

JMSL03011G3L

Features

- Excellent $R_{DS(ON)}$ and Low Gate Charge
- 100% UIS Tested
- 100% Vds Tested
- Halogen-free; RoHS-compliant

Applications

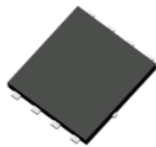
- Load Switch
- PWM Application
- Power Management

Product Summary

Parameters	Value	Unit
V_{DSS}	30	V
$V_{GS(th_Typ)}$	1.5	V
$I_D(@V_{GS}=10V)$	410	A
$R_{DS(ON_Typ)}(@V_{GS}=10V)$	0.6	mΩ
$R_{DS(ON_Typ)}(@V_{GS}=4.5V)$	1.1	mΩ



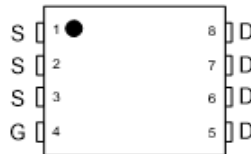
Top View



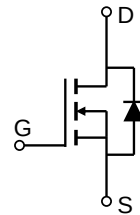
Bottom View



PDFN5X6-8L



Pin Assignment



Schematic Diagram

Ordering Information

Device	Marking	MSL	Form	Package	Reel(pcs)	Per Carton (pcs)
JMSL03011G3L-13	SL030113L	1	Tape&Reel	PDFN5x6-8L	5000	50000

Absolute Maximum Ratings (@ $T_C = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-to-Source Voltage	30	V
V_{GS}	Gate-to-Source Voltage	+20/-16	V
I_D	Continuous Drain Current	$T_C = 25^\circ\text{C}$ 410 $T_C = 100^\circ\text{C}$ 259	A
I_{DM}	Pulsed Drain Current ⁽¹⁾	Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	800	mJ
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$ 205 $T_C = 100^\circ\text{C}$ 82	W
T_J, T_{STG}	Junction & Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Max	Unit
R	Thermal Resistance, Junction to Ambient ⁽³⁾	41	$^\circ\text{C/W}$
R	Thermal Resistance, Junction to Case	0.6	

Electrical Characteristics (T_J = 25°C unless otherwise specified)

Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics					
V _{(BR)DSS}		30	-	-	V
I _{DSS}		-	-	1.0	μA
I _{GSS}		-	-	±100	n

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Typical Performance Characteristics

