N Channel Enhancement

- High speed switching
- Very low switching losses
- Fully controllable dv/dt
- High blocking voltage with low on-resistance
- Fast intrinsic diode with low reverse recovery (Qrr)
- Temperature independent turn-off switching losses
- Halogen free, RoHS compliant

- Cooling effort reduction
- Effic



Dđ

(Tc = 25°C unless otherwise specified)

$V_{DS,max}$

(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 = 2.5mA	Fig.11
		-	2.1	-	V	V_{DS} = V_{GS}, I_D = 2.5mA 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	-	137	200	mΩ	V_{GS} = 15V, I_D = 9A	Fig.4,5,6
		-	215	-		V_{GS} = 15V, I_D = 9A, T_J = 175°C	
		-	115	160		V_{GS} = 18V, I_D = 9A	
		-	204	-		V_{GS} = 18V, I_D = 9A, T_J = 175°C	
g_{fs}	Transconductance	-	6.8	-	S	V_{DS} = 20V, I_D = 9A	Fig.7
		-	6	-		V_{DS} = 20V, I_D = 9A, T_J = 175°C	
$R_{g,int}$	Internal gate resistance	-	7	-	Ω	V_{AC} = 25mV, f = 1MHz, open drain	

(Tc = 25°C unless otherwise specified)

C_{iss} Input capacitance

Q_{gs}	Gate source charge	-	5.5	-	nC	V_{DS} = 800V, V_{GS} = -4/+18V I_D = 9A	Fig.12
Q_{gd}	Gate drain charge	-	5.3	-			
Q_g	Gate charge	-	16.6	-			

