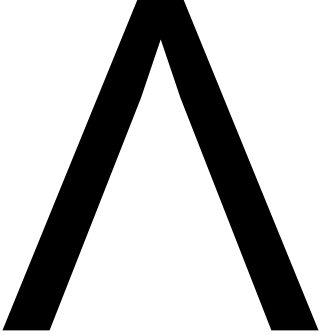


(Tc = 25°C unless otherwise specified)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $V_{(BR)DSS}$ | Drain-source breakdown voltage | 1200 | - | - | V | $V_{GS}$ = 0V, $I_D$ = 100μA | |
| $V_{GS(th)}$ | Gate threshold voltage | 2.3 | 2.8 | 3.6 | V | $V_{DS}$ = $V_{GS}$, $I_D$ = 20mA | Fig.11 |
| | | - | 2.1 | - | V | $V_{DS}$ = $V_{GS}$, $I_D$ = 20mA, $T_J$ = 175°C | |
| $I_{DSS}$ | Zero gate voltage drain current | - | 1 | 10 | μA | $V_{DS}$ = 1200V, $V_{GS}$ = 0V | |
| $I_{GSS}$ | Gate source leakage current | - | - | 100 | nA | $V_{GS}$ = 18V, $V_{DS}$ = 0V | |
| $R_{DS(on)}$ | Current drain-source on-state resistance | - | 15 | 21 | mΩ | $V_{GS}$ = 15V, $I_D$ = 70A | Fig.4,5,6 |
| | | - | 24 | - | | $V_{GS}$ = 15V, $I_D$ = 70A, $T_J$ = 175°C | |
| | | - | 12.6 | 17 | | $V_{GS}$ = 18V, $I_D$ = 70A | |
| | | - | 23 | - | | $V_{GS}$ = 18V, $I_D$ = 70A, $T_J$ = 175°C | |
| $g_{fs}$ | Transconductance | - | 52 | - | S | $V_{DS}$ = 20V, $I_D$ = 70A | Fig.7 |
| | | - | 49 | - | | $V_{DS}$ = 20V, $I_D$ = 70A, $T_J$ = 175°C | |
| $R_{g,int}$ | Internal gate resistance | - | 8.4 | - | Ω | $V_{AC}$ = 25mV, f = 1MHz, open drain | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $Q_{gs}$ | Gate source charge | - | 58 | - | nC | $V_{DS}$ = 800V, $V_{GS}$ = -4/+18V<br>$I_D$ = 70A | Fig.12 |
| $Q_{gd}$ | Gate drain charge | - | 40 | - | | | |
| $Q_g$ | Gate charge | - | 197 | - | | | |

Tc = 25°C unless otherwise specified,the data comes from TO-247-4L)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $E_{on}$ | Turn on switching energy | - | 1901 | - | μJ | $V_{DS}$ = 800V, $V_{GS}$ = -4/+18V<br>$I_D$ = 70A, Rg = 2.5Ω,<br>L = 16.7μH | |
| $E_{off}$ | Turn off switching energy | - | 687 | - | | | |
| $t_{d\ on}$ | Turn on delay time | - | 41 | - | ns | | |
| $t_r$ | Rise time | - | 37 | - | | | |
| $t_{d\ off}$ | Turn off delay time | - | 93 | - | | | |
| $t_f$ | Fall time | - | 20 | - | | | |

The data comes from TO-247-4L)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $V_{SD}$ | Diode forward voltage | - | 3.7 | - | V | $V_{GS}$ = -4V, $I_{SD}$ = 35A | Fig.8,9,10 |
| | | - | 3.3 | - | V | $V_{GS}$ = -4V, $I_{SD}$ = 35A<br>$T_J$ = 175°C | |
| $I_S$ | Continuous diode forward current | - | 125 | - | A | $V_{GS}$ = -4V, Tc = 25°C | Note2 |
| $t_{rr}$ | Reverse recovery time | - | 80 | - | ns | $V_R$ = 800V, $V_{GS}$ = -4V<br>$I_D$ = 70A<br>di/dt = 2150A/μs<br>$T_J$ = 175°C | |
| $Q_{rr}$ | Reverse recovery charge | - | 1247 | - | nC | | |
| $I_{rrm}$ | Peak reverse recovery current | - | 31 | - | A | | |

