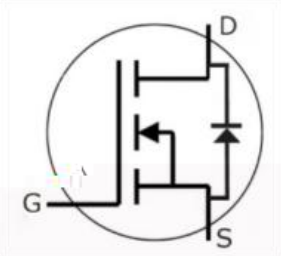
N Channel Enhancement



- High speed switching
- Very low switching losses
- High blocking voltage with low on-resistance
- Temperature independent turn-off switching losses
- Halogen free, RoHS compliant

- Cooling effort reduction
- Efficiency improvement
- Reduced cooling requirements
- Increased power density
- Increased system switching frequency

S3M007075RK-A	4.8 * 6.3

- EV motor drive
- PV string inverters
- Solar power optimizer
- Switch mode power supplies

		(T_C=25 , $R_{th\ (j-c),max}$ ≤ 0.26°C/W)	(V_{GS} = 18V, I_D = 96A, T_J = 25)	
S3M007075RK-A	750V	219A	7.5mΩ	175

Datasheet

Q_{gs}	Gate source charge	-	80	-	nC	V_{DS} = 500V, V_{GS} = -4/+18V I_D = 96A	Fig.12
Q_{gd}	Gate drain charge	-	52	-			
Q_g	Gate charge	-	262	-			

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

E_{on}	Turn on switching energy	-	1605	-	μJ	V_{DS} = 500V, V_{GS} = -4/+18V I_D = 96A, Rg = 2.5Ω, L = 16.7μH	
E_{off}	Turn off switching energy	-	1256	-			
$t_{d\ on}$	Turn on delay time	-	3		ns		
t_r	Rise time	-	61				
t_d	Turn off delay time	-	14-אr				
t_f	Fall time	-	28				

(The data comes from TO-247-4L)