Figure 1. Output characteristics T_J = -55 ºC

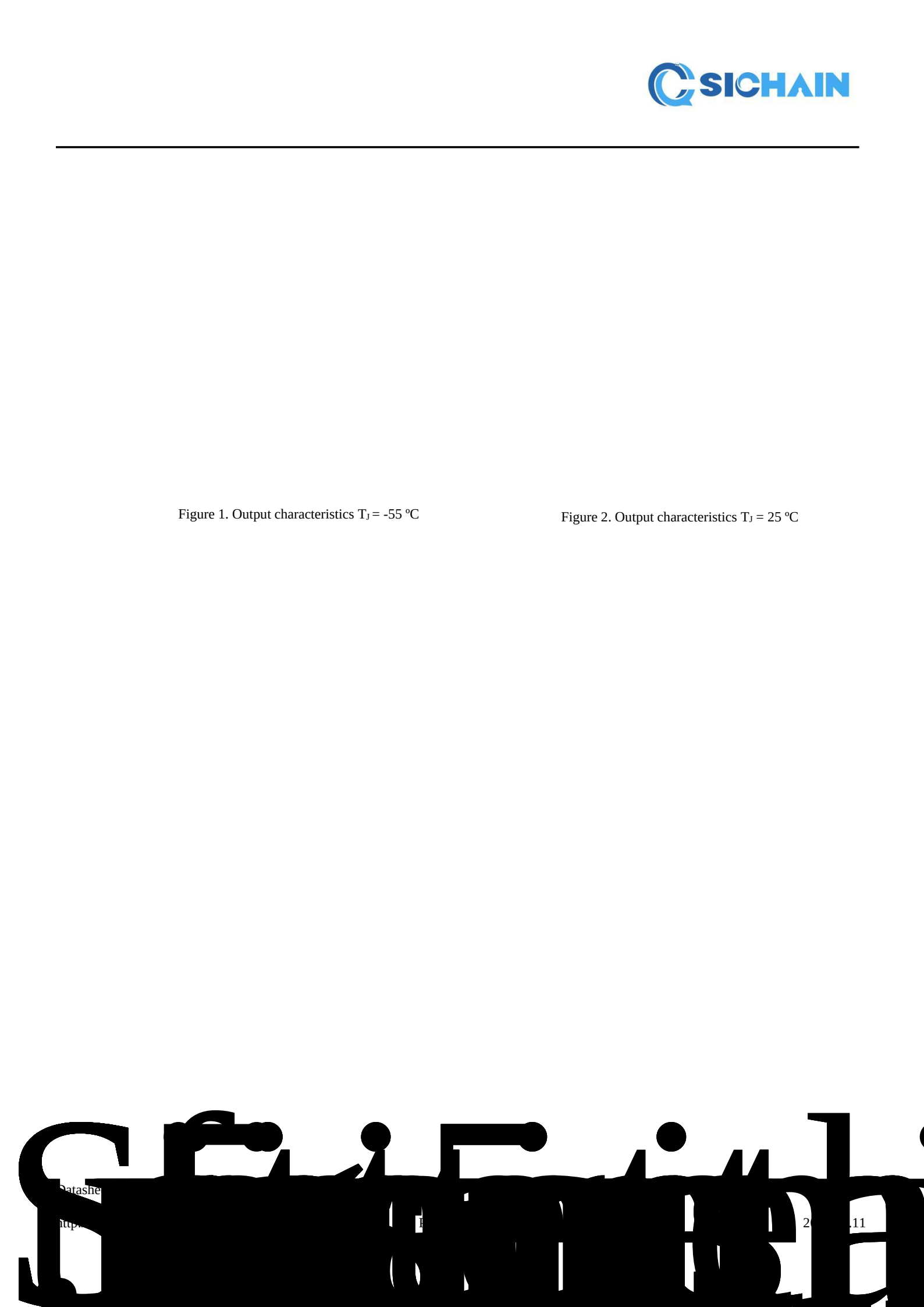


Figure 2. Output characteristics T_J = 25 ºC

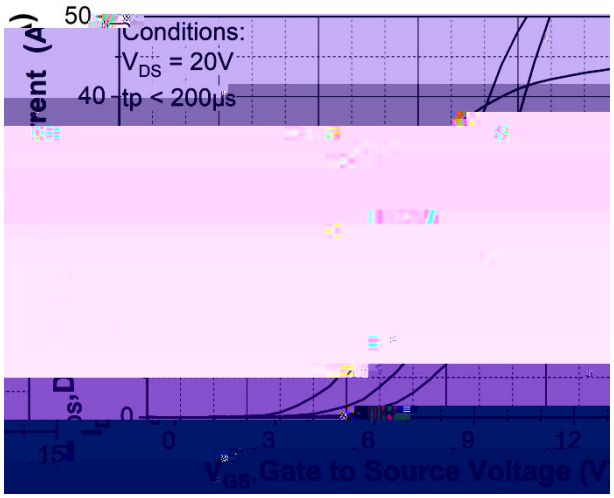


Figure 7. Transfer characteristic for various junction temperatures

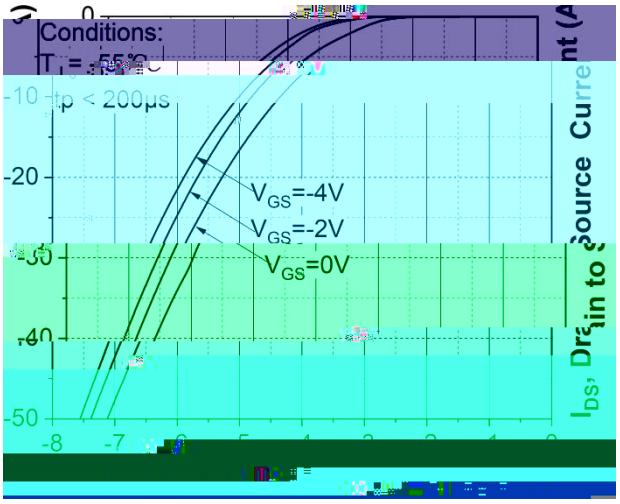


Figure 8. Body diode characteristic at T_J = -55 ºC

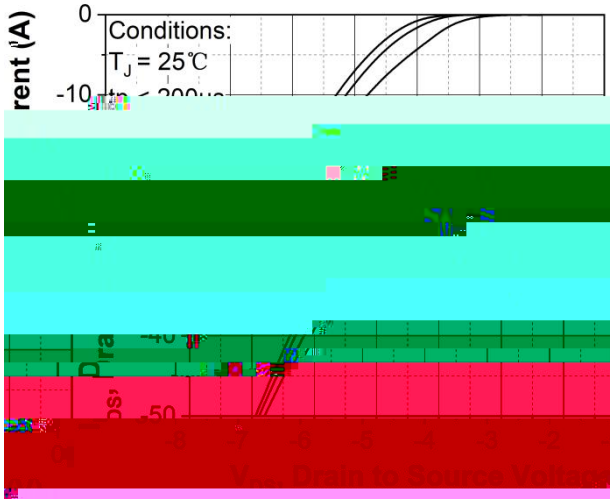