Figure 1: Power De-rating

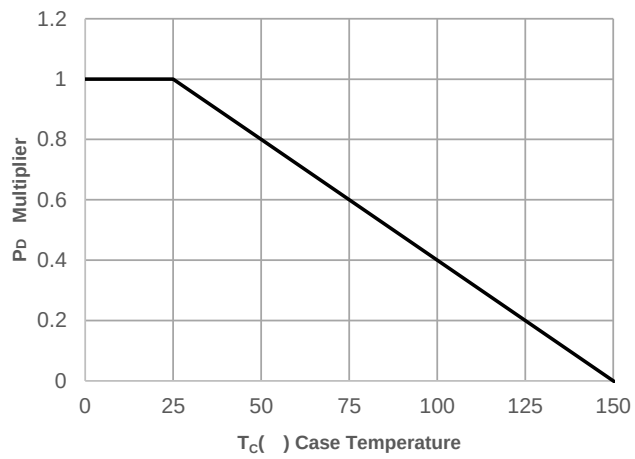
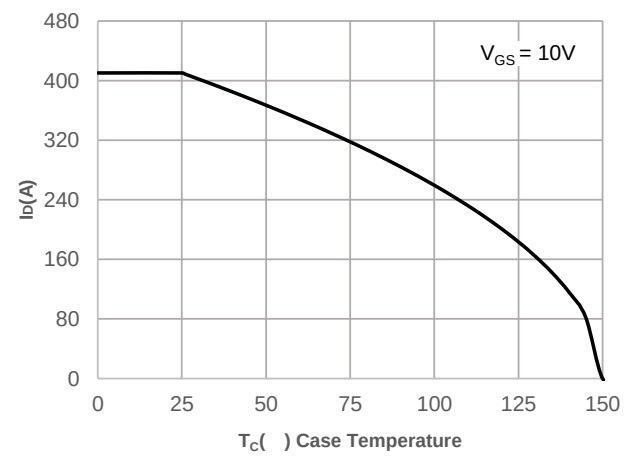
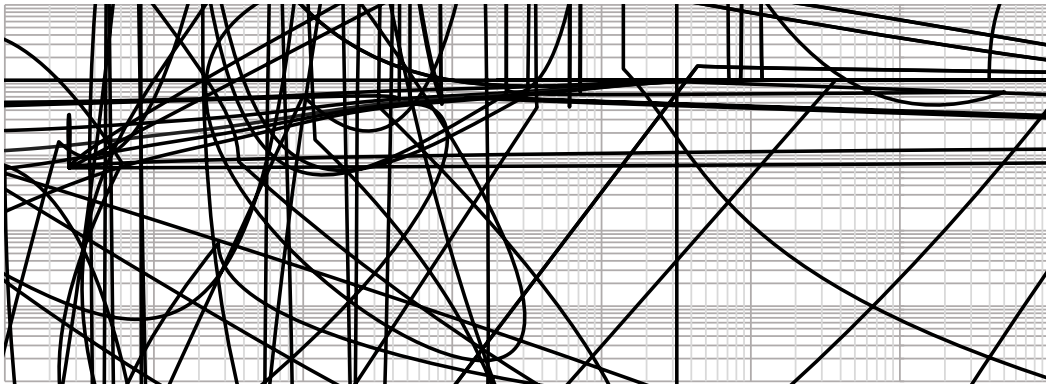
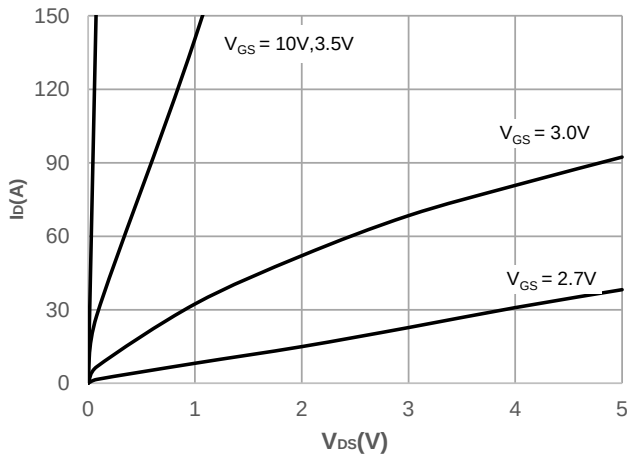