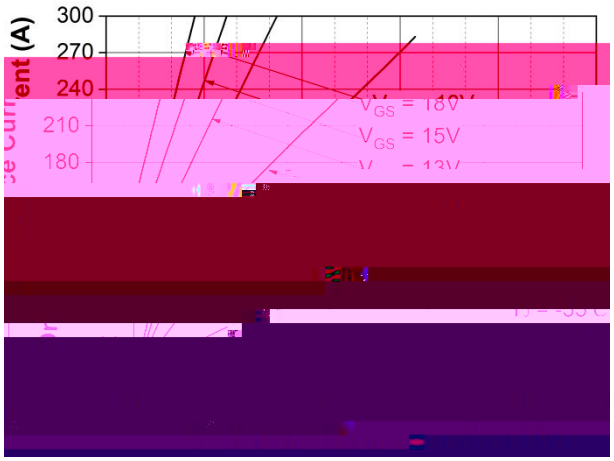


Figure 1. Output characteristics T_J = -55 ºC

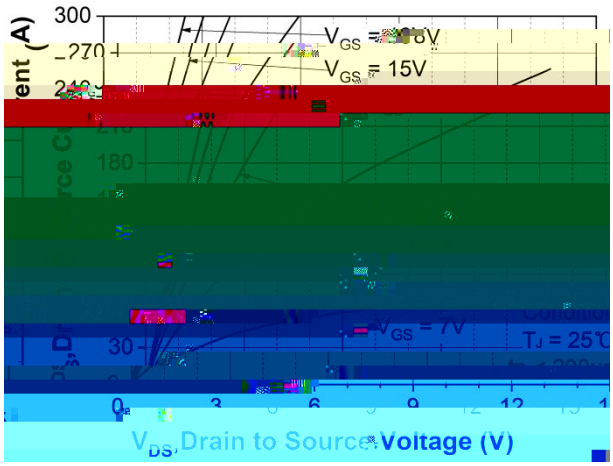


Figure 2. Output characteristics T_J = 25 ºC

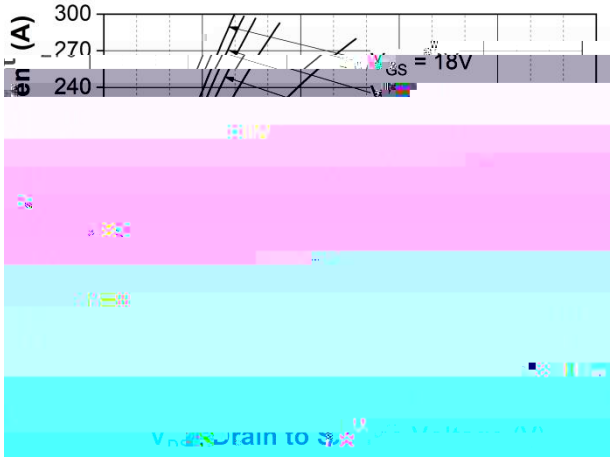


Figure 3. Output characteristics T_J = 175 ºC

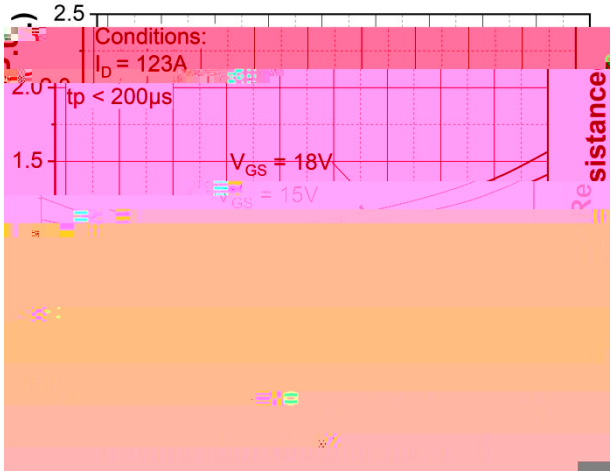


Figure 4. Normalized on-resistance vs. temperature

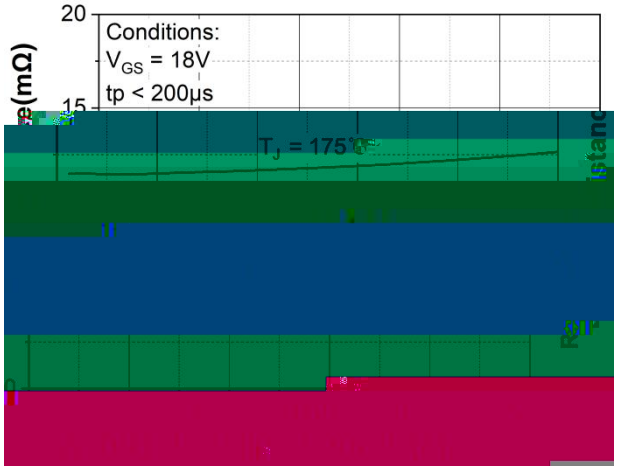


Figure 5. On-resistance vs. drain current for various temperatures

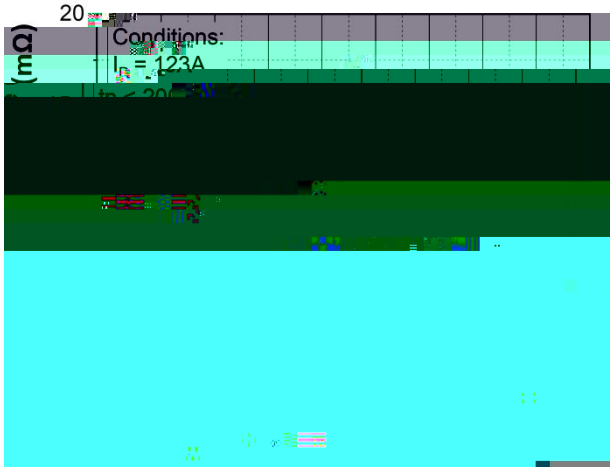


