Q M

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
- Effic ^kMo lnn

(Tc = 25°C unless otherwise specified)

$V_{DS,max}$	Drain source voltage	1200	V	V_{GS} = 0V, I_D = 100 µA	
$V_{GS,max}$	Gate source voltage	-8 /+22	V	Absolute maximum values	Note1
$V_{GSpulse}$	Gate-source voltage,max. transient voltage	-10 /+25	V	$t_p \leq 0.5$µs, D 0.01	
V_{GSop}	Gate source voltage	-4 /+18	V	Recommended operational values	
I_D	Continuous drain current	152	A	V_{GS} = 18V, T_C = 25˚C	Fig.19
		108		V_{GS} = 18V, T_C = 100˚C	
$I_{D(pulse)}$	Pulsed drain current	448	A	Pulse width t_P =100µs limited by $T_{J,max}$	Fig.22
P_D	Power dissipation	625	W	T_C = 25˚C, T_J = 175˚C	Fig.20
T_J ,T_{stg}	Operating Junction and storage temperature	-55 to +175	˚C		
T_L	Soldering temperature	260	˚C	1.6mm (0.063”) from case for 10s	
T_M	Mounting torque	1 8.8	Nm lbf-in	M3 or 6-32 screw	

Note 1 when using MOSFET Body Diode $V_{GS,max}$ = -4 / +22V

$R_{th(j-c)}$	Thermal resistance from junction to case	-	0.24	0.3	°C/W	-	Fig.21

Q_{gs}	Gate source charge	-	54	-	nC	V_{DS} = 800V, V_{GS} = -4/+18V I_D = 100A	Fig.12
Q_{gd}	Gate drain charge	-	45	-			
Q_g	Gate charge	-	230	-			

(Tc = 25°C unless otherwise specified)

