{oss} | | 283.3 | | pF | |
| Reverse transfer capacitance | C_{rss} | | 5.2 | | pF | |
| Turn-on delay time | $t_{d(on)}$ | | 89.7 | | ns | $V_{GS}=10\text{ V}$, $V_{DS}=400\text{ V}$, $R_G=25$ $I_D=30\text{ A}$ |
| Rise time | t_r | | 104.4 | | ns | |
| Turn-off delay time | $t_{d(off)}$ | | 143.6 | | ns | |
| Fall time | t_f | | 73.2 | | ns | |

Gate Charge Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test condition |
|----------------------|---------------|------|------|------|------|--|
| Total gate charge | Q_g | | 60.5 | | nC | $V_{GS}=10\text{ V}$, $V_{DS}=400\text{ V}$, $I_D=30\text{ A}$ |
| Gate-source charge | Q_{gs} | | 20.1 | | nC | |
| Gate-drain charge | Q_{gd} | | 16.3 | | nC | |
| Gate plateau voltage | $V_{plateau}$ | | 5.6 | | V | |

Body Diode Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test condition |
|-------------------------------|-----------|------|------|------|------|--|
| Diode forward voltage | V_{SD} | | | 1.4 | V | $I_S=53\text{ A}$, $V_{GS}=0\text{ V}$ |
| Reverse recovery time | t_{rr} | | 532 | | ns | $I_S=30\text{ A}$, |
| Reverse recovery charge | Q_{rr} | | 10.5 | | C | |
| Peak reverse recovery current | I_{rrm} | | 36.1 | | A | |

Note

- 1) Calculated continuous current based on maximum allowable junction temperature.

