







**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**

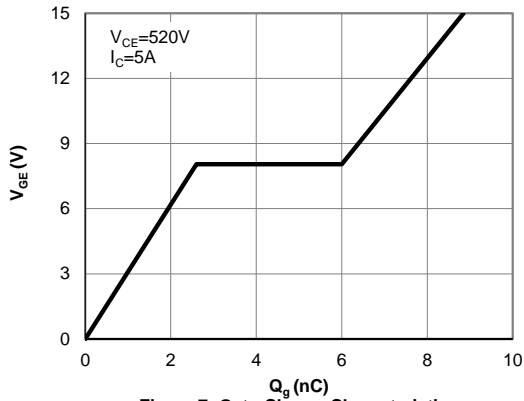


Figure 7: Gate-Charge Characteristics

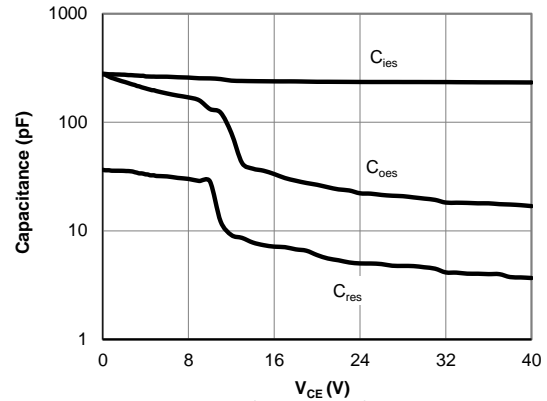


Figure 8: Capacitance Characteristic

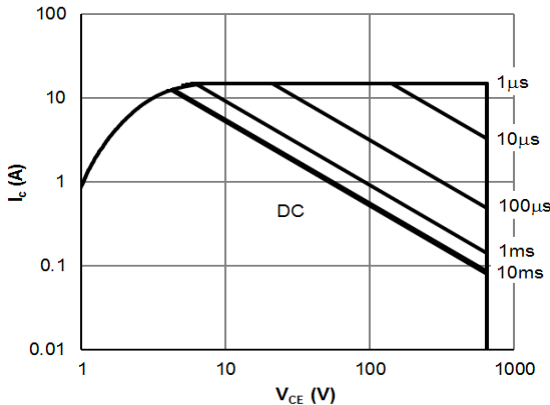


Figure 9: Forward Bias Safe Operating Area ( $T_C=25^\circ C$ ,  $V_{GE}=15V$ )