Note2 : When using SiC Body Diode the maximum recommended $V_{GS}$ = -4 V

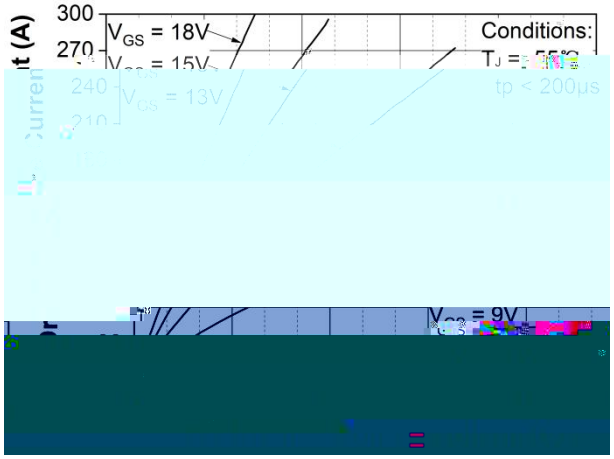



Figure 1. Output characteristics $T_J$ = -55 ºC

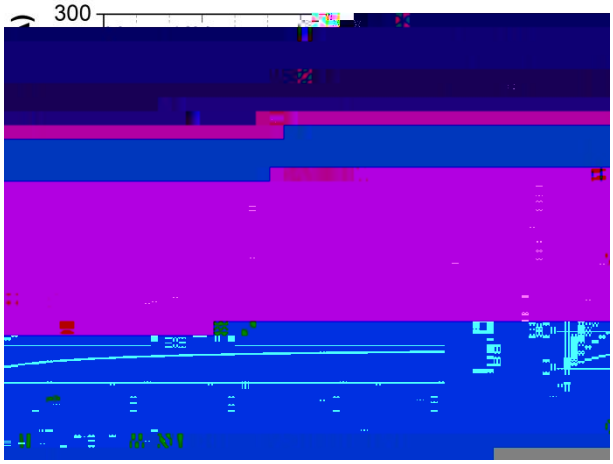



Figure 2. Output characteristics $T_J$ = 25 ºC

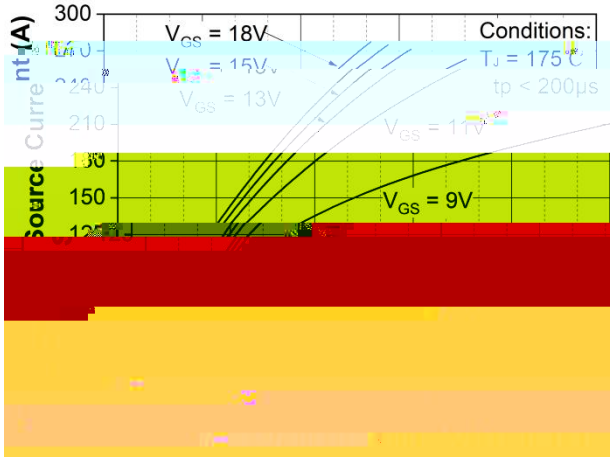



Figure 3. Output characteristics $T_J$ = 175 ºC