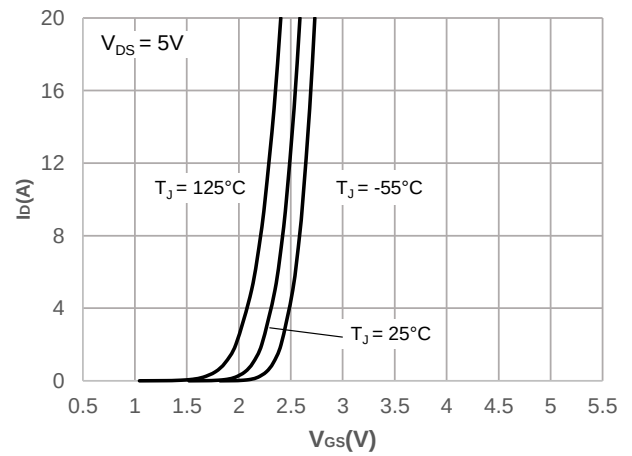
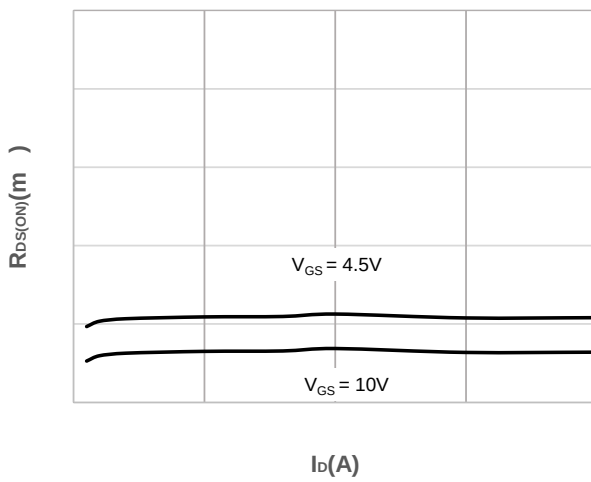
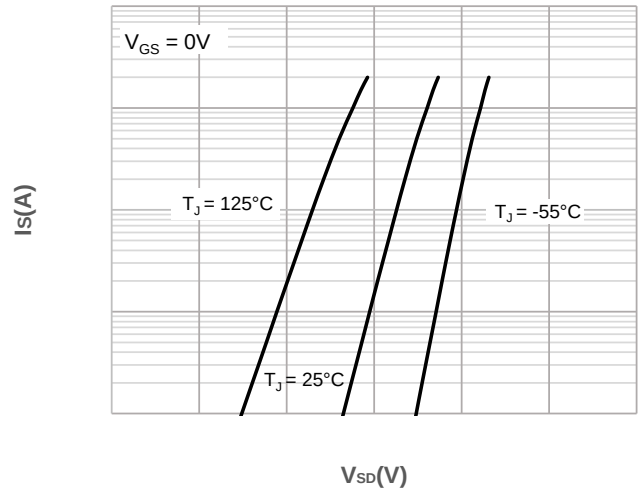
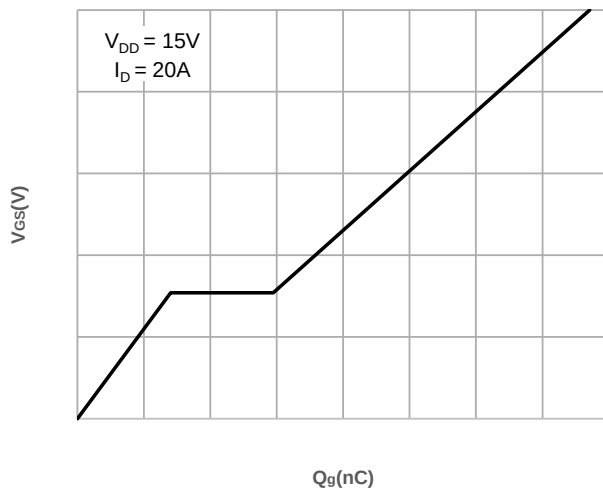
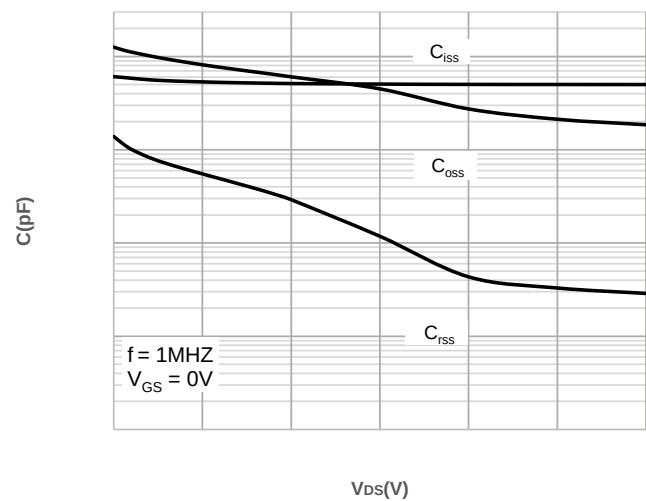


