S3M009075RK-A

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Datasheet

Q_{gs}	Gate source charge	-	60	-	nC

V_{DS} = 500V, V_{GS} = -4/18V, I_D = 120A



3 Electrical characteristic diagrams

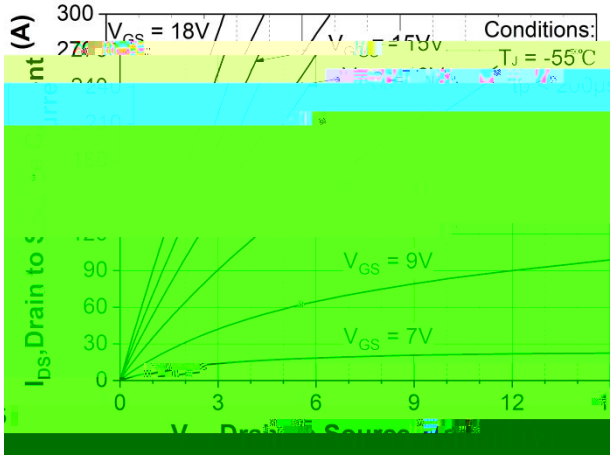


Figure 1. Output characteristics T_J = -55 ºC



Figure 2. Output characteristics T_J = 25 ºC

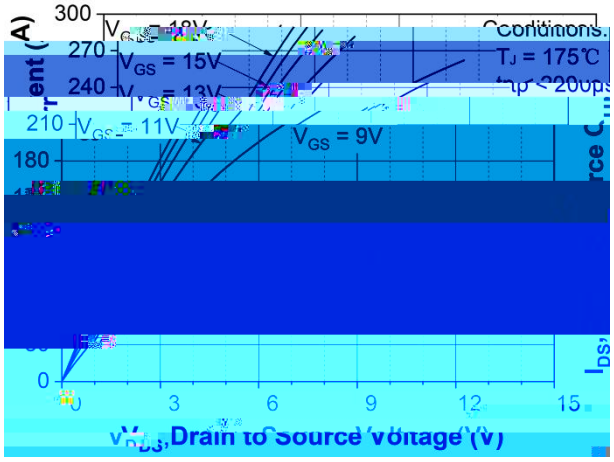


Figure 3. Output characteristics T_J = 175 ºC

