



## JMSL1018PP

### Features

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

### Applications

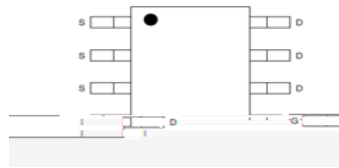
- Load Switch
- PWM Application
- Power Management

### Product Summary

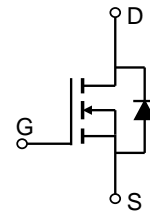
Parameters	Value	Unit
$V_{DSS}$	100	V
$V_{GS(th\_Typ)}$	1.7	V
$I_D(@V_{GS}=10V)$	8.4	A
$R_{DS(ON\_Typ)}(@V_{GS}=10V)$	14.7	mΩ
$R_{DS(ON\_Typ)}(@V_{GS}=4.5V)$	22.2	mΩ



SOP-8



Pin Assignment



Schematic Diagram

### Ordering Information

Device	Marking	MSL	Form	Package	Reel(pcs)	Per Carton (pcs)
JMSL1018PP-13	SL1018P	3	Tape&Reel	SOP-8	4000	48000

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

Symbol	Parameter	Value	Unit
$V_{DS}$	Drain-to-Source Voltage	100	V
$V_{GS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	$T_A = 25^\circ\text{C}$	8.4
		$T_A = 100^\circ\text{C}$	5.3
$I_{DM}$	Pulsed Drain Current <sup>(1)</sup>	Refer to Fig.4	A
$E_{AS}$	Single Pulsed Avalanche Energy <sup>(2)</sup>	74	mJ
$P_D$	Power Dissipation	$T_A = 25^\circ\text{C}$	2.5
		$T_A = 100^\circ\text{C}$	1.0
$T_{J\_STG}$	Junction & Storage Temperature Range	-55 to 150	$^\circ\text{C}$

### Thermal Characteristics

Symbol	Parameter	Max	Unit
R	Thermal Resistance, Junction to Ambient <sup>(3)</sup>	50	$^\circ\text{C/W}$



## Electrical Characteristics (T<sub>J</sub> = 25°C unless otherwise specified)

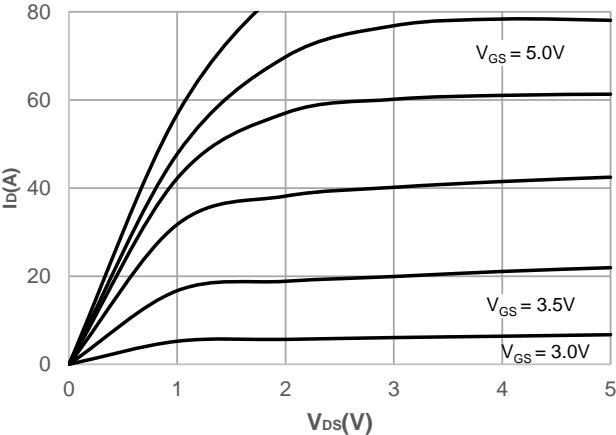
Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>					
V <sub>(BR)DSS</sub>		100	-	-	V
I <sub>DSS</sub>		-	-	1.0	P
I <sub>GSS</sub>		-	-	±100	
<b>On Characteristics</b>					
V <sub>GS(th)</sub>		1.2	1.7	2.2	V
		-	14.7	19.1	m :
		-	22.2	28.9	m :
R <sub>g</sub>		-	2	-	:
C <sub>iss</sub>		-	707	1061	pF
C <sub>oss</sub>		-	357	535	pF
C <sub>rss</sub>		-	9	-	pF
Q <sub>g</sub>		-	13	-	nC
Q <sub>gs</sub>		-	2.8	-	nC
Q <sub>gd</sub>		-	2.9	-	nC
<b>Switching Characteristics</b>					
t <sub>d(on)</sub>		-	6.4	-	ns
t <sub>r</sub>		-	27	-	ns
t <sub>d(off)</sub>		-	18	-	ns
t <sub>f</sub>		-	8.0	-	ns
<b>Thermal Characteristics</b>					
I <sub>S</sub>		-	-	8.4	A
I <sub>SM</sub>		-	-	34	A
V <sub>SD</sub>		-	-	1.2	V
t <sub>rr</sub>		23	38	58	ns
Q <sub>rr</sub>		-	21	-	nC

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
  2. E<sub>AS</sub> condition: Starting T<sub>J</sub>