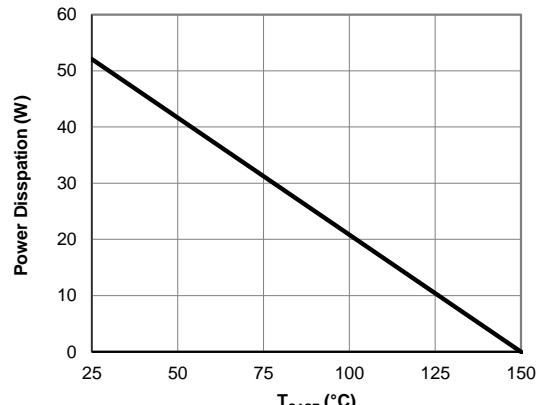


Figure 10: Power Dissipation as a Function of Case

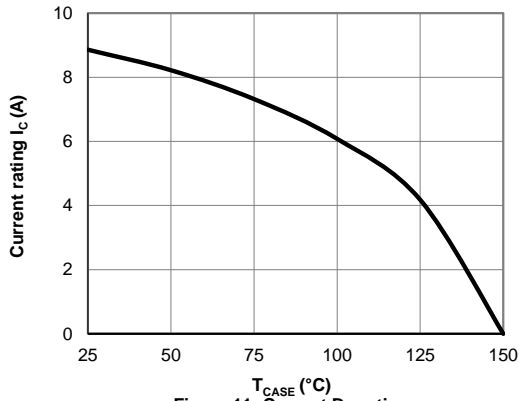


Figure 11: Current De-rating

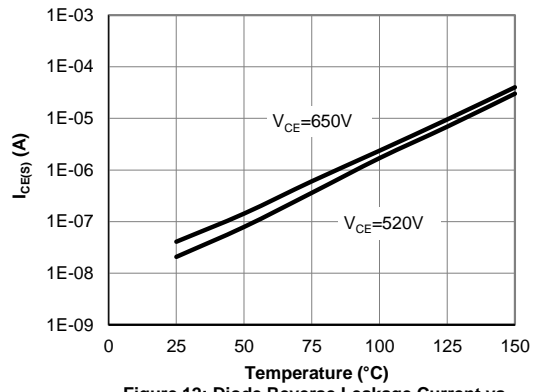
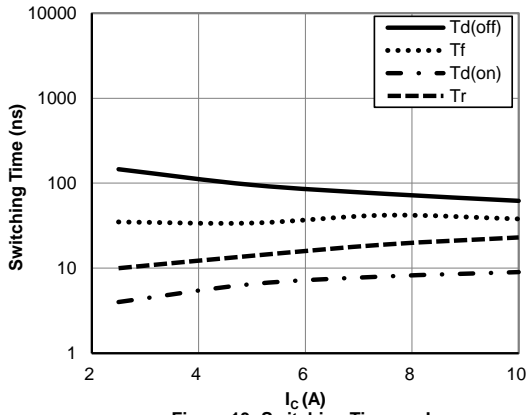
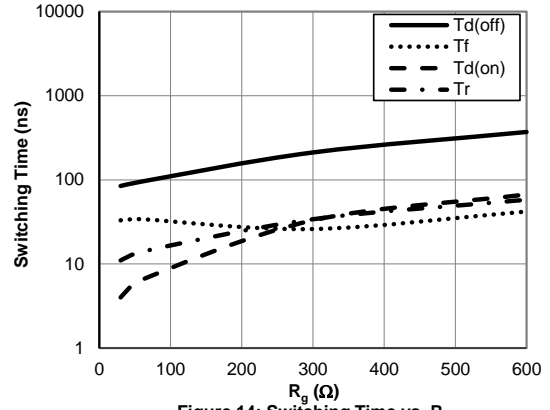


Figure 12: Diode Reverse Leakage Current vs. Junction Temperature

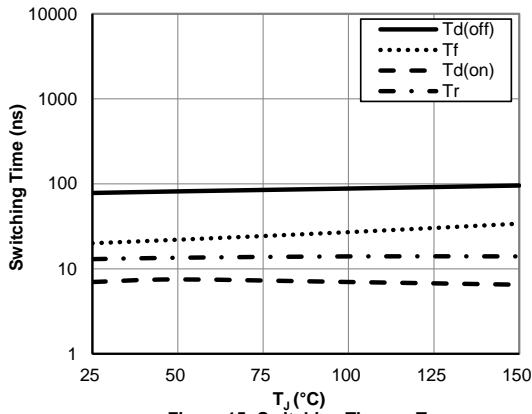
**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**



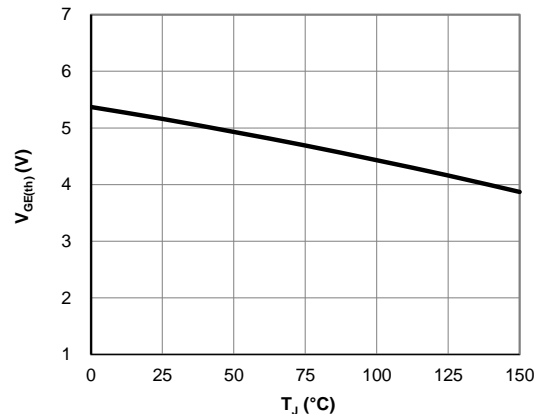
**Figure 13: Switching Time vs.  $I_C$**   
( $T_J=150^\circ\text{C}$ ,  $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $R_g=60\Omega$ )