Electrical Characteristics Diagrams

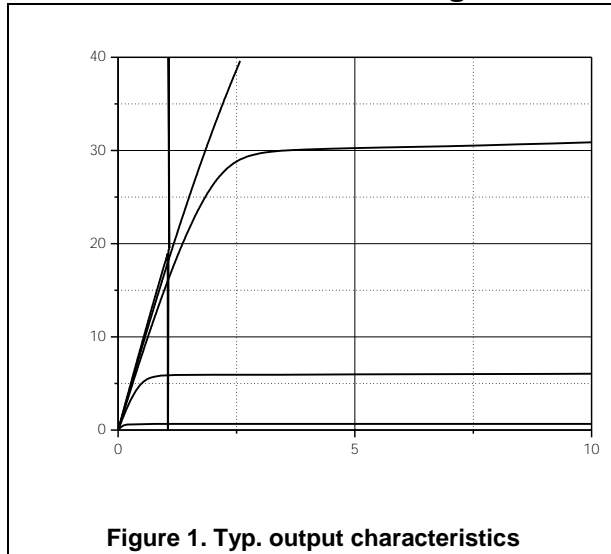


Figure 1. Typ. output characteristics

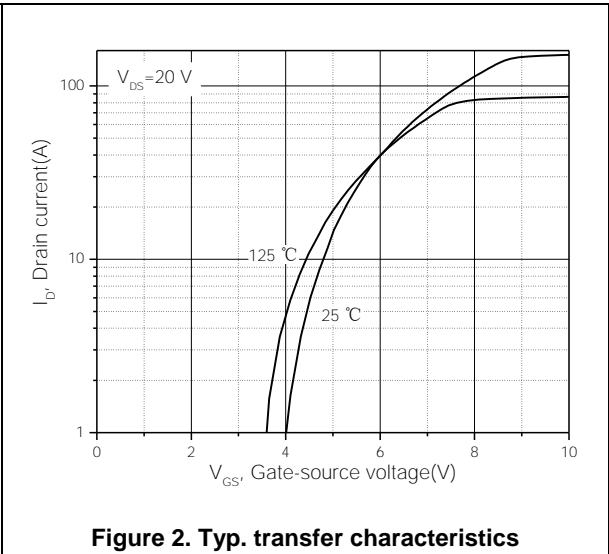


Figure 2. Typ. transfer characteristics

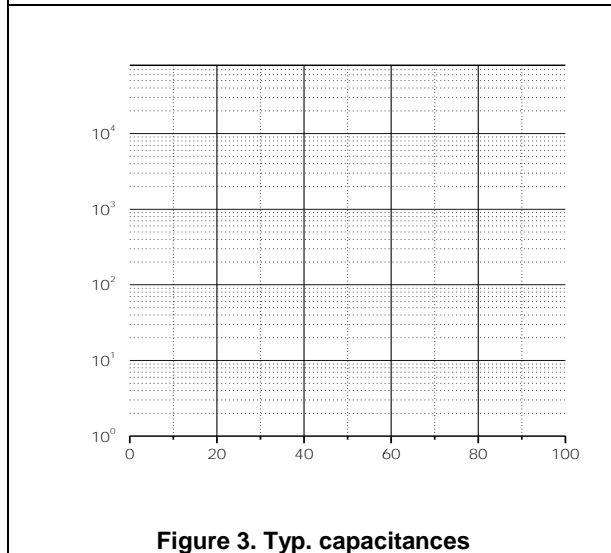


Figure 3. Typ. capacitances

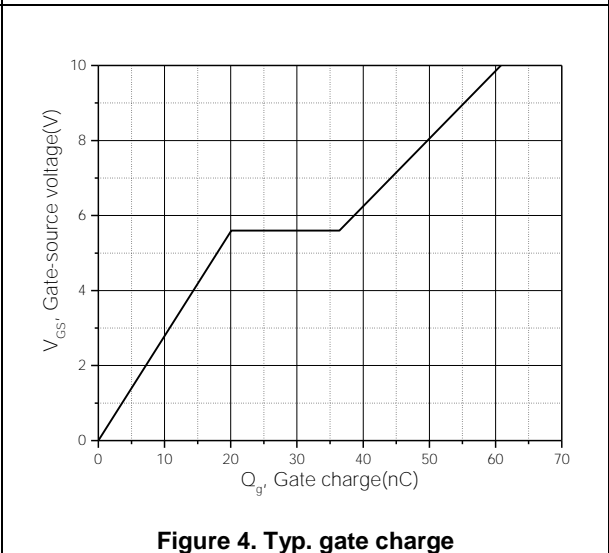


Figure 4. Typ. gate charge

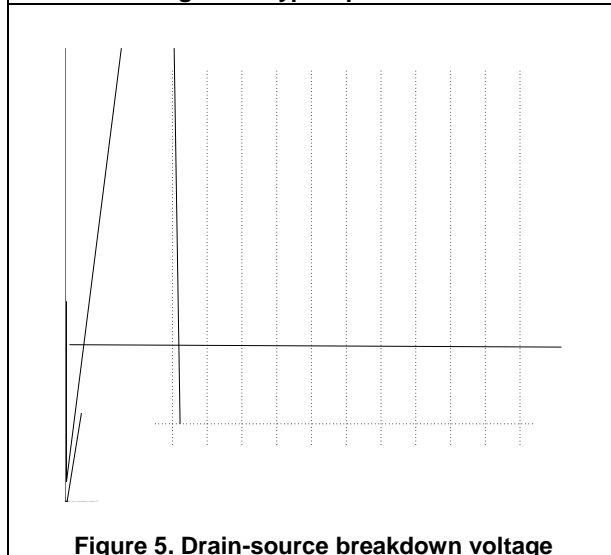


Figure 5. Drain-source breakdown voltage

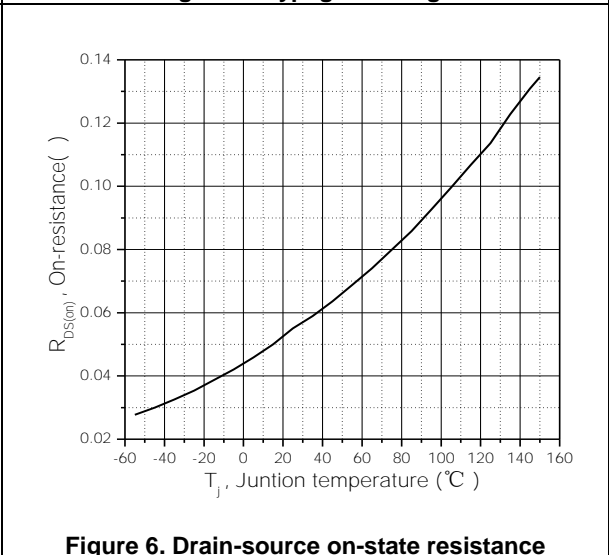


Figure 6. Drain-source on-state resistance

| | |
|--|--|
| <p>Figure 7. Forward characteristic of body diode</p> | <p>Figure 8. Drain-source on-state resistance</p> |
| <p>Figure 9. Drain current</p> | <p>Figure 10. Safe operation area $T_c=25$</p> |

