N Channel Enhancement

- High speed switching
- Very low switching losses
- IGBT-compatible driving voltage (15V for turn-on)
- 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
- Automotive Qualified (AEC-Q101)

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

- On-board charger/PFC
- EV battery chargers
- Booster/DC-DC converter n
- Switch mode power supplies

(Tc = 25°C unless otherwise specified)

V_{DS}

(Tc = 25°C unless otherwise specified)

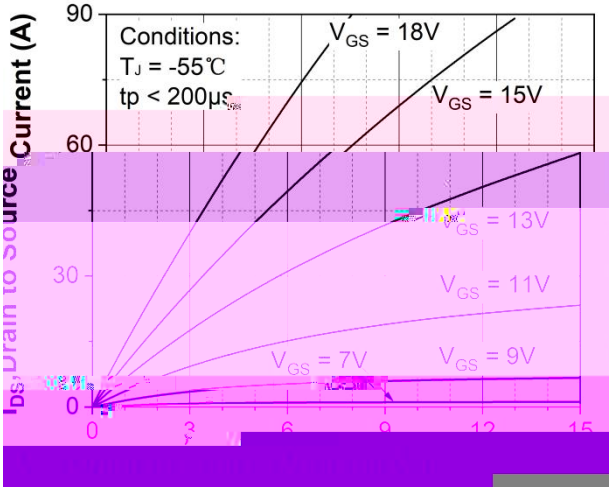

Figure 1. Output characteristics T_J = -55ºC

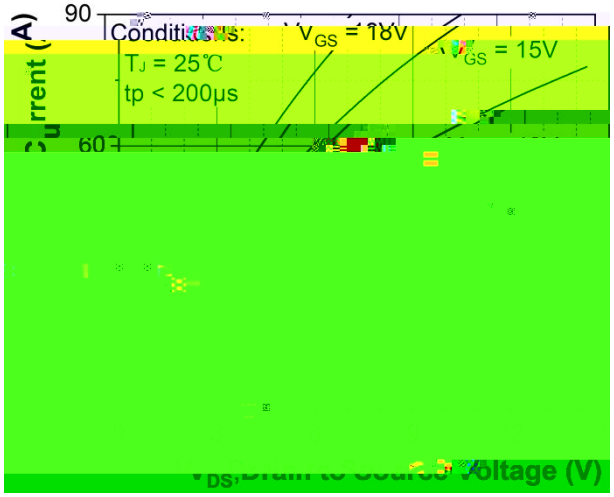

Figure 2. Output characteristics T_J = 25 ºC

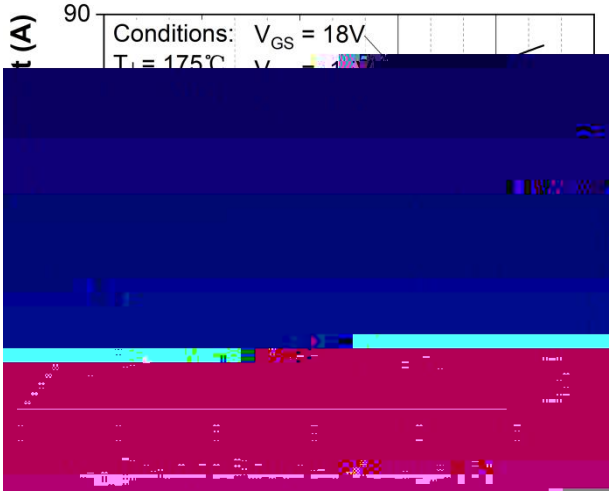

Figure 3. Output characteristics T_J = 175 ºC

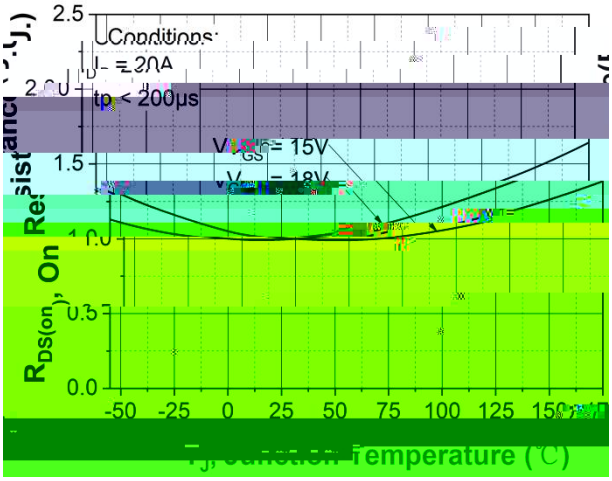

Figure 4. Normalized on-resistance vs. temperature

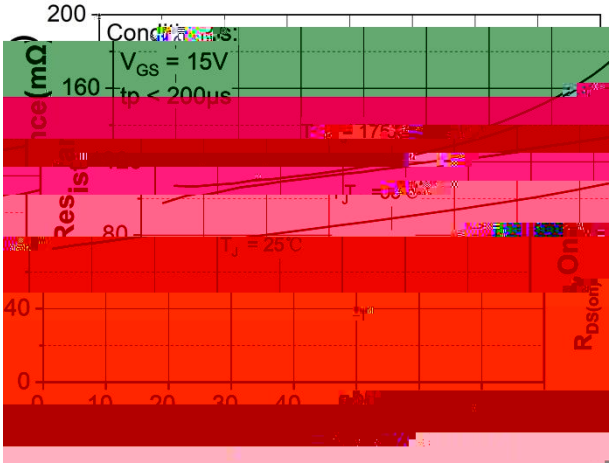

