THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Case (Note 3)	$R_{\theta JC}$	0.57	C/W

ELECTRICAL CHARACTERISTICS (T_J = 25 C unless otherwise specified) (continued)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
SWITCHING CHARACTERISTICS						
Turn On Delay Time	$t_{d(ON)}$	V_{GS} = 3/18 V, I_D = 20 A, V_{DD} = 400 V, R_G = 4.7 Ω, T_J = 175 C (Note 4, 5)		9.6		ns
Turn Off Delay Time	$t_{d(OFF)}$			41		
Rise Time	t_r			14		
Fall Time	t_f			12		
Turn On Switching Loss	E_{ON}			51		μJ
Turn Off Switching Loss	E_{OFF}			45		
Total Switching Loss	E_{TOT}			96		
SOURCE−TO−DRAIN DIODE CHARACTERISTICS						
Forward Diode Voltage	V_{SD}	I_{SD} = 20 A, V_{GS} = 3 V, T_J = 25 C		4.5	6.0	V
		I_{SD} = 20 A, V_{GS} = 3 V, T_J = 175 C (Note 5)		4.2		
Reverse Recovery Time	t_{RR}	V_{GS} = 3 V, I_S = 20 A, dI/dt = 1000 A/μs, V_{DS} = 400 V, T_J = 25 C (Note 5)		19		ns
Charge time	t_a			11		
Discharge time	t_b			8		
Reverse Recovery Charge	Q_{RR}			97		nC
Reverse Recovery Energy	E_{REC}			8.7		μJ
Peak Reverse Recovery Current	I_{RRM}			11		A

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

4. EON/EOFF result is with body diode.
5. Defined by design, not subject to production test.

TYPICAL CHARACTERISTICS

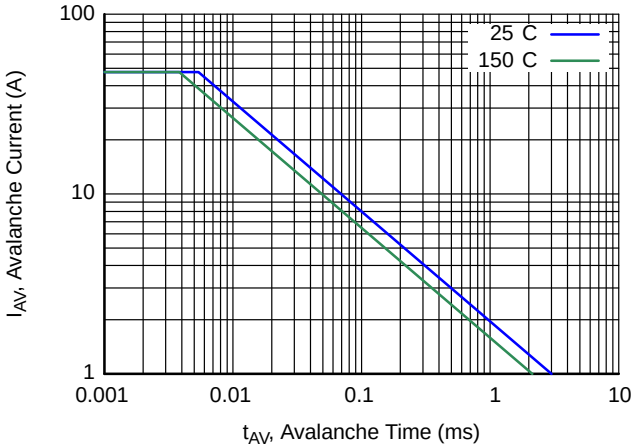


Figure 13. Avalanche Current vs. Pulse Time (UIS)

