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Features

- Typ. $R_{DS(on)}$ = 65 mΩ @ V_{GS} = 18 V
- Ultra Low Gate Charge ($Q_{G(tot)}$ = 57 nC)
- High Speed Switching with Low Capacitance (C_{oss} = 57 pF)
- 100% Avalanche Tested
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb−Free 2LI (on second level interconnection)

Typical Applications

- Solar Inverters
- Electric Vehicle Charging Stations
- UPS (Uninterruptible Power Supplies)
- Energy Storage Systems
- SMPS (Switch Mode Power Supplies)

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

Parameter			Symbol	Value	Unit
Drain−to−Source Voltage			V_{DSS}	1200	V
Gate−to−Source Voltage			V_{GS}	−10/+22	V
Continuous Drain Current (Notes 2, 3)	Steady State	T_C = 25°C			

THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction−to−Case − Steady State (Note 2)	$R_{\theta JC}$	0.87	°C/W
Junction−to−Ambient − Steady State (Notes 1, 2)	$R_{\theta JA}$	40	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Value	Unit
Operation Values of Gate−to−Source Voltage	V_{GSop}	−5…−3 +18	V

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
OFF−STATE CHARACTERISTICS						
Drain−to−Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 1 mA	1200	−	−	V
Drain−to−Source Breakdown Voltage Temperature Coefficient	$V_{(BR)DSS}/T_J$	I_D = 1 mA, referenced to 25°C (Note 7)	−	0.3	−	V/°C
Zero Gate Voltage Drain Current						

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
SOURCE−DRAIN DIODE CHARACTERISTICS						
Continuous Source−Drain Diode Forward Current (Note 2)	I_{SD}	V_{GS} = −3 V, T_C = 25°C (Note 7)	−	−	33	A
Pulsed Source−Drain Diode Forward Current (Note 4)	I_{SDM}		−	−	93	
Forward Diode Voltage	V_{SD}	V_{GS} = −3 V, I_{SD} = 15 A, T_J = 25°C	−	4.7	−	V
Reverse Recovery Time	t_{RR}	V_{GS} = −3/18 V, I_{SD} = 15 A, dI_S/dt = 1000 A/μs, V_{DS} = 800 V (Note 7)	−	15	−	ns
Reverse Recovery Charge	Q_{RR}		−	63	−	nC
Reverse Recovery Energy	E_{REC}		−	5.7	−	μJ
Peak Reverse Recovery Current	I_{RRM}		−	8.6	−	A
Charge time	t_A		−	8.3	−	ns
Discharge time	t_B		−	6.3	−	ns

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.

6. E_{ON}/E_{OFF} result is with body diode
7. Defined by design, not subject to production test.

TYPICAL CHARACTERISTICS

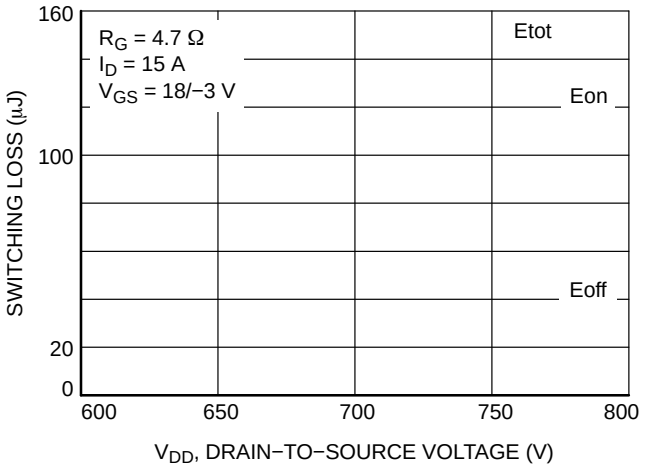


Figure 7. Switching Loss vs. Drain−to−Source Voltage

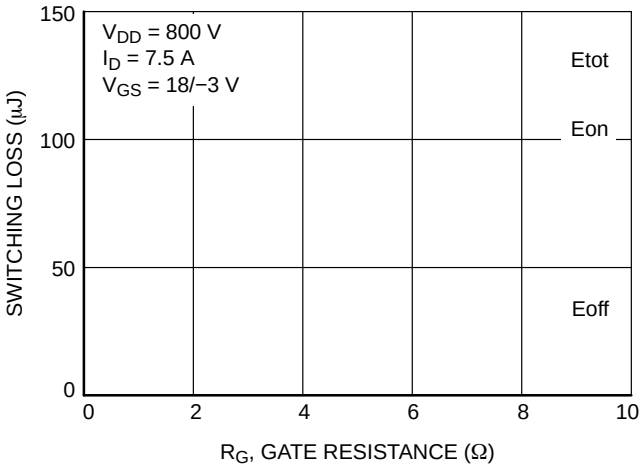
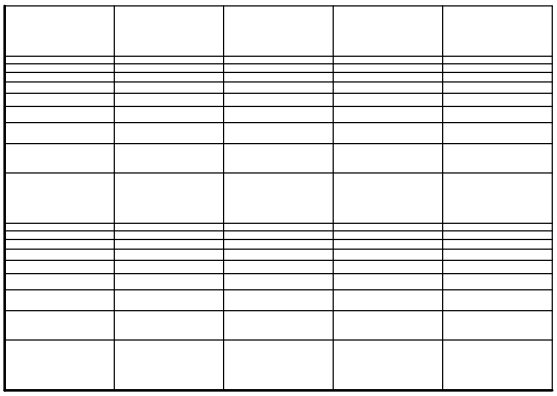


Figure 8. Switching Loss vs. Gate Resistance



V_{SD}

Figure 9. Reverse Drain Current vs. Body Diode Forward Voltage

Figure 10. Gate−to−Source Voltage vs. Total Charge

Figure 11. Capacitance vs. Drain−to−Source Voltage

Figure 12. Unclamped Inductive Switching Capability

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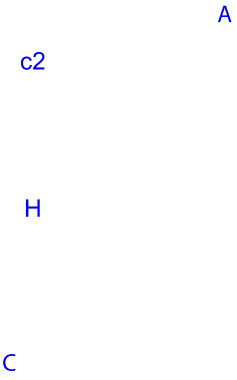

GENERIC
MARKING DIAGRAM*

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.