Figure 5. On-resistance vs. drain current for various temperatures

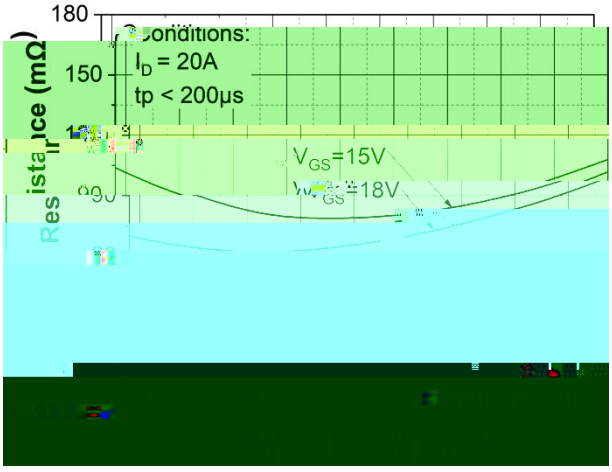

Figure 6. On-resistance vs. Temperature for various gate voltage

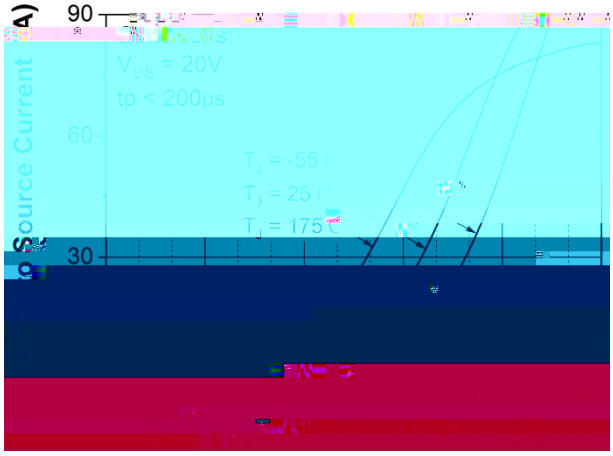

Figure 7. Transfer characteristic for various junction temperatures

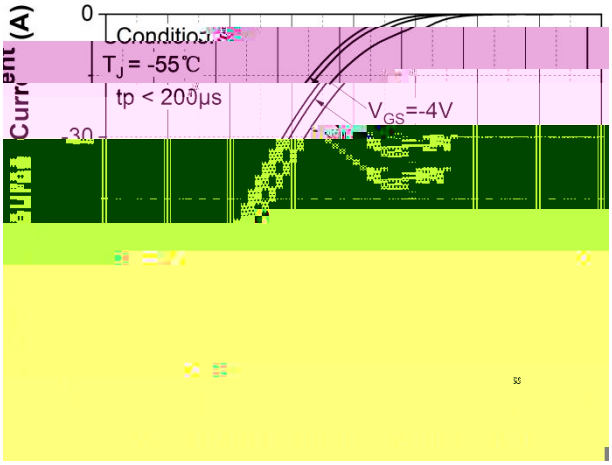

Figure 8. Body diode characteristic at T_J = -55 ºC

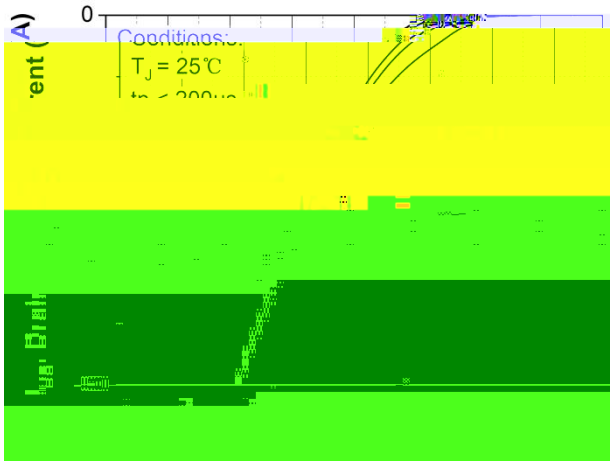