### Typical Performance Characteristics

Figure 5: Output Characteristics





### Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

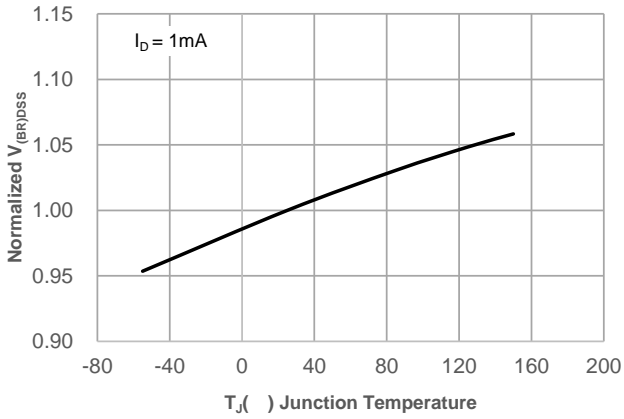


Figure 12: Normalized on Resistance vs. Junction Temperature

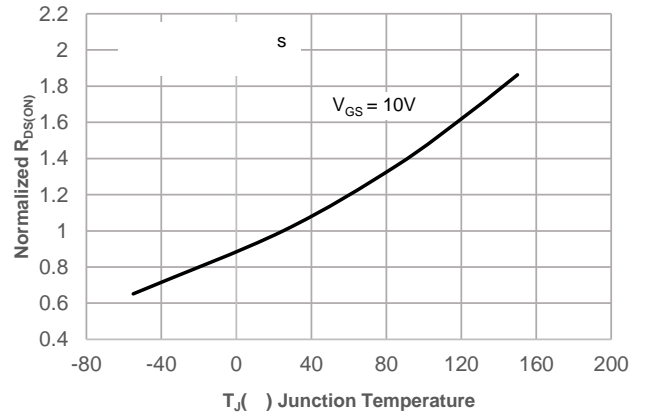


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

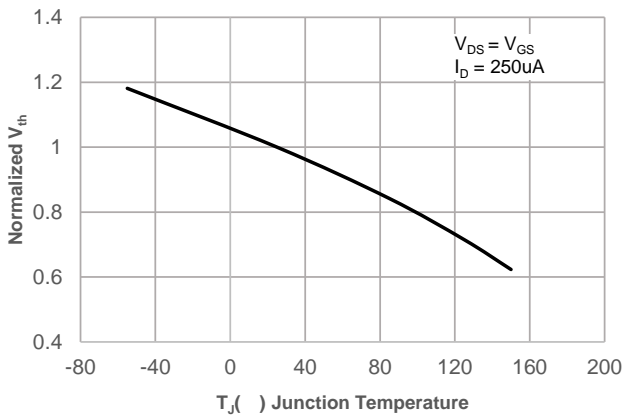


Figure 14: R<sub>DS(ON)</sub> vs. V<sub>GS</sub>

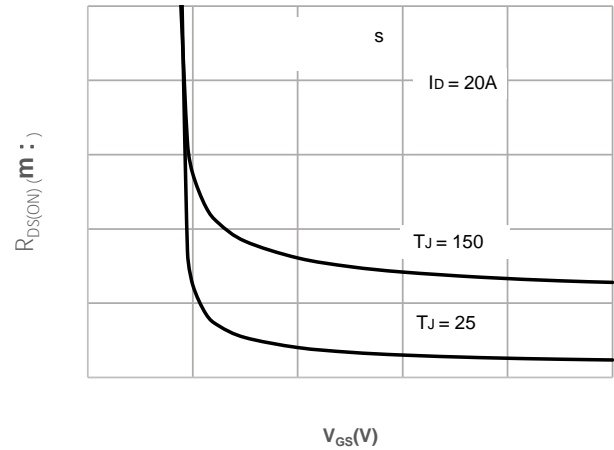
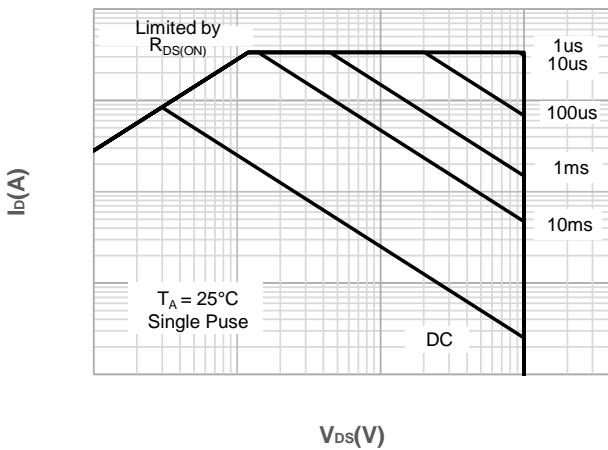