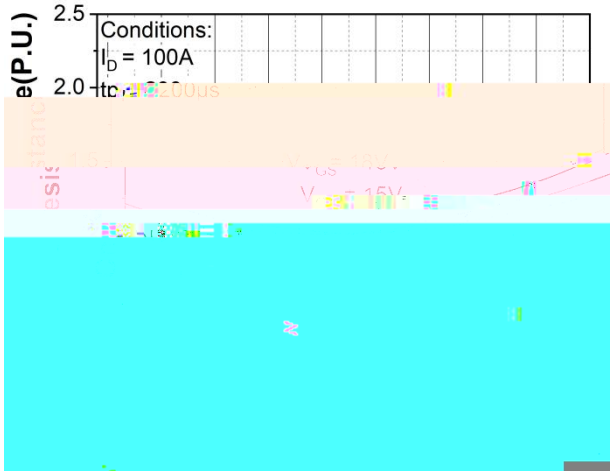


Figure 4. Normalized on-resistance vs. temperature

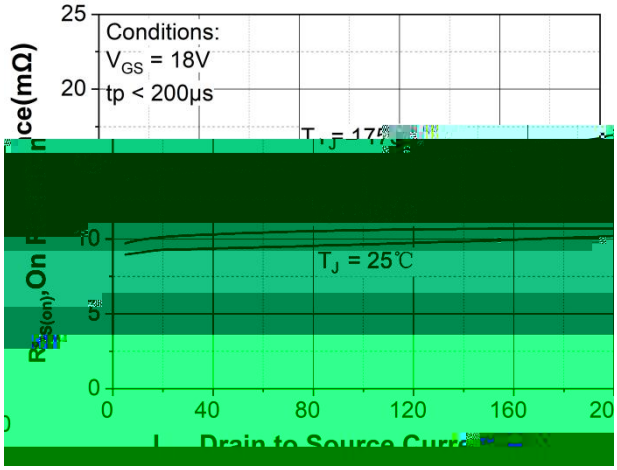


Figure 5. On-resistance vs. drain current for various temperatures

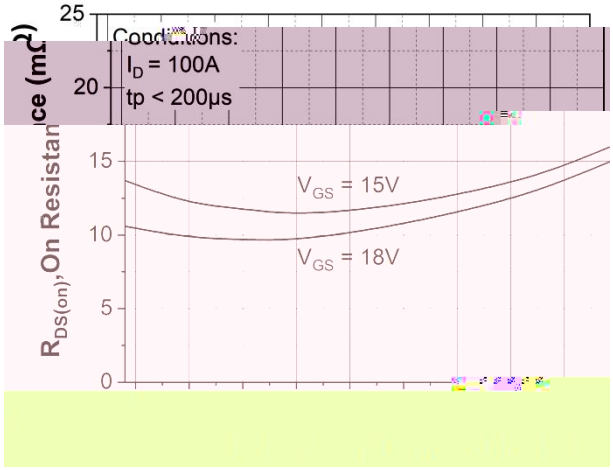
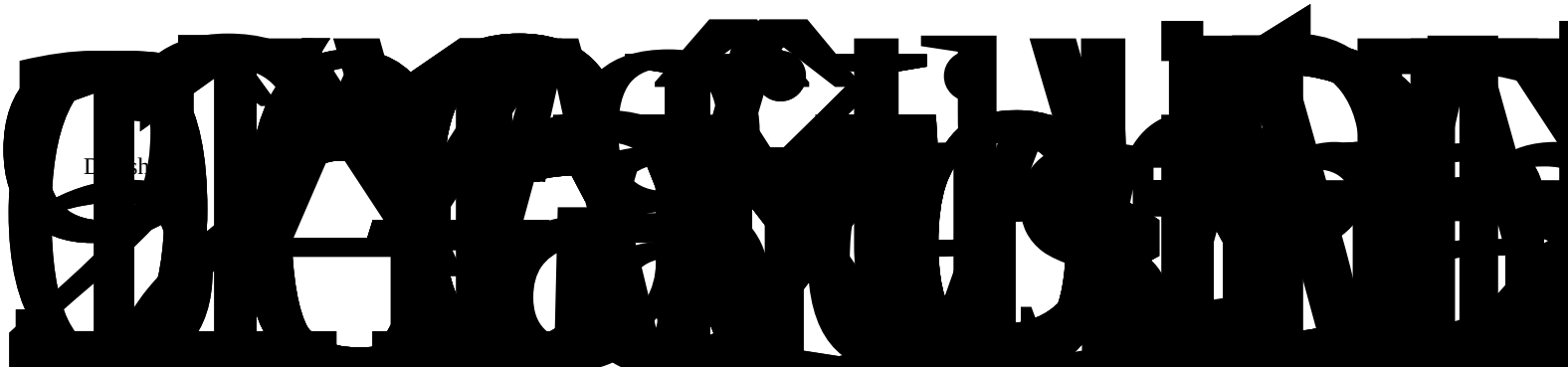


Figure 6. On-resistance vs. temperature for various gate voltages

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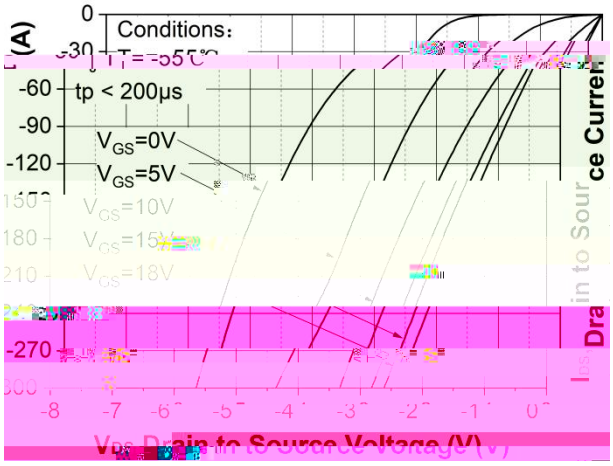