Figure 6. On-resistance vs. temperature for various gate voltages

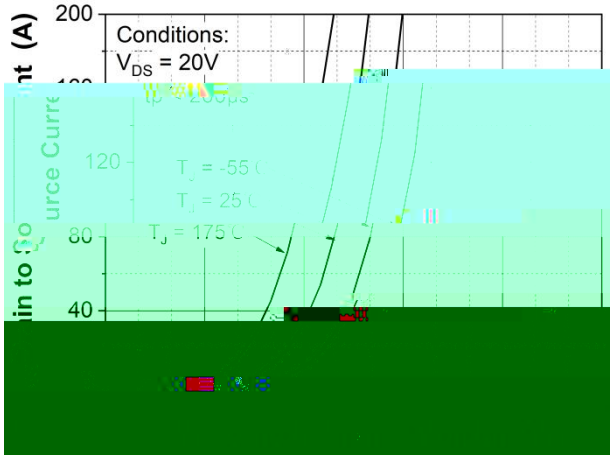


Figure 7. Transfer characteristic for various junction temperatures

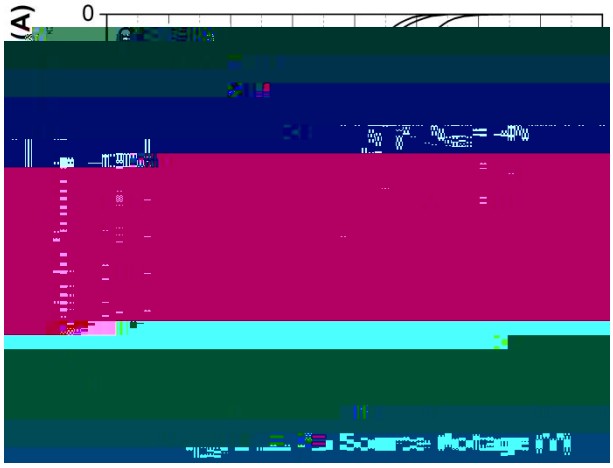


Figure 8. Body diode characteristic at T_J = -55 ºC

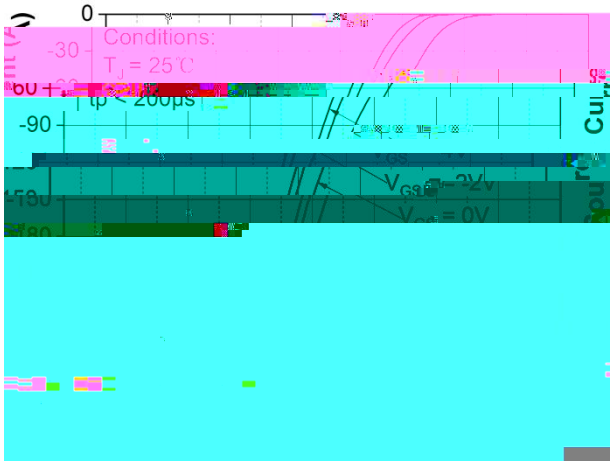


Figure 9. Body diode characteristic at T_J = 25 ºC

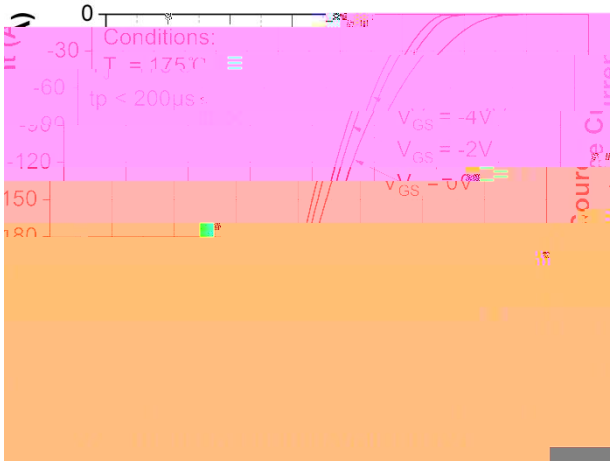


Figure 10. Body diode characteristic at T_J = 175ºC

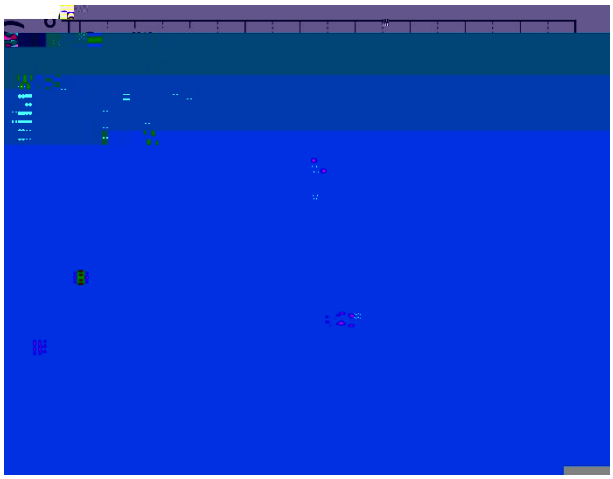


Figure 11. Threshold voltage vs. temperature