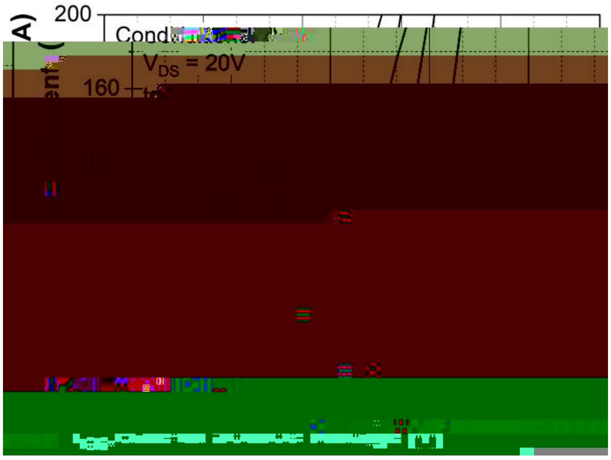

Figure 7. Transfer characteristic for various junction temperatures

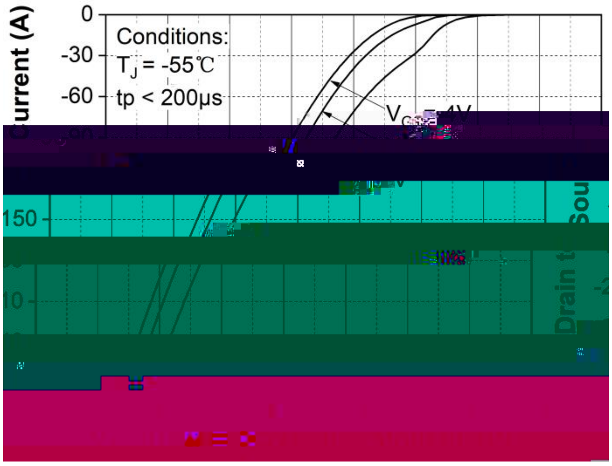

Figure 8. Body diode characteristic at T_J = -55 ºC

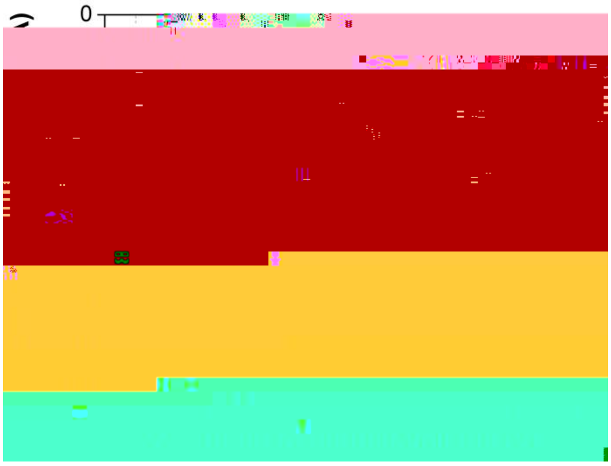

Figure 9. Body diode characteristic at T_J = 25 ºC

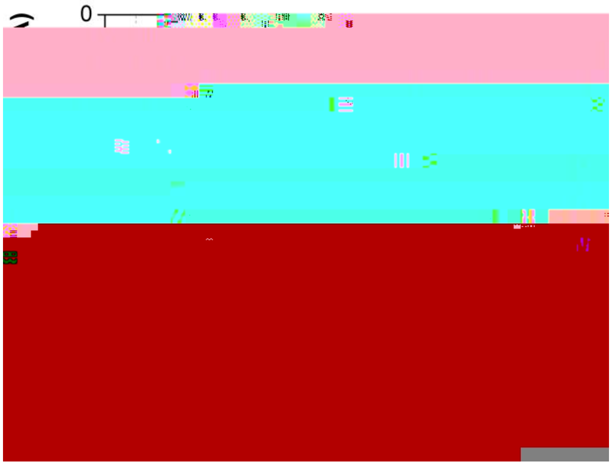

Figure 10. Body diode characteristic at T_J = 175ºC

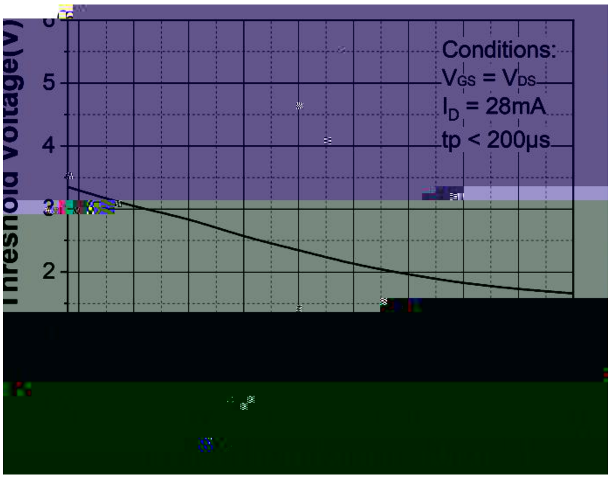

Figure 11. Threshold voltage vs. temperature

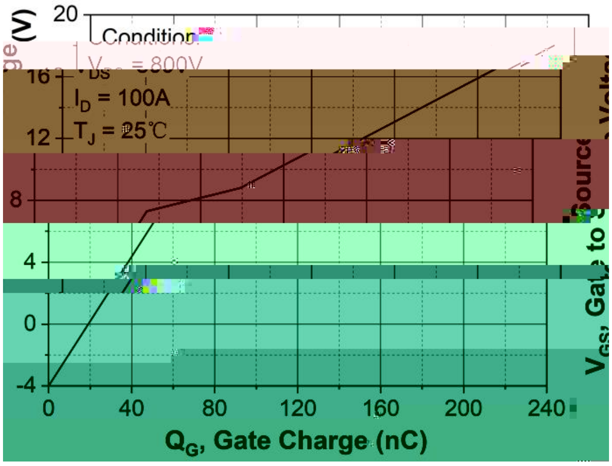

Figure 12. Gate charge characteristic