Test circuits and waveforms

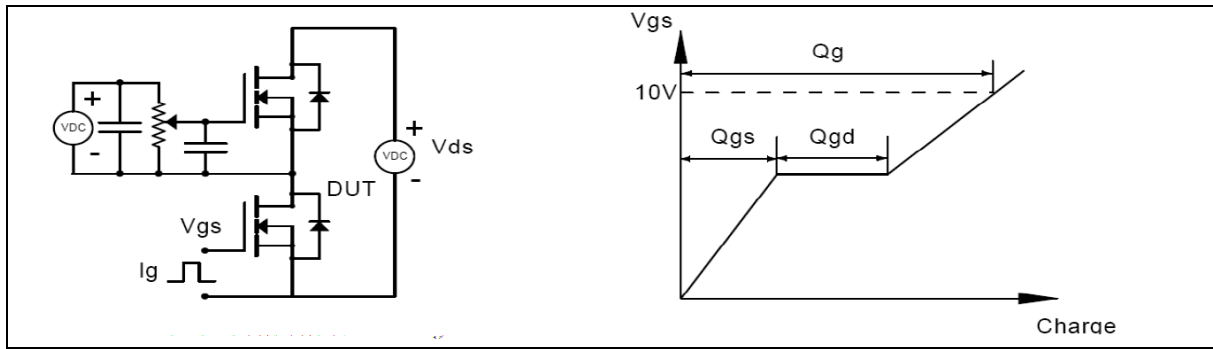


Figure 1. Gate charge test circuit & waveform

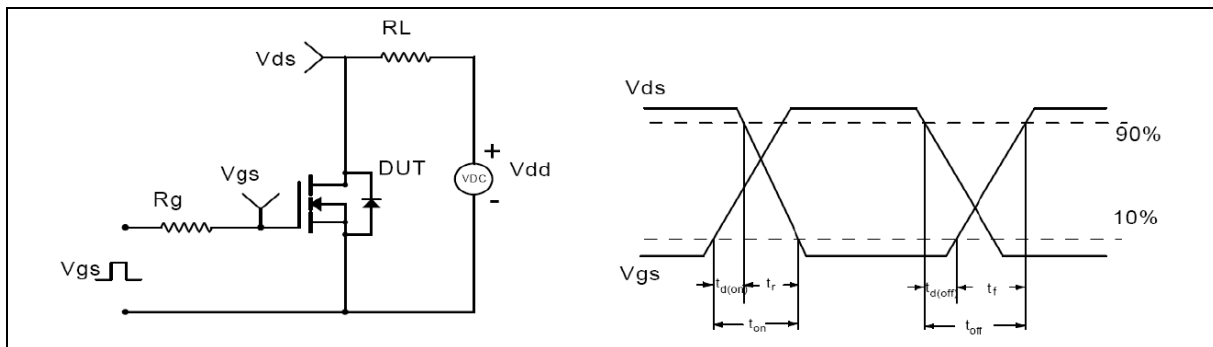


Figure 2. Switching time test circuit & waveforms

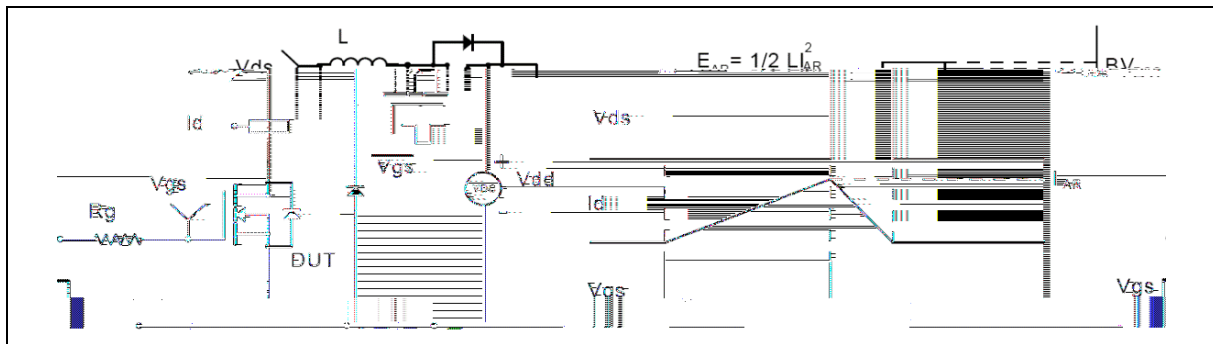


Figure 3. Unclamped inductive switching (UIS) test circuit & waveforms

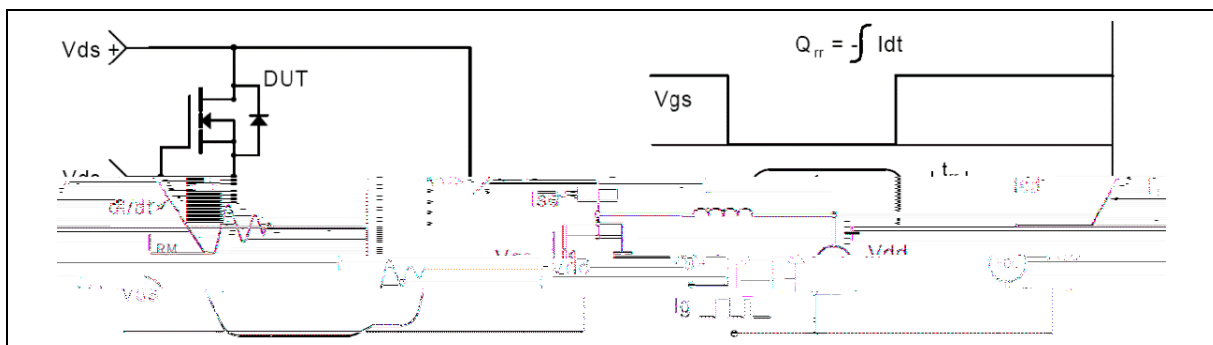
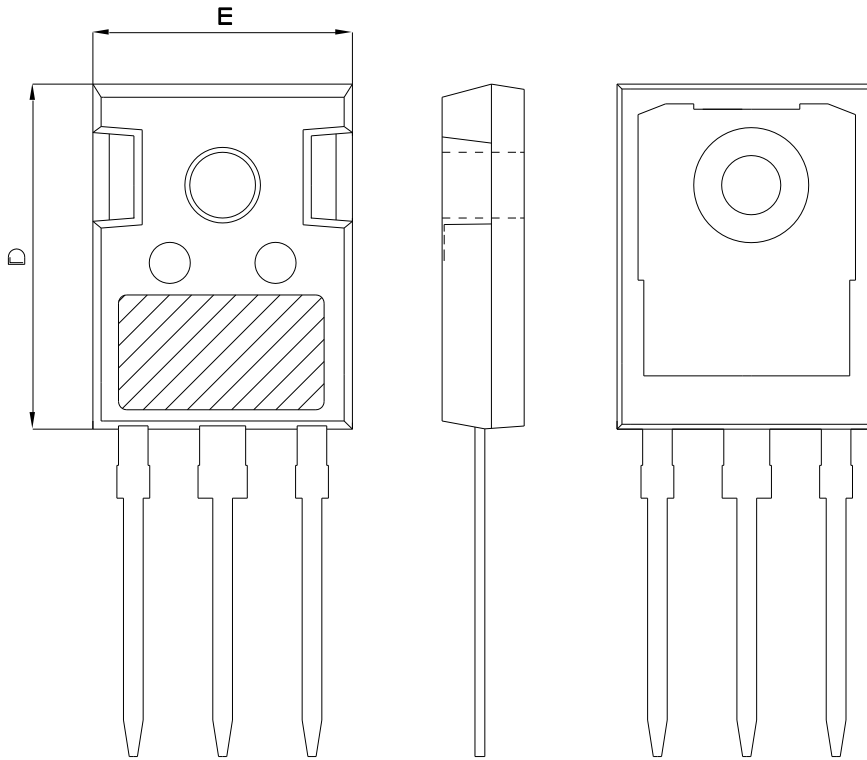


Figure 4. Diode reverse recovery test circuit & waveforms

Package Information



| Symbol | mm | | |
|--------|----------|-------|-------|
| | Min | Nom | Max |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.21 | 2.41 | 2.59 |
| A2 | 1.85 | 2.00 | 2.15 |
| b | 1.11 | 1.21 | 1.36 |
| b2 | 1.91 | 2.01 | 2.21 |
| b4 | 2.91 | 3.01 | 3.21 |
| c | 0.51 | 0.61 | 0.75 |
| D | 20.80 | 21.00 | 21.30 |
| D1 | 16.25 | 16.55 | 16.85 |
| E | 15.50 | 15.80 | 16.10 |
| E1 | 13.00 | 13.30 | 13.60 |
| E2 | 4.80 | 5.00 | 5.20 |
| E3 | 2.30 | 2.50 | 2.70 |
| e | 5.44 BSC | | |
| L | 19.82 | 19.92 | 20.22 |
| L1 | - | - | 4.30 |
| | 3.40 | 3.60 | 3.80 |
| | - | - | 7.30 |
| S | 6.15 BSC | | |

Version1: TO247-C package outline dimension

Ordering Information

| Package Type | Units/ Tube | Tubes/ Inner Box | Units/ Inner Box | Inner Boxes/ Carton Box | Units/ Carton Box |
|--------------|-------------|------------------|------------------|-------------------------|-------------------|
| TO247-C | 30 | 11 | 330 | 6 | 1980 |

Product Information

| Product | Package | Pb Free | RoHS | Halogen Free |
|-------------|---------|---------|------|--------------|
| OSG65R069HF | TO247 | yes | yes | yes |

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