Figure 9. Body diode characteristic at T_J = 25 ºC

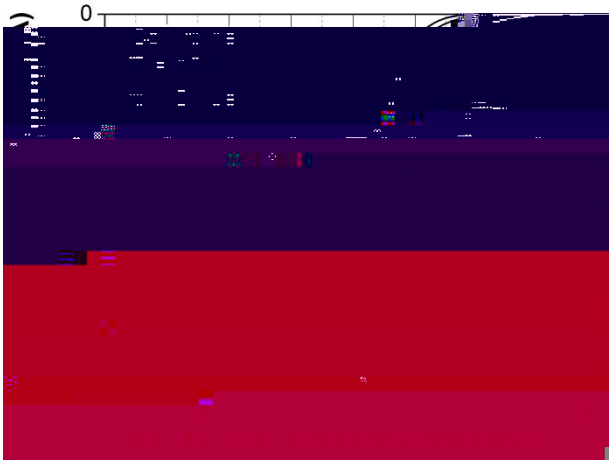

Figure 10. Body diode characteristic at T_J = 175ºC

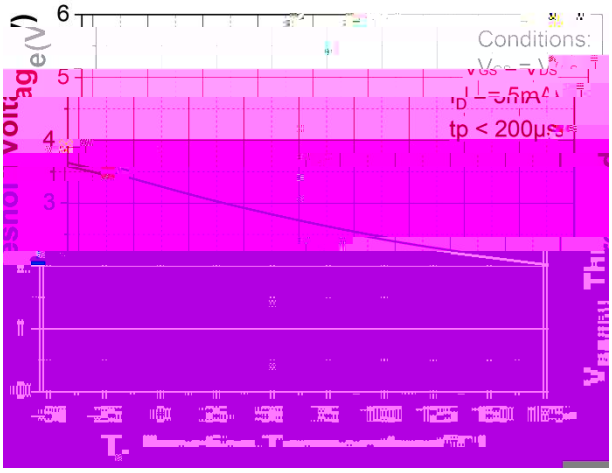

Figure 11. Threshold voltage vs. temperature

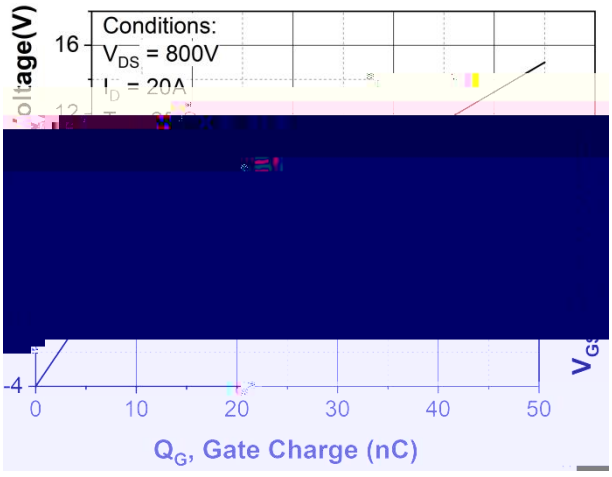

Figure 12. Gate charge characteristic

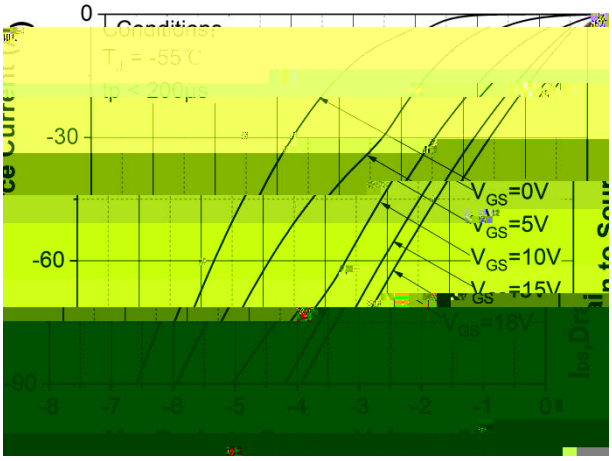

Figure 13. 3rd quadrant characteristic at T_J = -55 ºC

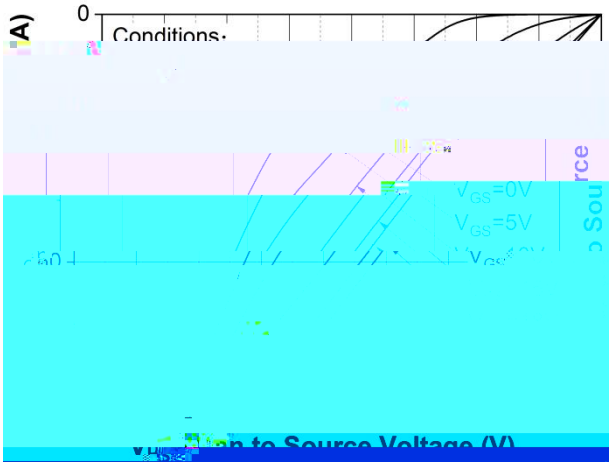