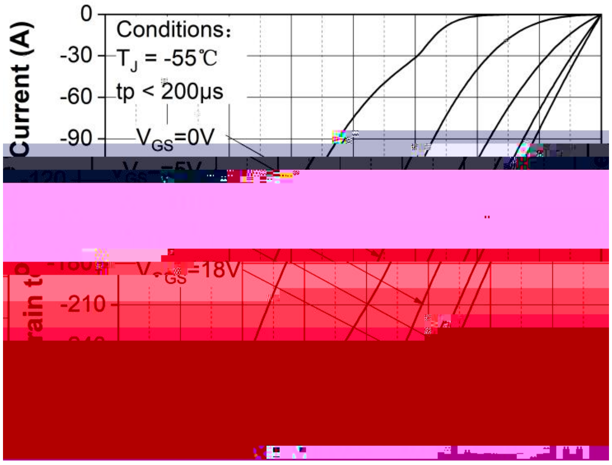

Figure 13. 3rd quadrant characteristic at T_J = -55 ºC

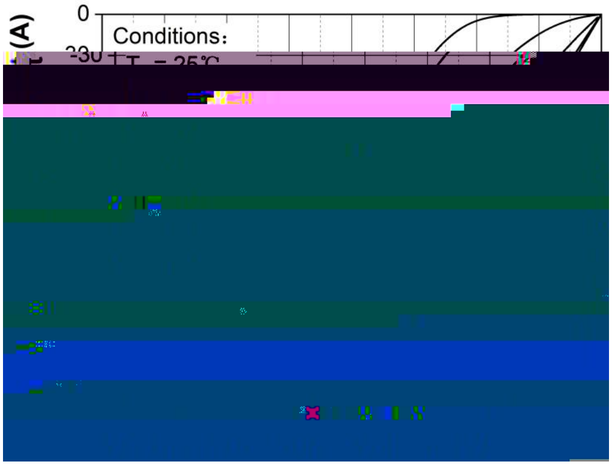

Figure 14. 3rd quadrant characteristic at T_J = 25 ºC

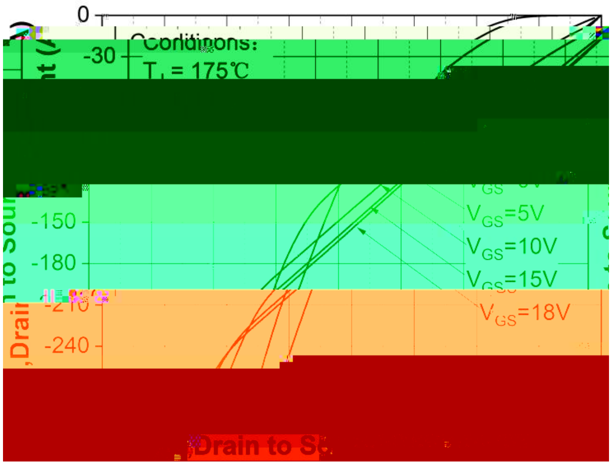

Figure 15. 3rd quadrant characteristic at T_J = 175 ºC

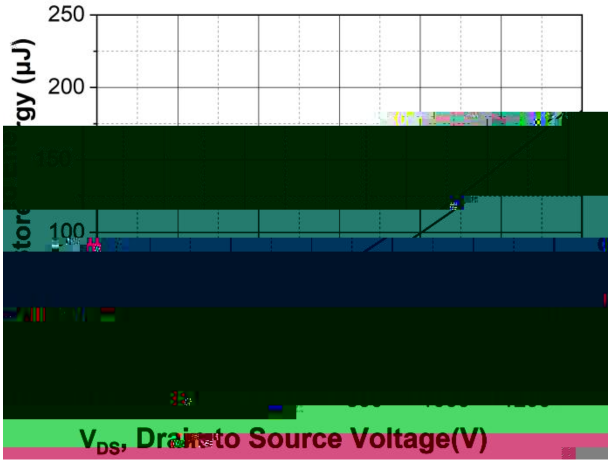

Figure 16. Output capacitor stored energy

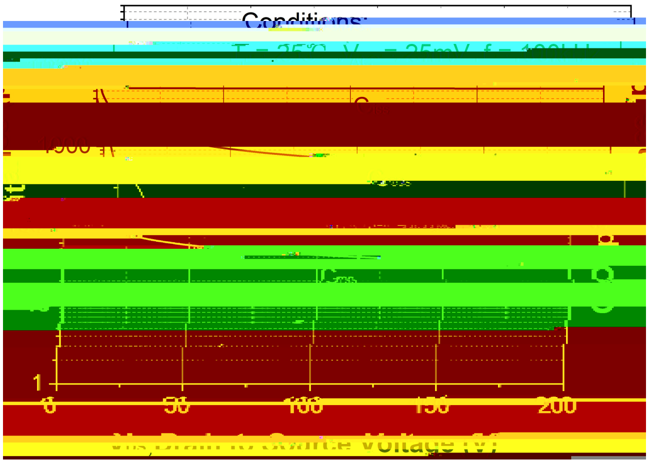

Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

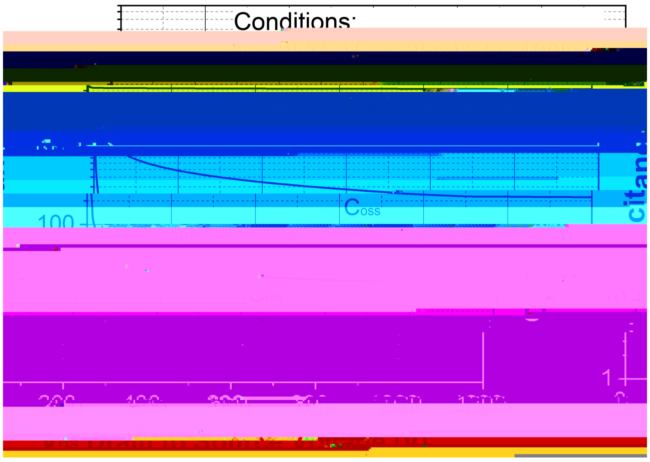

Figure 18. Capacitances vs. drain-source voltage (0 - 1200V)