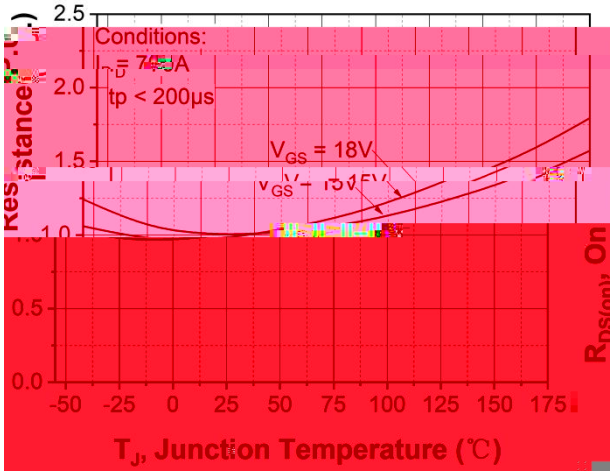



Figure 4. Normalized on-resistance vs. temperature

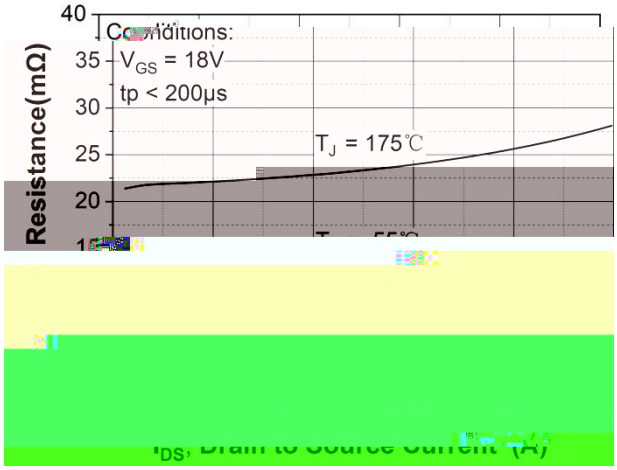



Figure 5. On-resistance vs. drain current for various temperatures

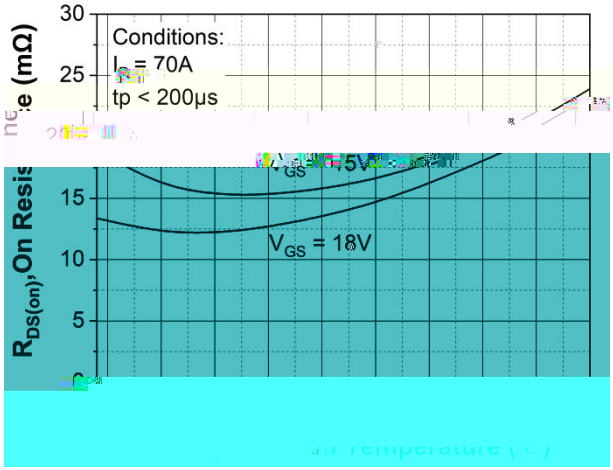



Figure 6. On-resistance vs. temperature for various gate voltages

Figure 7. Transfer characteristic for various junction t ]rãtj he ʁm "