Figure 14. 3rd quadrant characteristic at T_J = 25 ºC

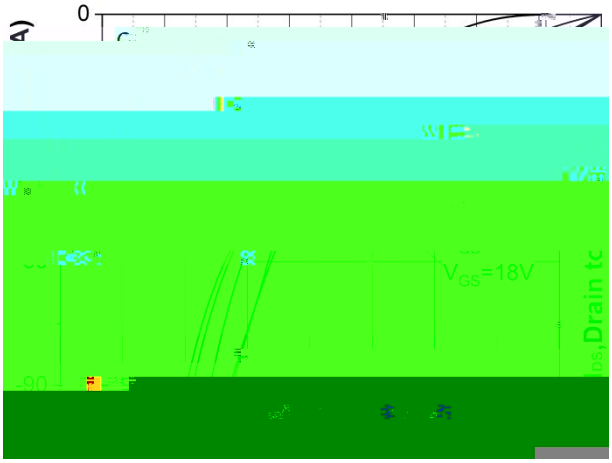

Figure 15. 3rd quadrant characteristic at T_J = 175 ºC

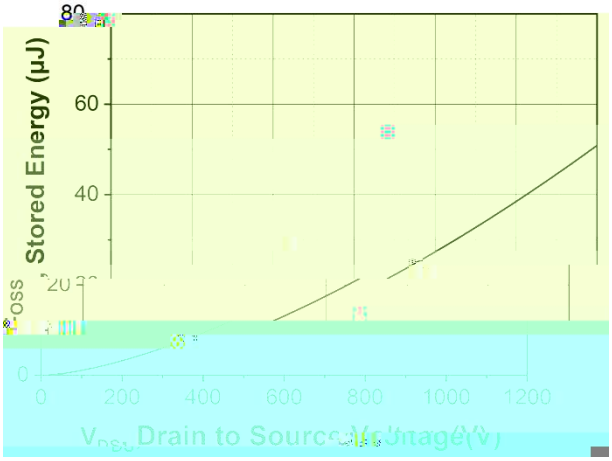

Figure 16. Output capacitor stored energy

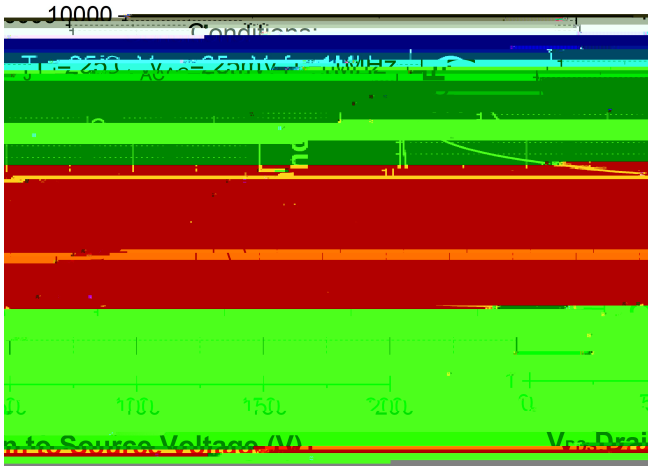

Figure 17. Capacitances vs. drain-source voltage (0 - 200V)

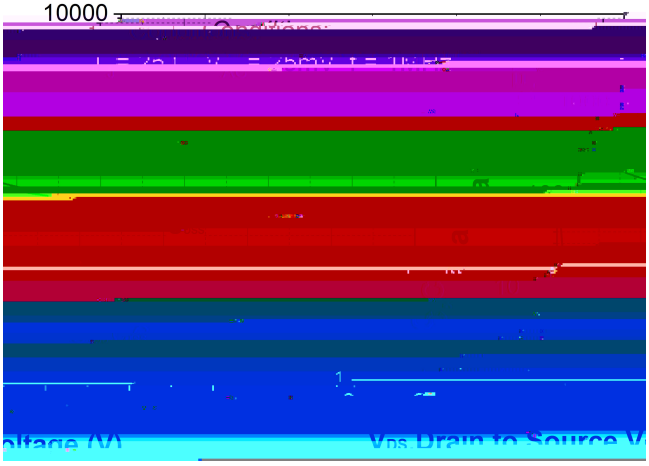

Figure 18. Capacitances vs. drain-source voltage (0 - 1200V)