**Figure 14: Switching Time vs.  $R_g$**   
( $T_J=150^\circ\text{C}$ ,  $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $I_C=5\text{A}$ )

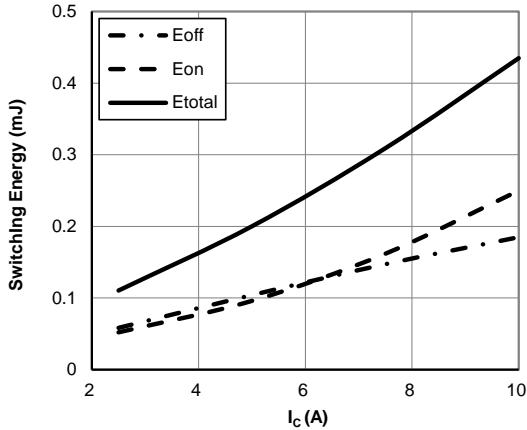


**Figure 15: Switching Time vs.  $T_J$**   
( $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $I_C=5\text{A}$ ,  $R_g=60\Omega$ )

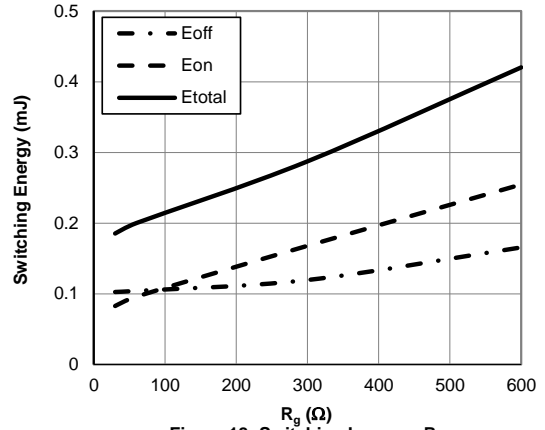


**Figure 16:  $V_{GE(th)}$  vs.  $T_J$**

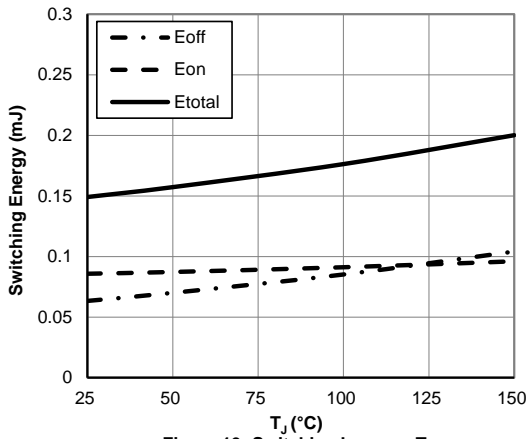
**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**



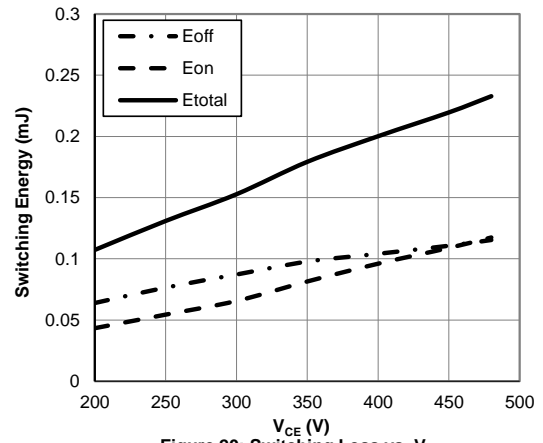
**Figure 17: Switching Loss vs.  $I_C$**   
( $T_J=150^\circ\text{C}$ ,  $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $R_g=60\Omega$ )