Figure 19. Continuous drain current derating vs. case temperature

Figure 20. Maximum power dissipation derating vs. case temperature

Figure 21. Transient thermal impedance (junction - case)

Figure 22. Safe operating area

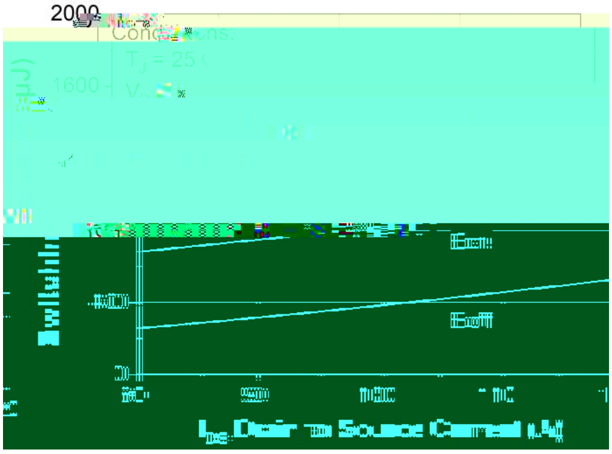

Figure 23. Clamped Inductive switching energy vs. drain current (V_{DD} = 600V)

Figure 24. Clamped inductive switching energy vs. drain current (V_{DD} = 800V)

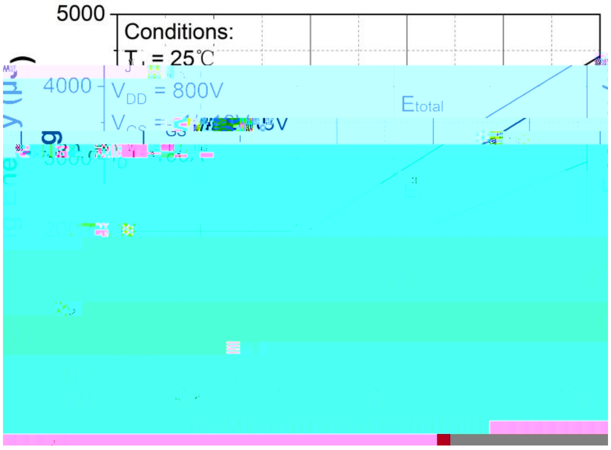

Figure 25. Clamped inductive switching energy vs. R_G(ext)