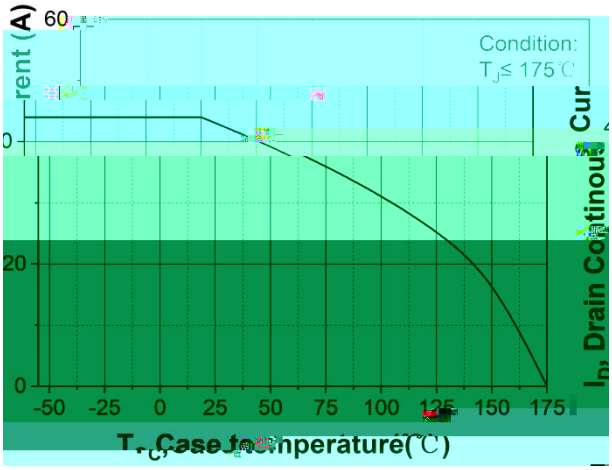

Figure 19. Continuous drain current derating vs. case temperature

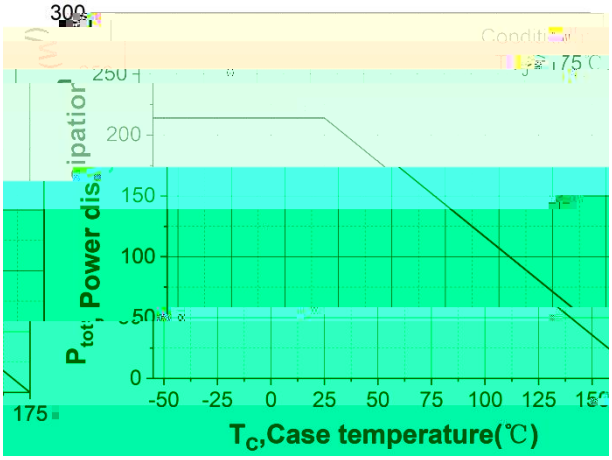

Figure 20. Maximum power dissipation derating vs. case temperature

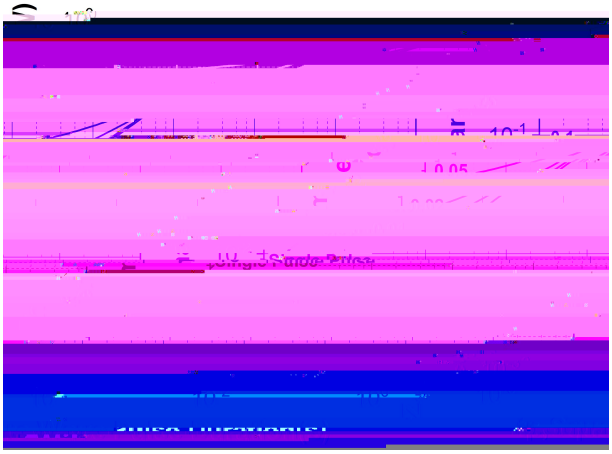

Figure 21. Transient thermal impedance (junction - case)

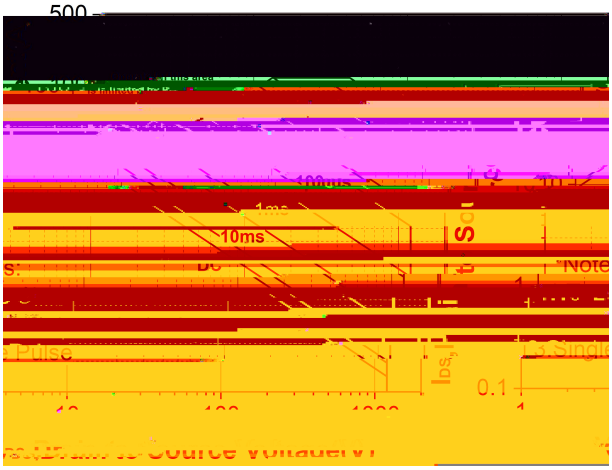

Figure 22. Safe operating area

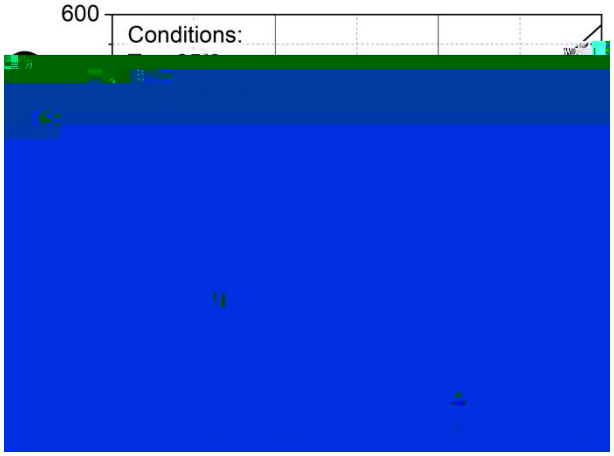

Figure 23. Clamped Inductive switching energy vs. drain current (V_{DD} = 600V)

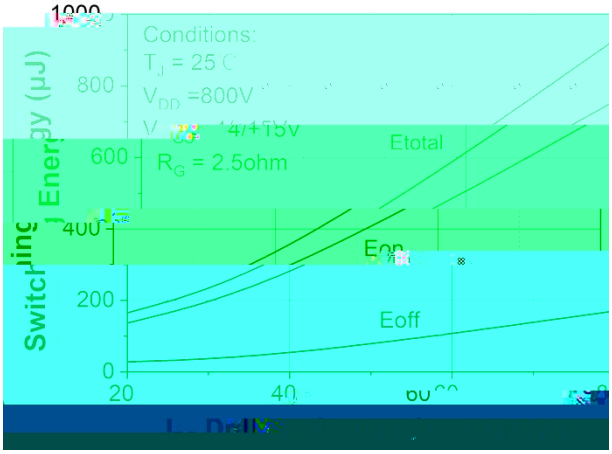

Figure 24. Clamped inductive switching energy vs. drain current (V_{DD} = 800V)