Figure 9. Body diode characteristic at T_J = 25 ºC

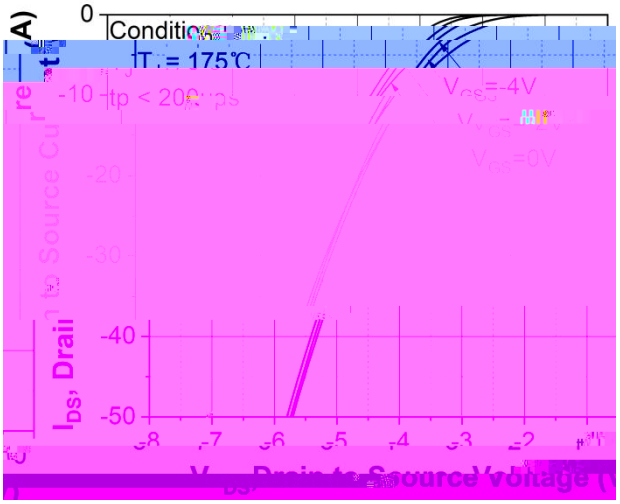


Figure 10. Body diode characteristic at T_J = 175ºC

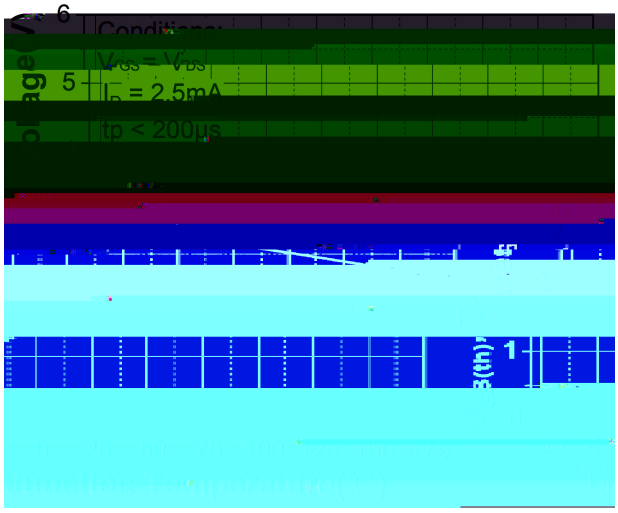


Figure 11. Threshold voltage vs. temperature

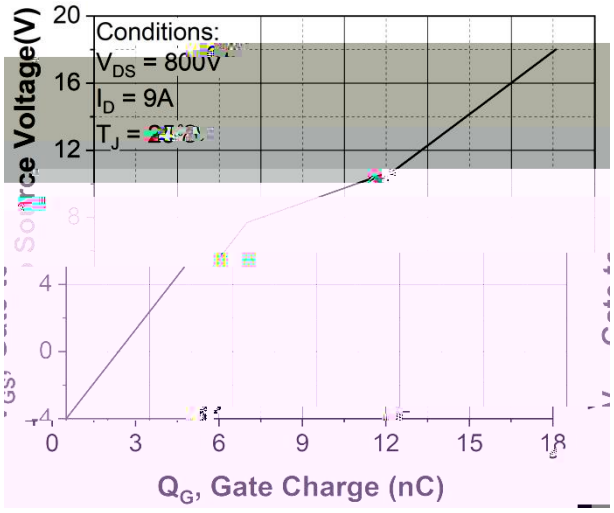


Figure 12. Gate charge characteristic

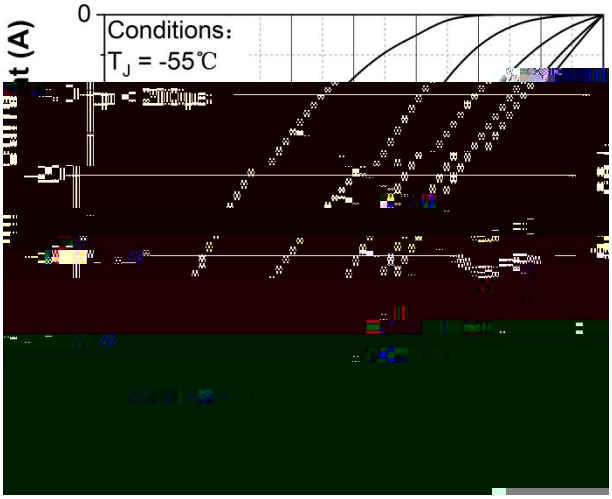


Figure 13. 3rd quadrant characteristic at T_J = -55 ºC