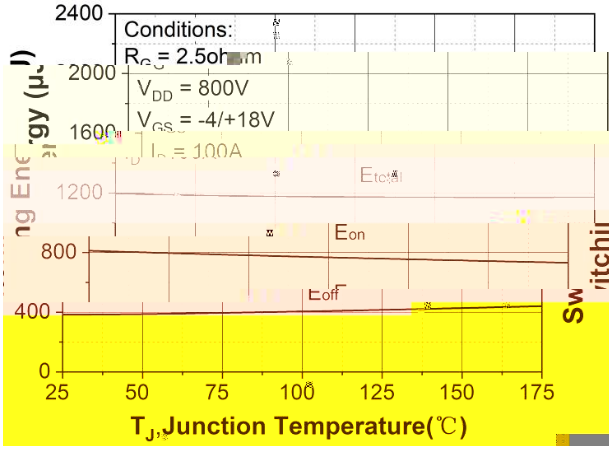

Figure 26. Clamped inductive switching energy vs. temperature

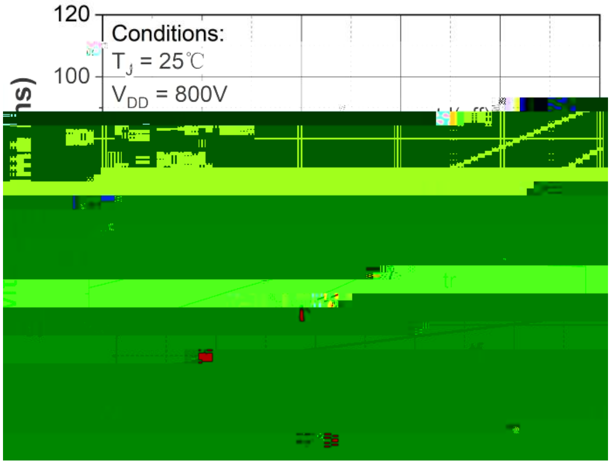

Figure 27. Switching times vs. R_G(ext)

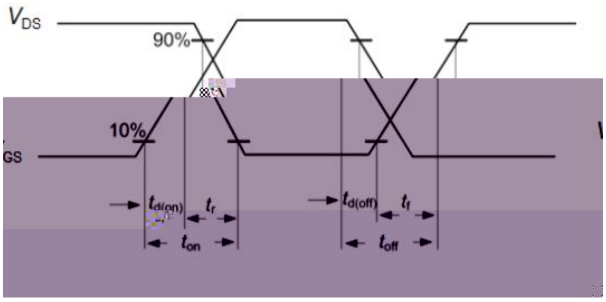

Figure A. Definition of switching times

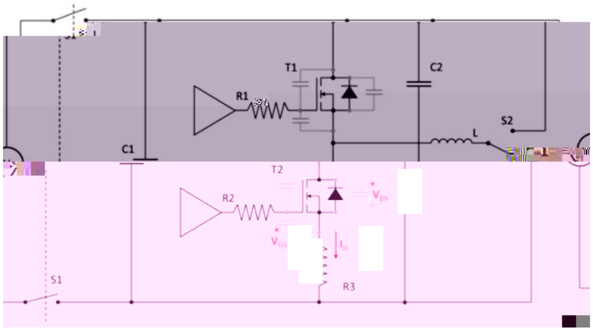

Figure B. Dynamic test circuit

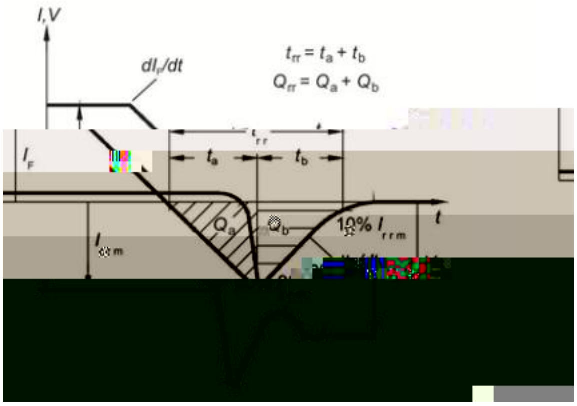

Figure C. Definition of body diode switching characteristics