**Figure 18: Switching Loss vs.  $R_g$**   
( $T_J=150^\circ\text{C}$ ,  $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $I_C=5\text{A}$ )

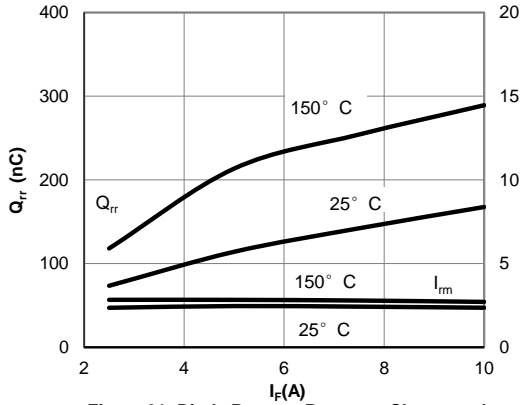


**Figure 19: Switching Loss vs.  $T_J$**   
( $V_{GE}=15\text{V}$ ,  $V_{CE}=400\text{V}$ ,  $I_C=5\text{A}$ ,  $R_g=60\Omega$ )

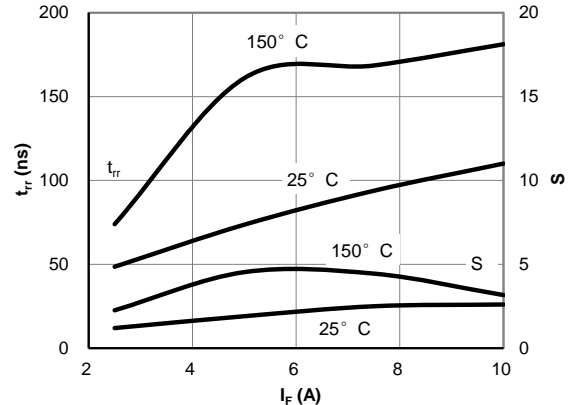


**Figure 20: Switching Loss vs.  $V_{CE}$**   
( $T_J=150^\circ\text{C}$ ,  $V_{GE}=15\text{V}$ ,  $I_C=5\text{A}$ ,  $R_g=60\Omega$ )

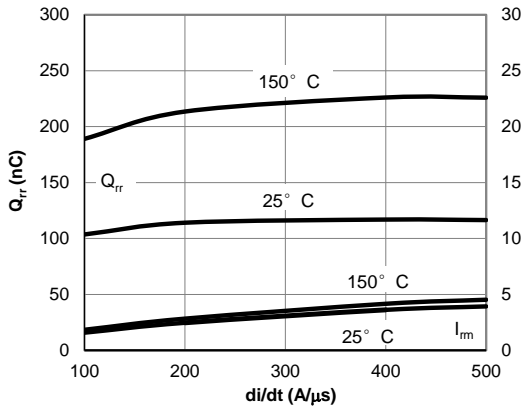
**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**



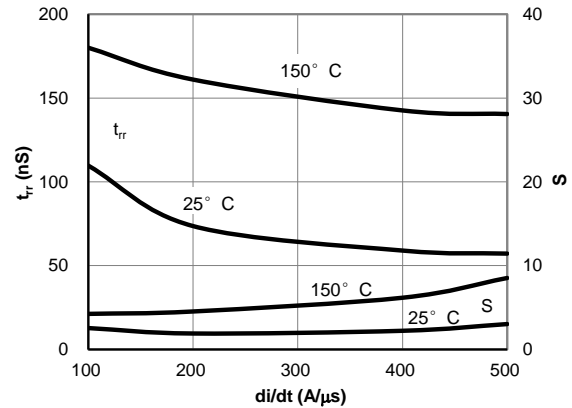
**Figure 21: Diode Reverse Recovery Charge and Peak Current vs. Conduction Current**  
( $V_{GE}=15V$ ,  $V_{CE}=400V$ ,  $di/dt=200A/\mu s$ )