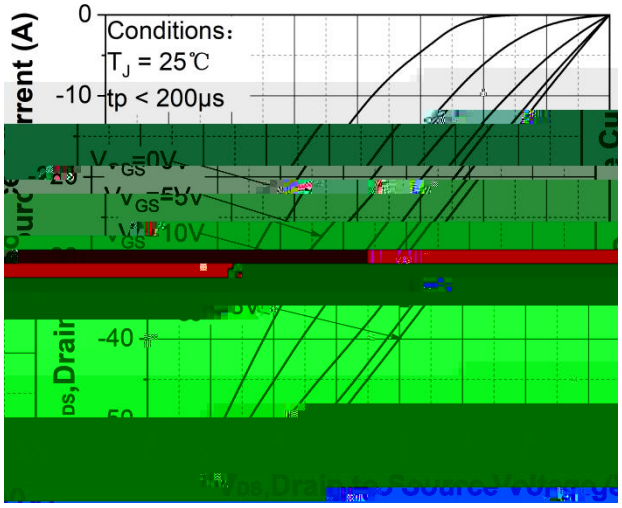


Figure 14. 3rd quadrant characteristic at T_J = 25 ºC

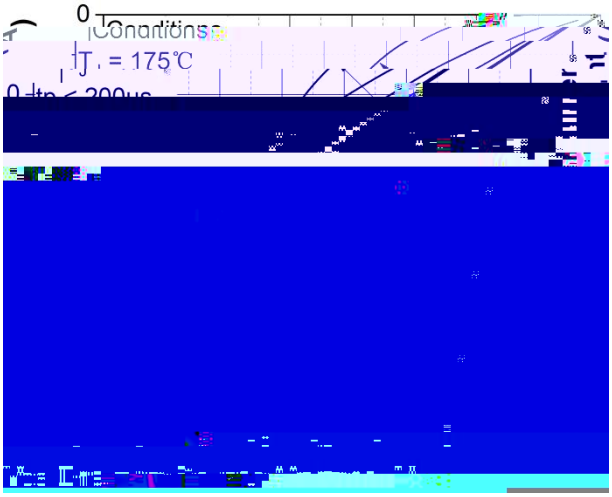


Figure 15. 3rd quadrant characteristic at T_J = 175 ºC

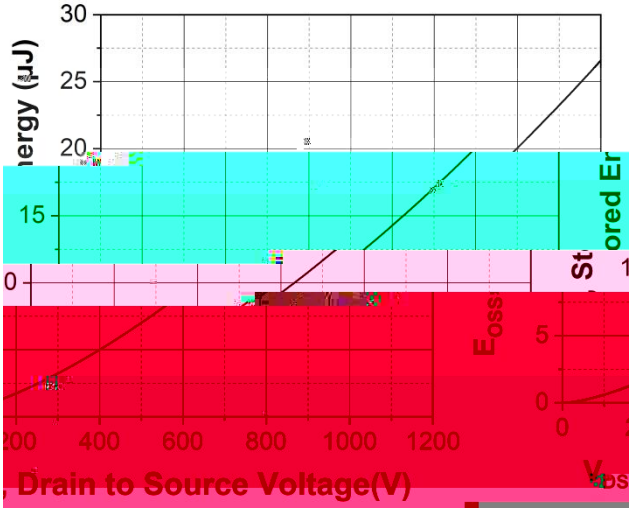


Figure 16. Output capacitor stored energy

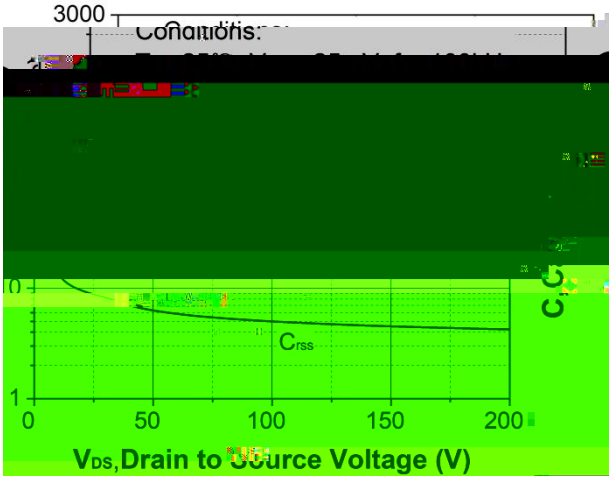


Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

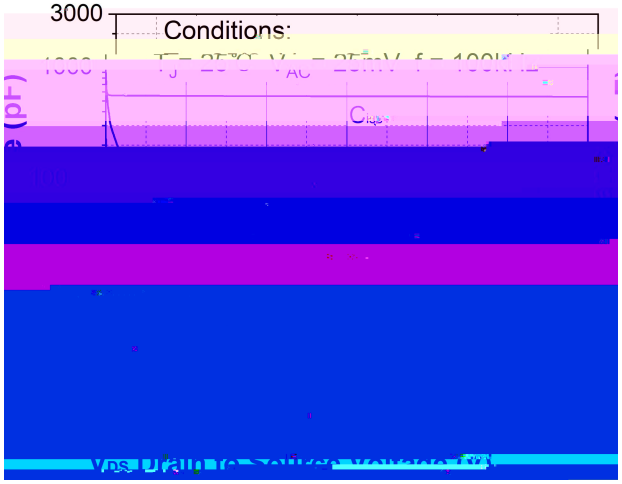