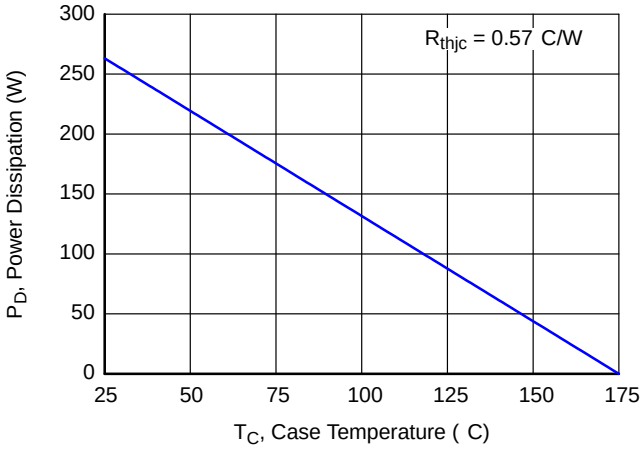


Figure 14. Maximum Power Dissipation vs. Case Temperature

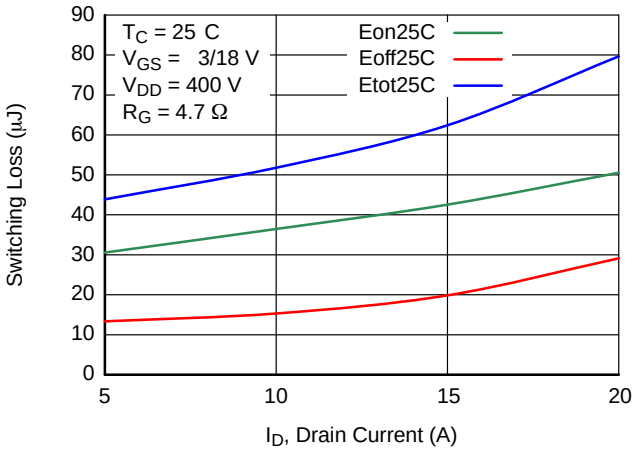


Figure 15. Inductive Switching Loss vs. Drain Current

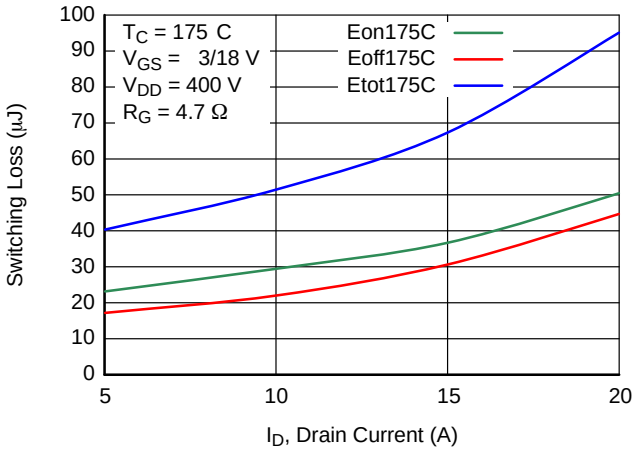


Figure 16. Inductive Switching Loss vs. Drain Current

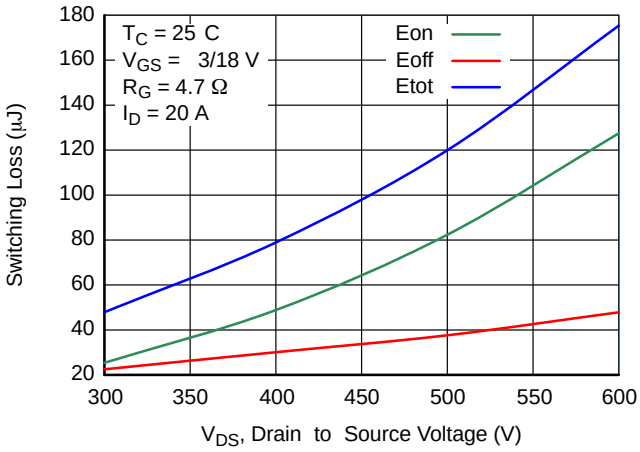


Figure 17. Inductive Switching Loss vs. Drain Voltage

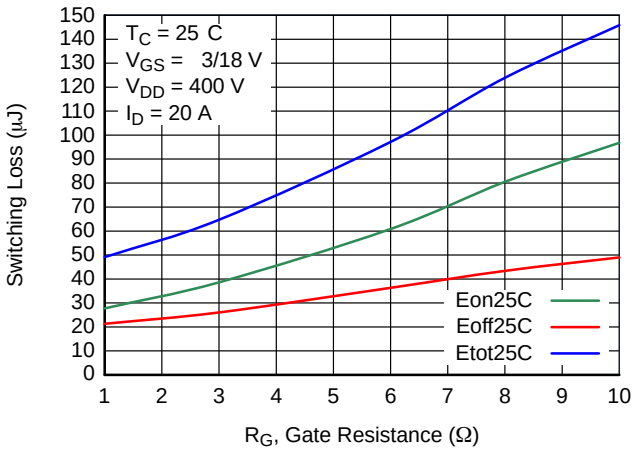
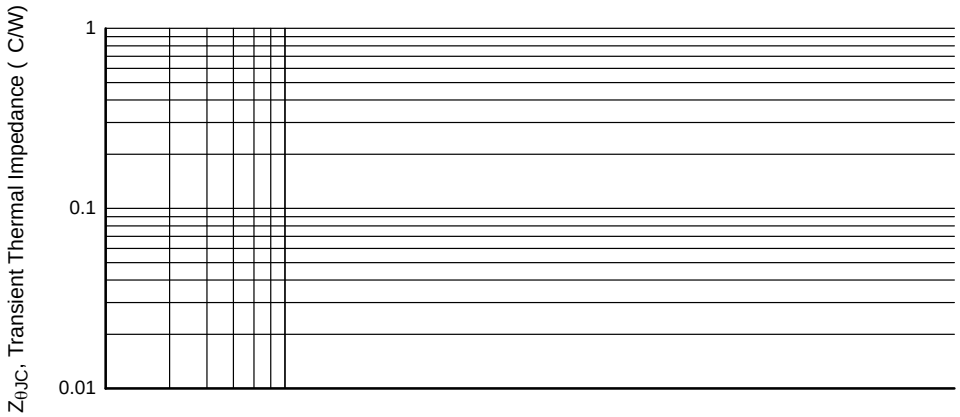


Figure 18. Inductive Switching Loss vs. Gate Resistance

TYPICAL CHARACTERISTICS

R_G, Gate Resistance (Ω)

Figure 19. Inductive Switching Loss vs. Gate Resistance



t, Rectangular Pulse Duration (s)

Figure 20. Thermal Response Characteristics

D^{2}PAK7 (TO−263−7L HV)
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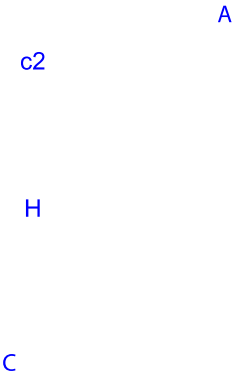

GENERIC
MARKING DIAGRAM*

XXXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.