**Figure 22: Diode Reverse Recovery Time and Softness Factor vs. Conduction Current**  
( $V_{GE}=15V$ ,  $V_{CE}=400V$ ,  $di/dt=200A/\mu s$ )

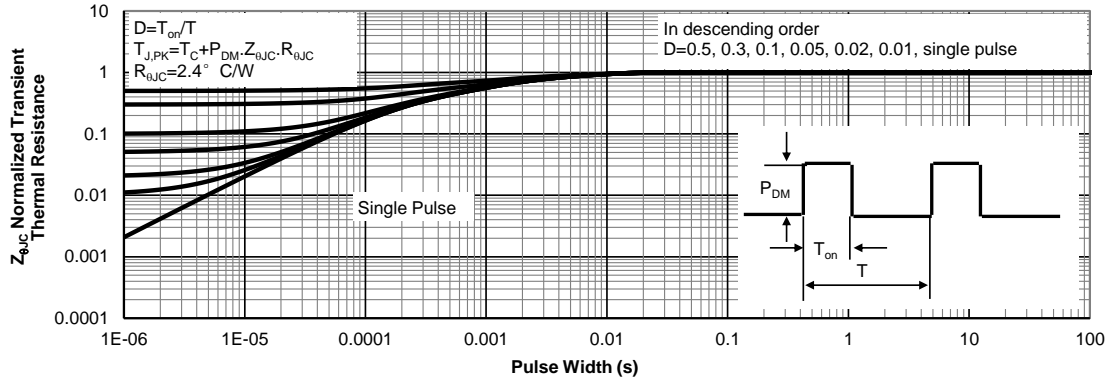


**Figure 23: Diode Reverse Recovery Charge and Peak Current vs. di/dt**  
( $V_{GE}=15V$ ,  $V_{CE}=400V$ ,  $I_F=5A$ )

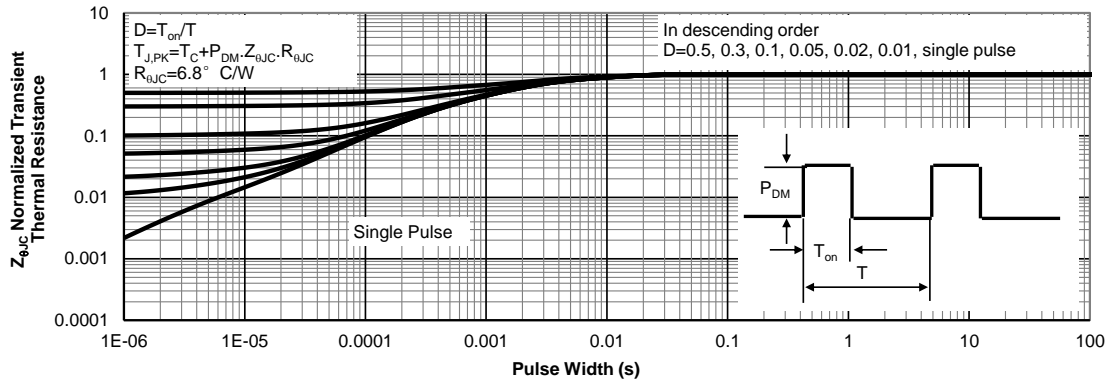


**Figure 24: Diode Reverse Recovery Time and Softness Factor vs. di/dt**  
( $V_{GE}=15V$ ,  $V_{CE}=400V$ ,  $I_F=5A$ )

**TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS**



**Figure 25: Normalized Maximum