Figure 15: Maximum Safe Operating Area



### Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

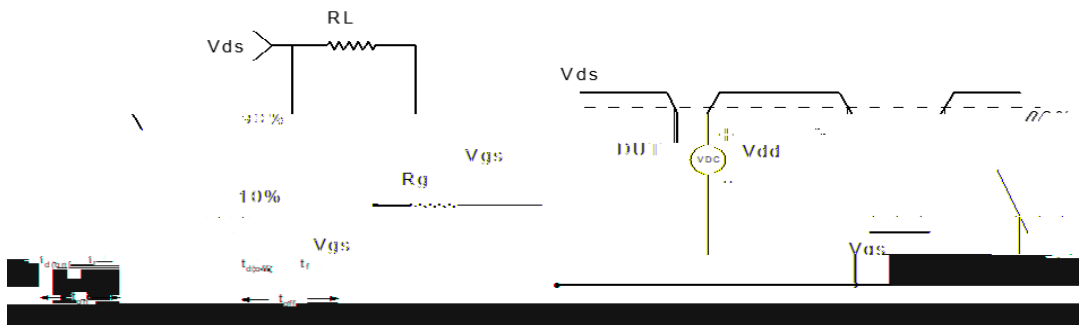


Figure 2: Resistive Switching Test Circuit & Waveform

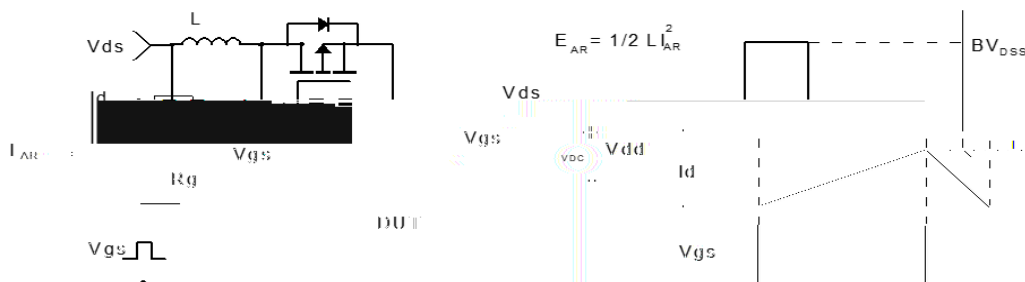


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

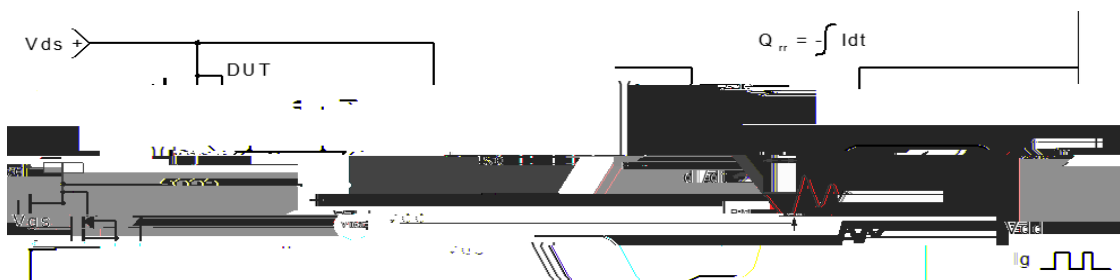


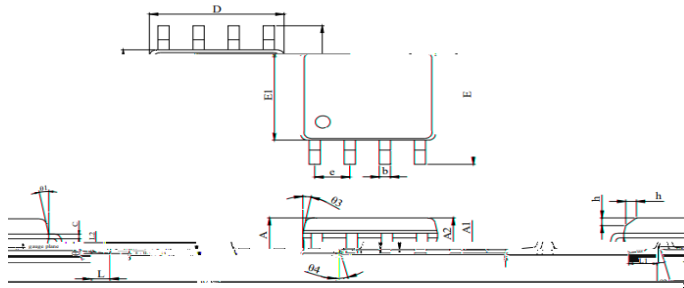
Figure 4: Diode Recovery Test Circuit & Waveform





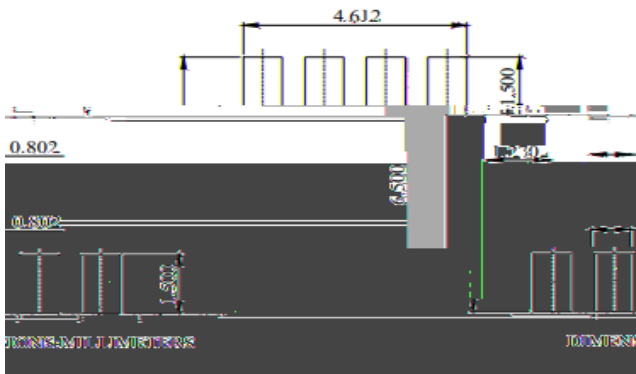
# Package Mechanical Data(SOP-8)

Package Outline



DIM	MILLIMETER		
	MIN.	NOM.	MAX.
A	1.35	1.50	1.65
A1	0.05	0.10	0.15
A2	1.35	1.40	1.50
b	0.38	--	0.50
c	0.17	--	0.25
D	4.80	4.90	5.00
E	5.80	6.00	6.20
e	3.80	3.90	4.00
e1	1.27(BSC)		
e2	0.45	0.60	0.80
e3	1.04 REF		
e4	0.25 BSC		
e5	0.30	0.40	0.50
θ	0°	--	8°
θ1	10°	12°	14°
θ2	8°	10°	12°
θ3	10°	12°	14°
θ4	8°	10°	12°

Recommended Footprint



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