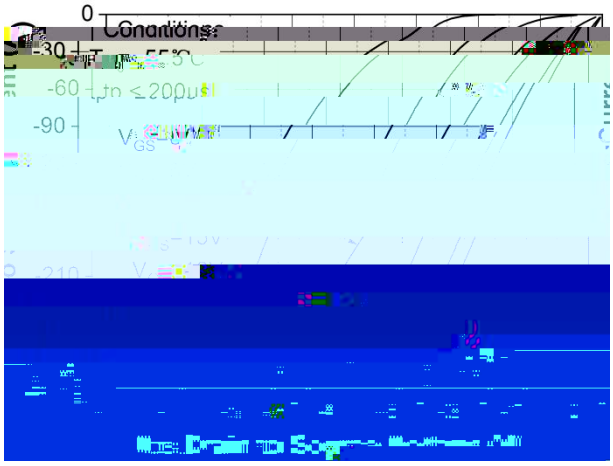



Figure 13. 3rd quadrant characteristic at $T_J$ = -55 ºC

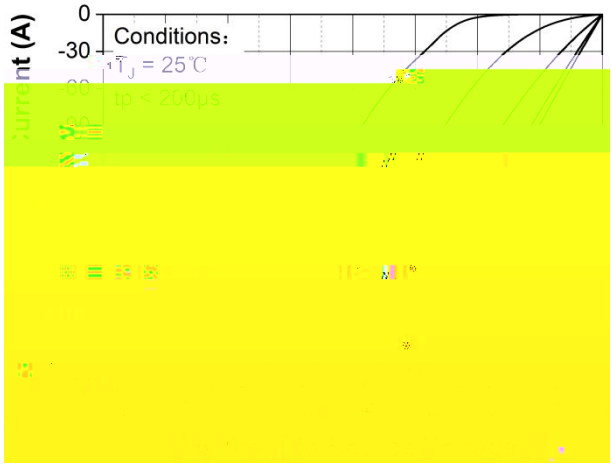



Figure 14. 3rd quadrant characteristic at $T_J$ = 25 ºC

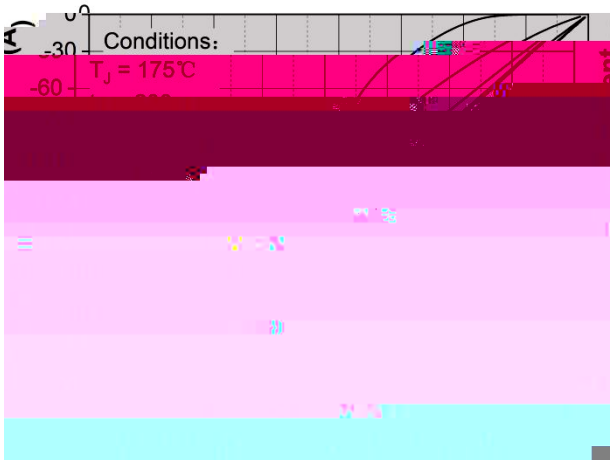



Figure 15. 3rd quadrant characteristic at $T_J$ = 175 ºC

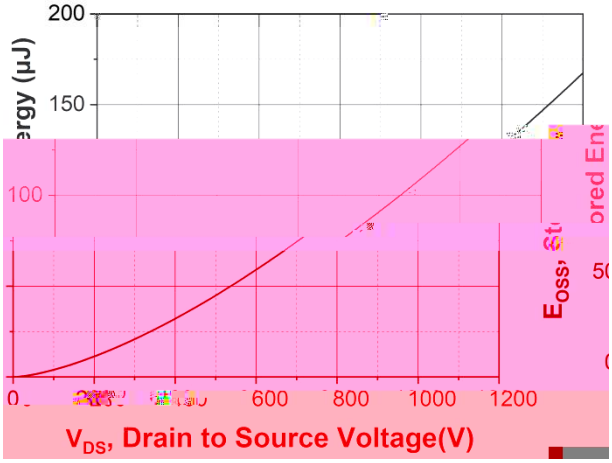



Figure 16. Output capacitor stored energy

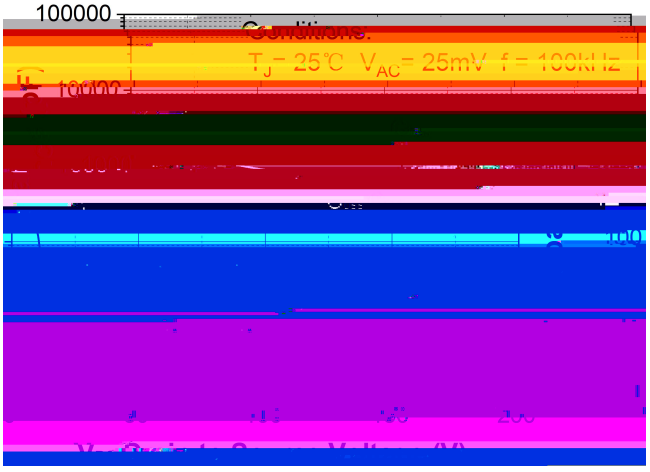



Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

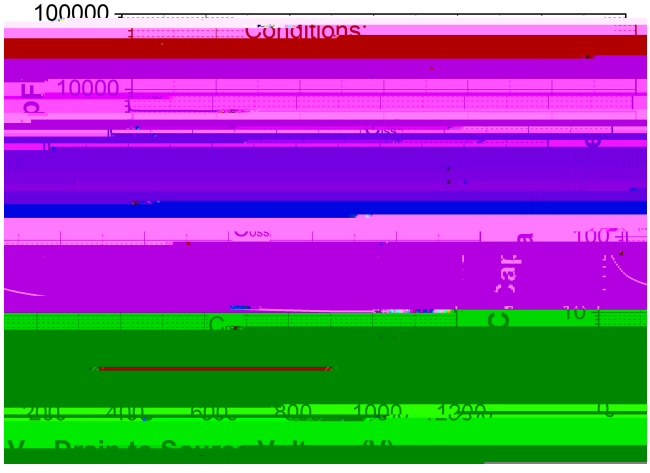
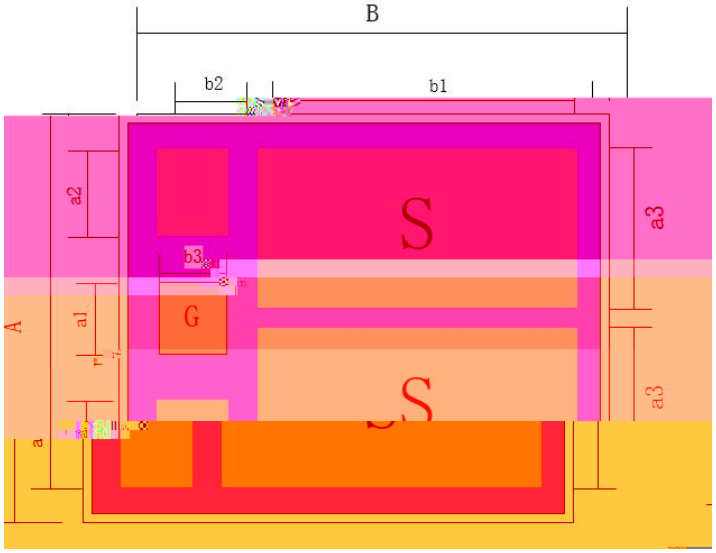



Figure 18. Capacitances vs. drain-source voltage (0 - 1200V)

| | | |
|---|---|---|
| Die size W x L | 5 * 5 | mm |
| Gate pad size W x L | 0.78 * 0.68 | mm |
| Source pad size W x L | 1.9 * 3.1 | mm |
| Kelvin pad size W x L | 1.25 * 0.70 | mm |
| Die thickness | 150 ± 20 | µm |