Figure 18. Capacitances vs. drain-source voltage (0 - 1200V)







Figure 19. Continuous drain current derating vs. case temperature

Figure 20. Maximum power dissipation derating vs. case temperature

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

Figure 24. Clamped inductive switching derg

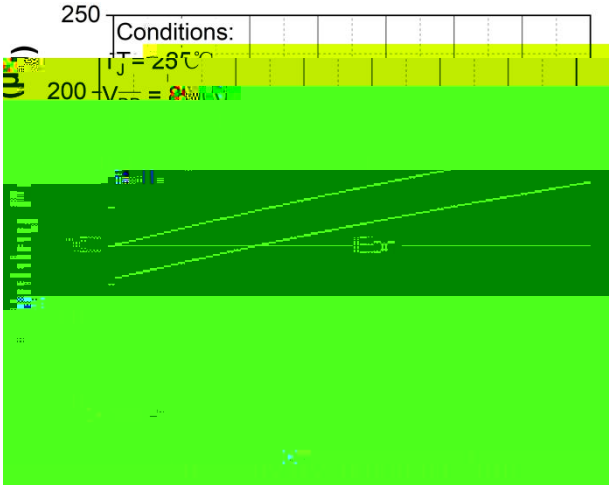


Figure 25. Clamped inductive switching energy vs. R_G (ext)