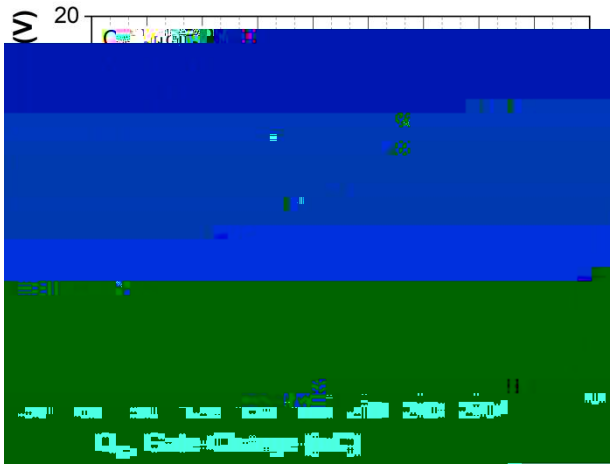


Figure 12. Gate charge characteristic

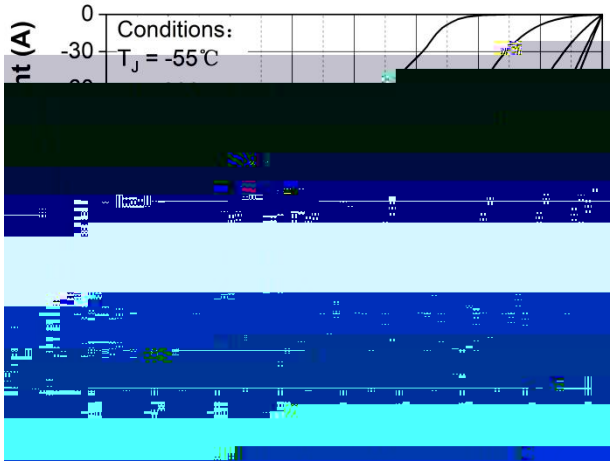


Figure 13. 3rd quadrant characteristic at T_J = -55 ºC

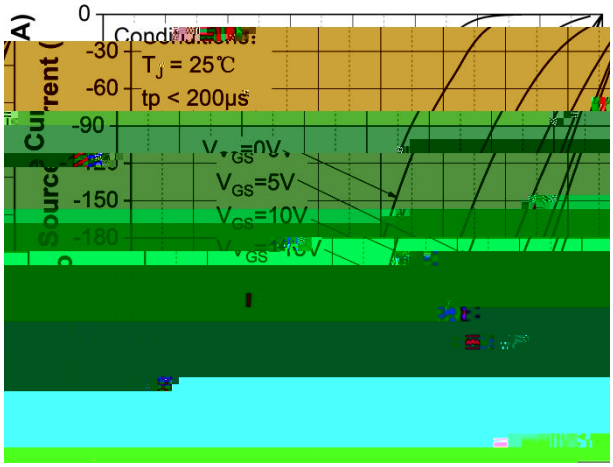


Figure 14. 3rd quadrant characteristic at T_J = 25 ºC

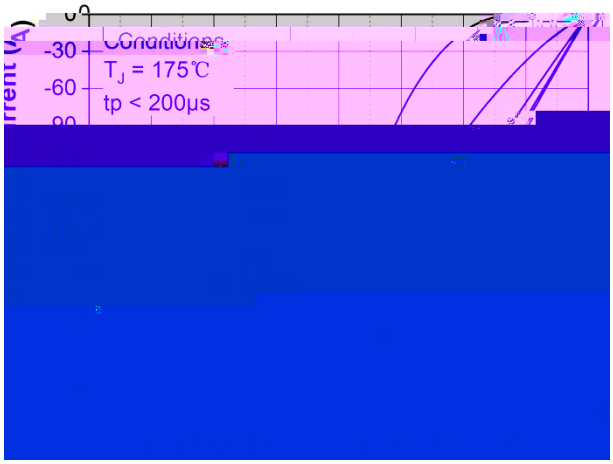


Figure 15. 3rd quadrant characteristic at T_J = 175 ºC

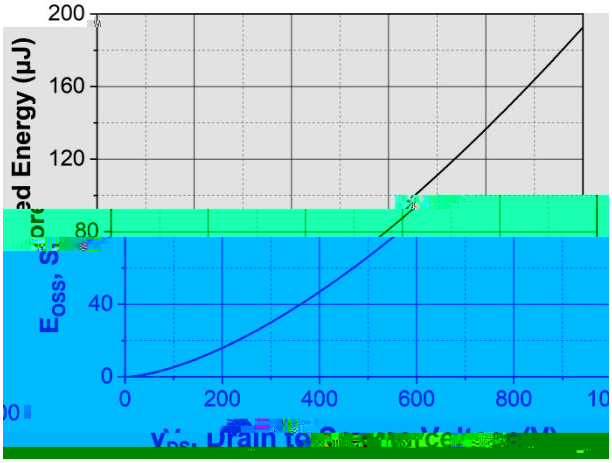


Figure 16. Output capacitor stored energy

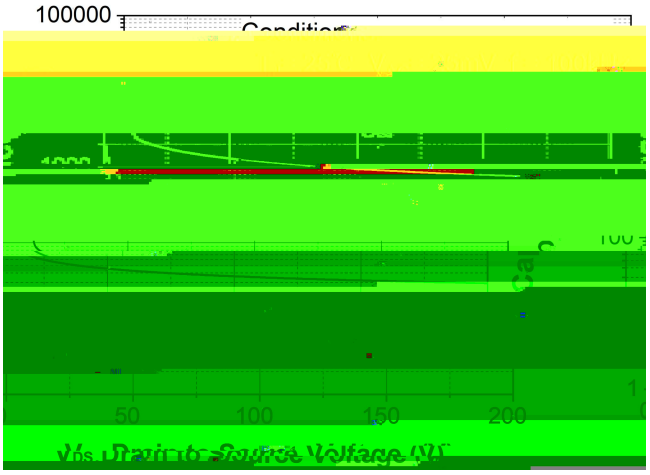


Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

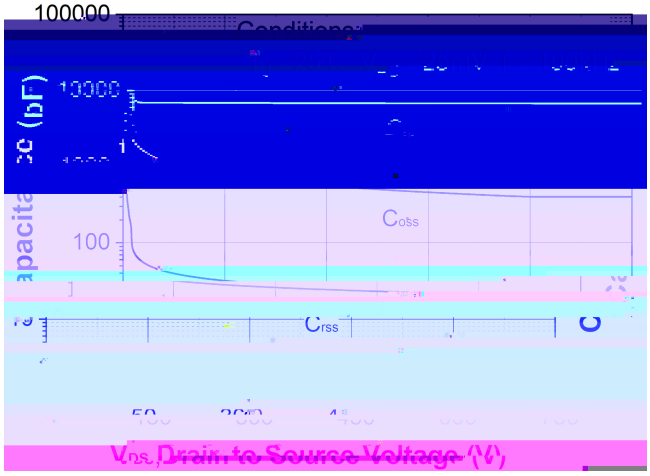


Figure 18. Capacitances vs. drain-source voltage (0 - 750V)

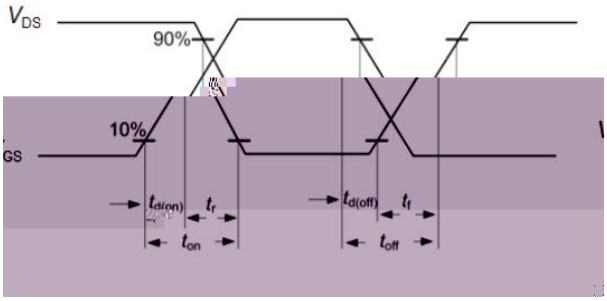


Figure A. Definition of switching times

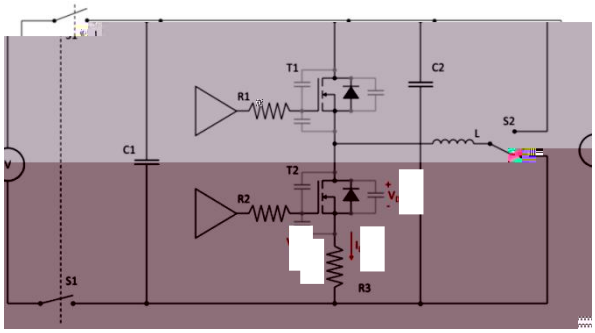


Figure B. Dynamic test circuit

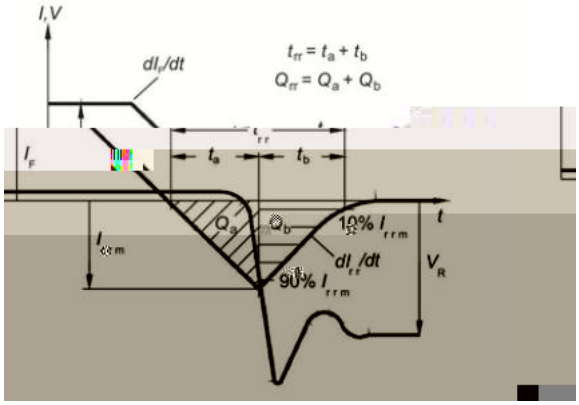


Figure C. Definition of b ’ פ

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

7. Except as otherwise explicitly approved by Sichain in a written document signed by an authorized