| Top side source gate metallization | 4/4/ r/ ĩ | |



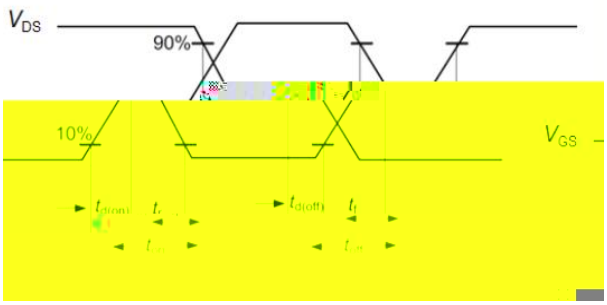



Figure A. Definition of switching times

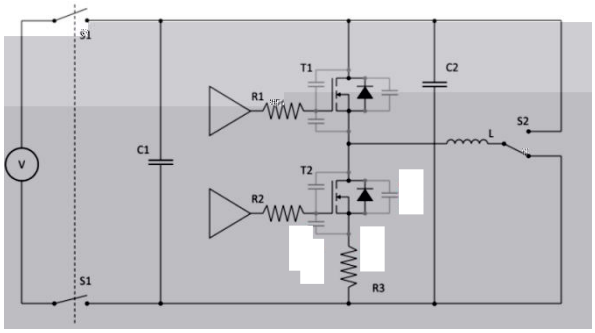



Figure B. Dynamic test circuit

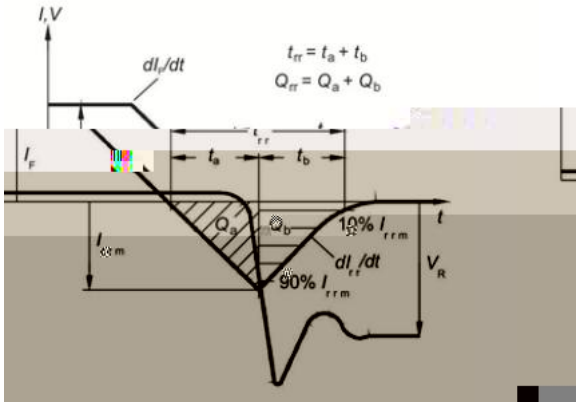



Figure C. Definition of body diode switching characteristics

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|---|---|---|---|
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6. Due to technical requirements products may contain dangerous substances. For information on the types in question please contact Sichain office.

7. Except as otherwise explicitly approved by Sichain in a written document signed by authorized representatives of Sichain, Sichain' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.

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