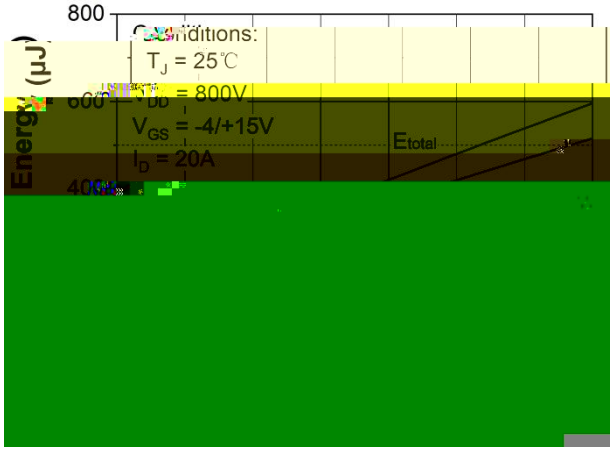

Figure 25. Clamped inductive switching energy vs. R_G(ext)

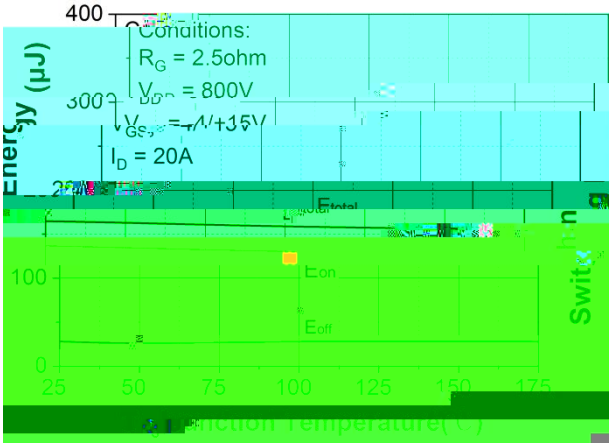

Figure 26. Reverse characteristics vs.T_J

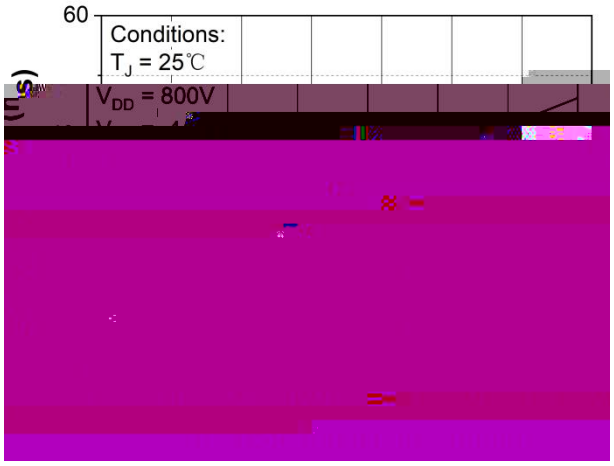

Figure 27. Switching times vs. R_G(ext)

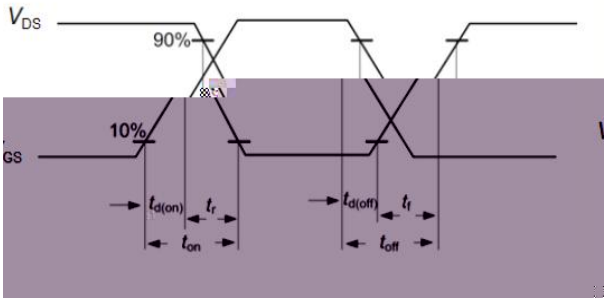

Figure A. Definition of switching times

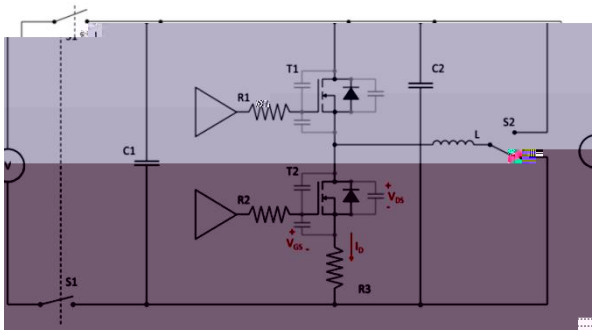

Figure B. Dynamic test circuit

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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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