Figure 13. 3rd quadrant characteristic at T_J = -55 ºC



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

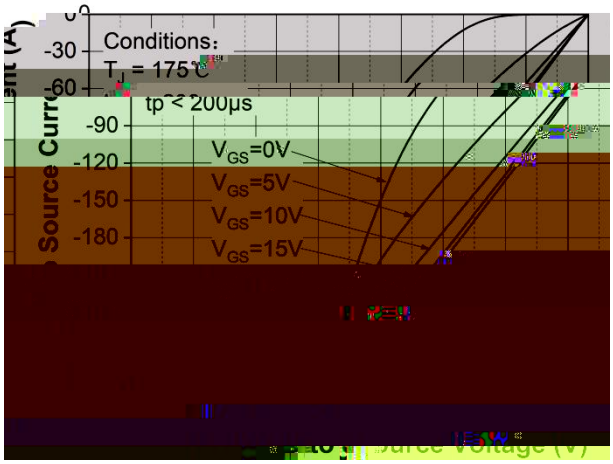


Figure 15. 3rd quadrant characteristic at T_J = 175 ºC

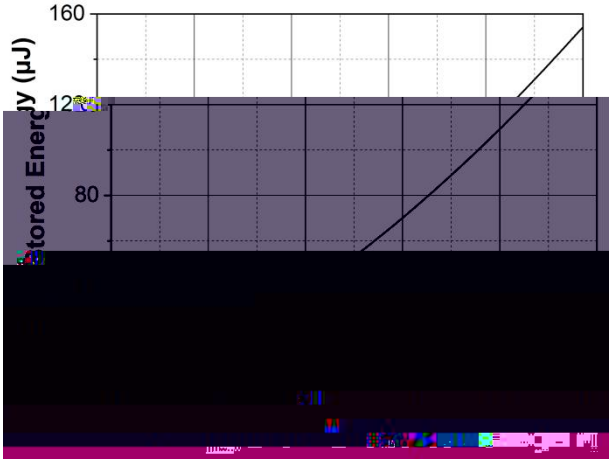


Figure 16. Output capacitor stored energy

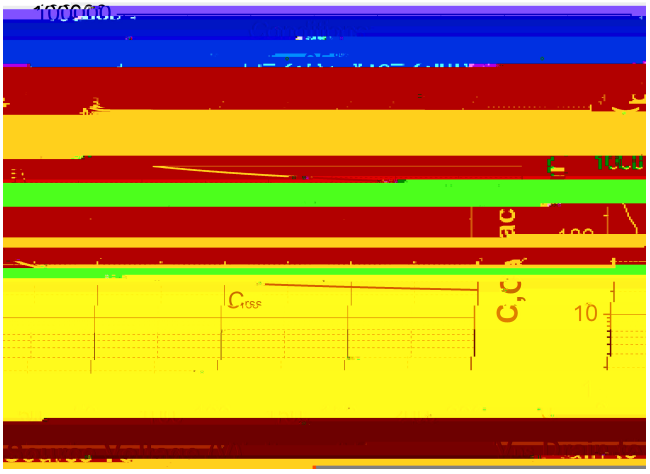


Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

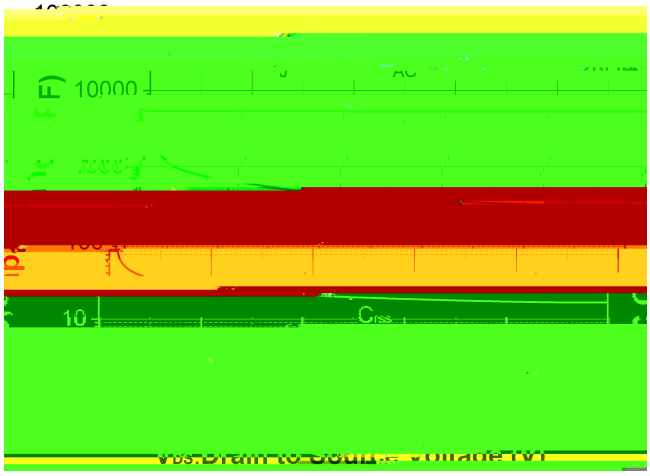


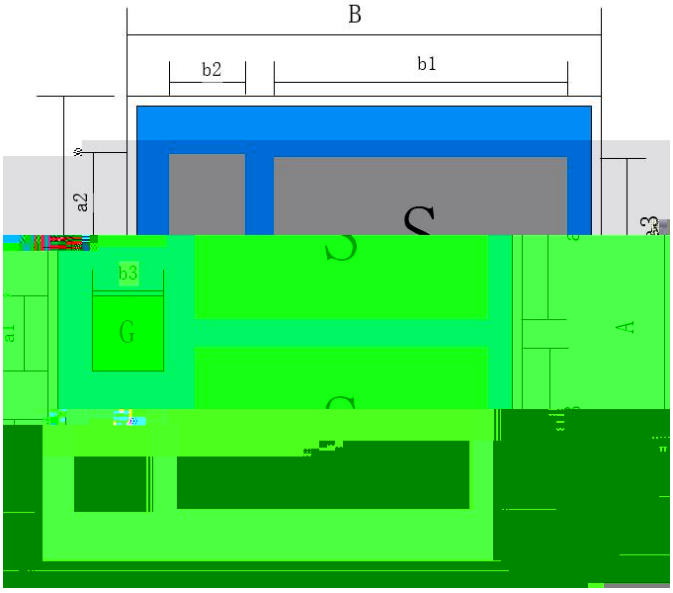
Figure 18. Capacitances vs. drain-source voltage (0 - 750V)

4 Mechanical parameters

4.1 Dimensions and metallization

Parameter	Typical value	Unit	Metallization
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	130 ± 20	μm	
Top side gate & kelvin source metallization	4	μm	AlCu