Transient Thermal Impedance for IGBT**



**Figure 26: Normalized Maximum Transient Thermal Impedance for Diode**



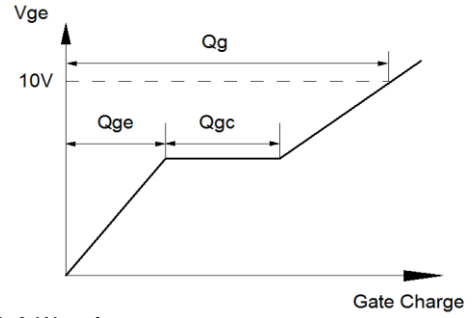
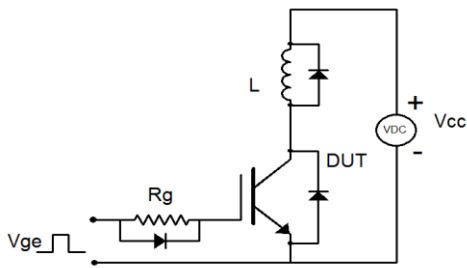


Figure A: Gate Charge Test Circuit & Waveforms

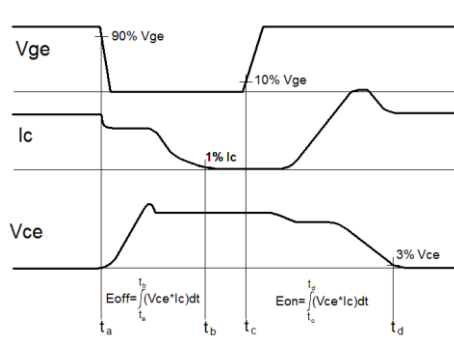
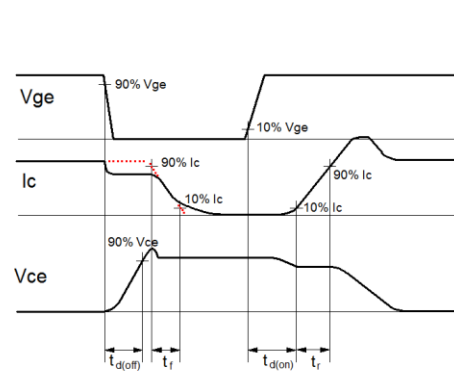
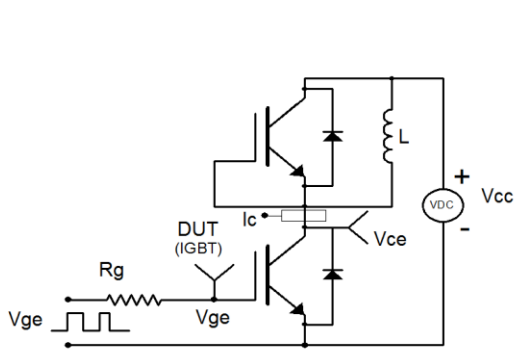


Figure B: Inductive Switching Test Circuit & Waveforms

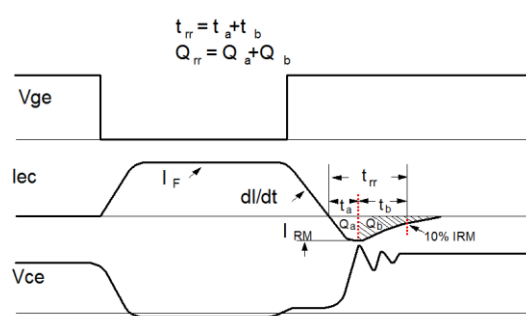
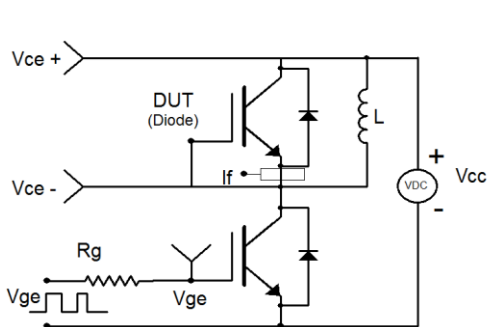


Figure C: Diode Recovery Test Circuit & Waveforms