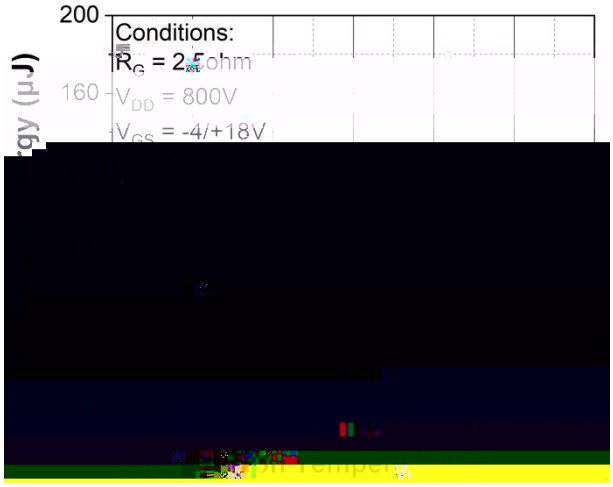


Figure 26. Clamped inductive switching energy vs. temperature

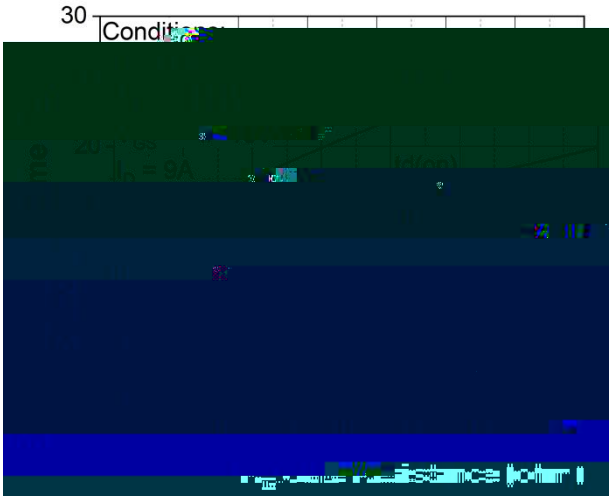
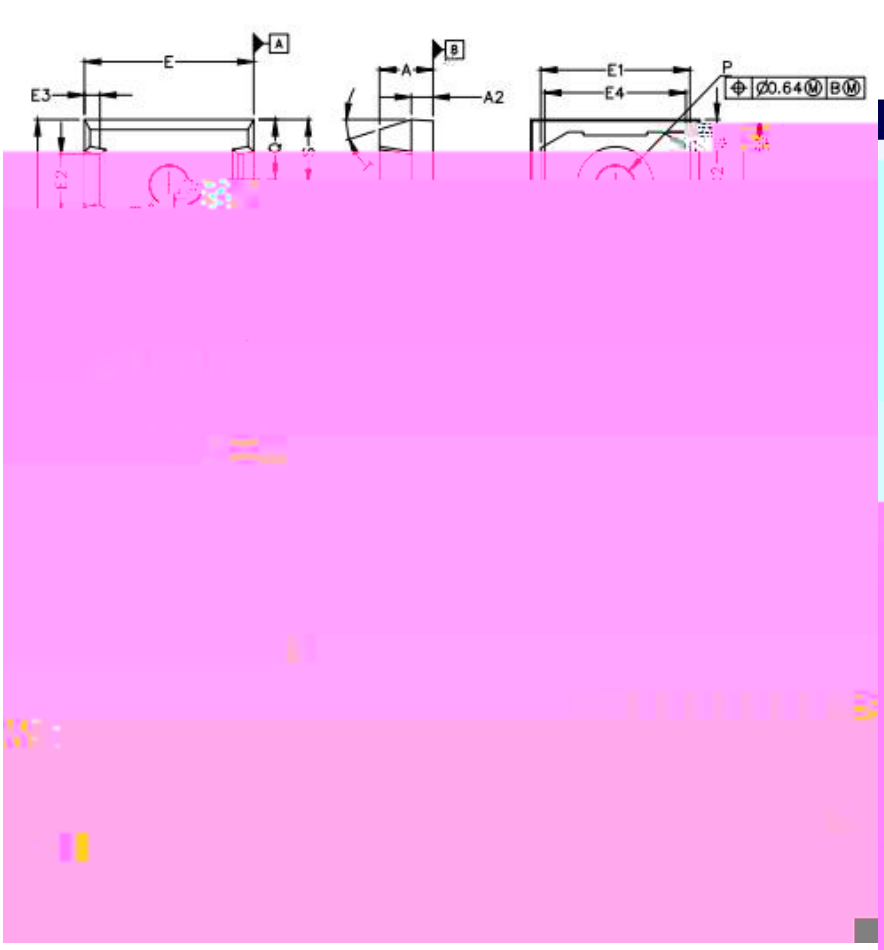