Figure 2: Current De-rating



Typical Performance Characteristics

Figure 5: Output Characteristics

Figure 6: Typical Transfer Characteristics

Figure 7: On-resistance vs. Drain Current

Figure 8: Body Diode Characteristics

Figure 9: Gate Charge Characteristics

Figure 10: Capacitance Characteristics


Test Circuit

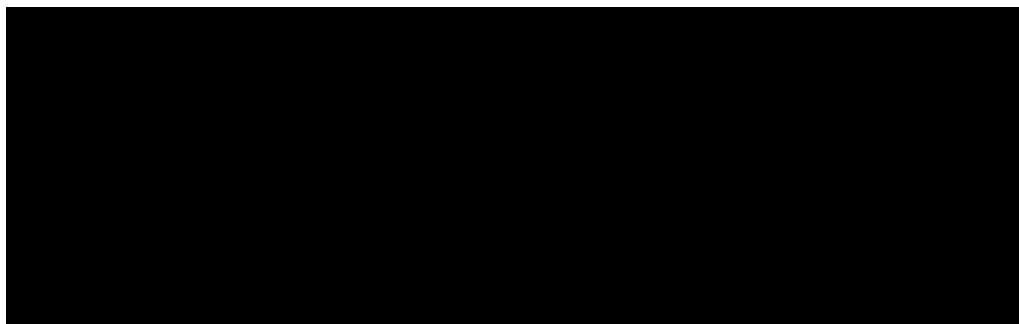


Figure 1: Gate Charge Test Circuit & Waveform

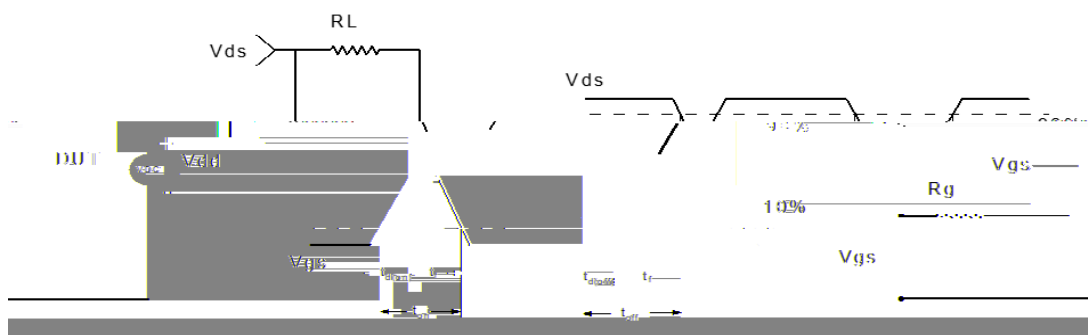


Figure 2: Resistive Switching Test Circuit & Waveform

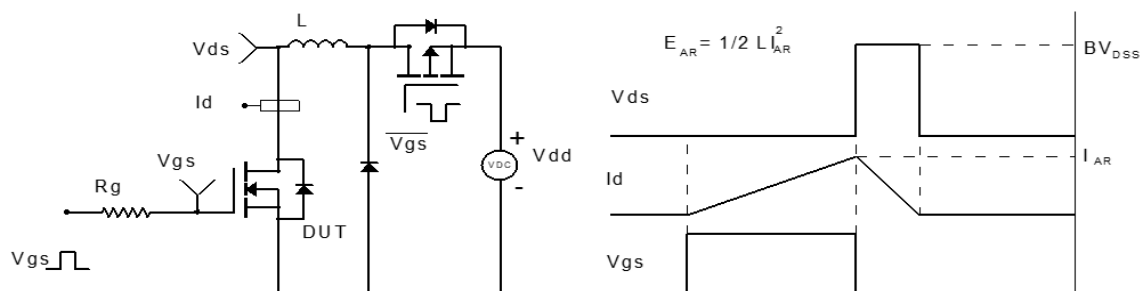


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

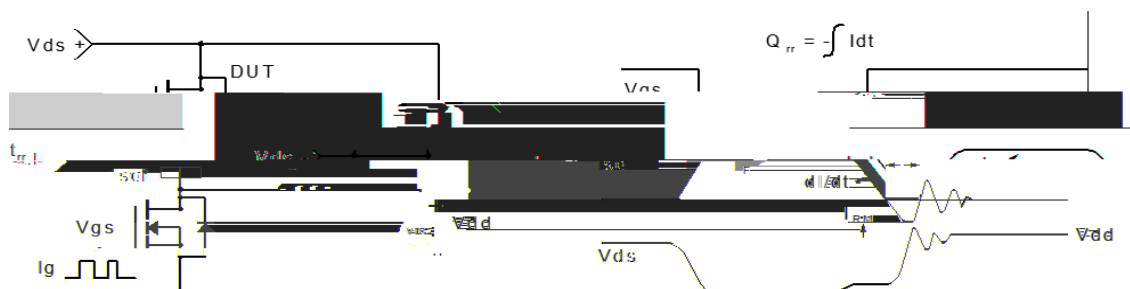


Figure 4: Diode Recovery Test Circuit & Waveform