Top side power source metallization	4/4/0.35/0.05	μm	AlCu/Ni/Pd/Au
Back side drain metallization	1	μm	Ag

4.2 Layout



Symbol	Dimension / mm
B	5
b1	3.1
b2	0.7
b3	0.68
A	5
a1	0.78
a2	1.25
a3	1.9

5 Test conditions

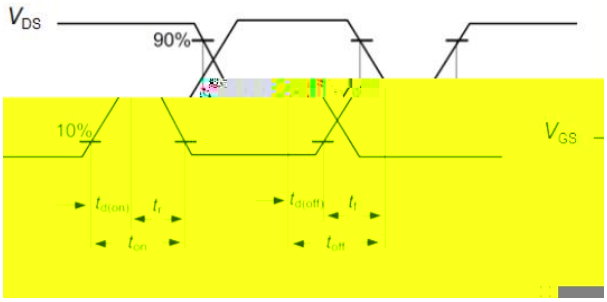


Figure A. Definition of switching times

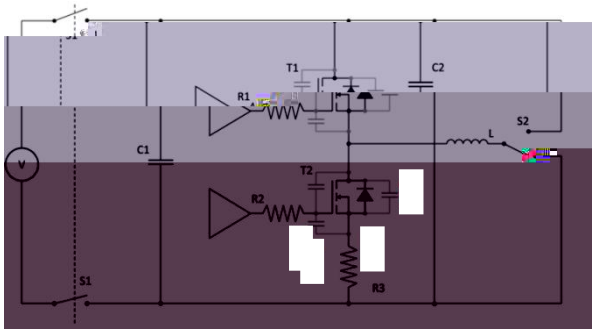


Figure B. Dynamic test circuit

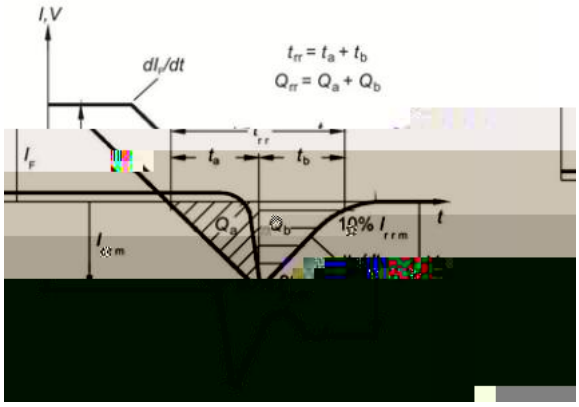


Figure C. Definition of body diode

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Revision history

Document version	Date of release	Document stage	Description of changes
V01_00	2026.06.26	Final	——

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

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