Figure 27. Switching times vs. R_G (ext)

(TO-247-4L-C)



NOTE ;
1. ALL METAL SURFACES: TIN PLATED,EXCEPT AREA OF CUT
2. DIMENSIONING & TOLERANCEING CONFIRM TO
ASME

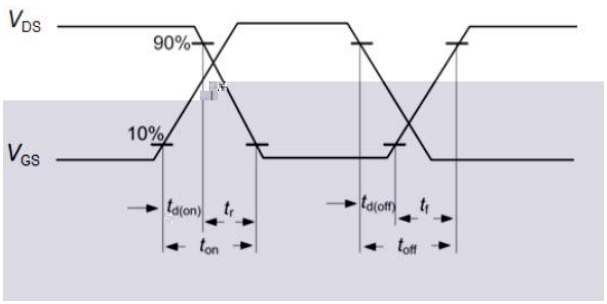


Figure A. Definition of switching times

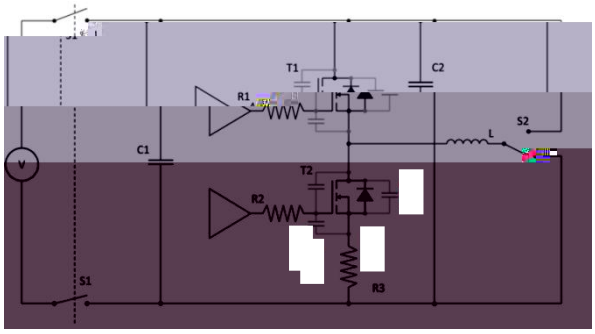


Figure B. Dynamic test circuit

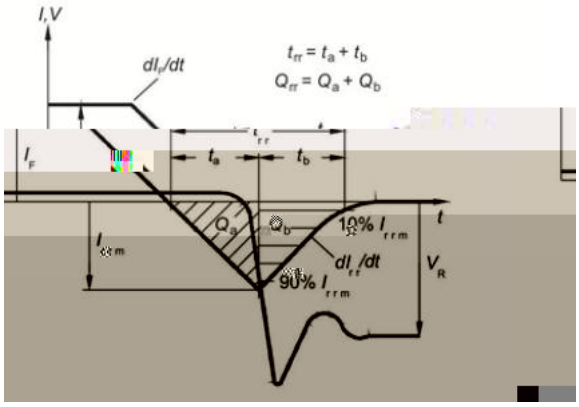


Figure C. Definition of body diode switching characteristics

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1.
The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU Directive 2011/65/ EC (RoHS2), as implemented January 2, 2013.

2.
REACh substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, please contact a Sichain representative to insure you get the most up-to-date REACh SVHC Declaration. REACh banned substance information (REACh Article 67) is also available upon request.

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