JMSL1018PP

Features

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

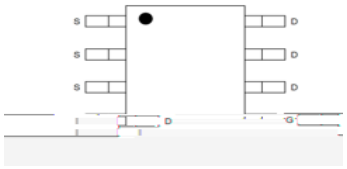
Applications

- Load Switch
- PWM Application
- Power Management

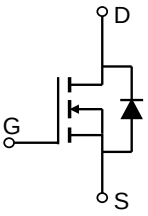
Product Summary

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	m :
$R_{DS(ON)\_Typ}$(@V_{GS}=4.5V)	22.2	m :

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°C unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DS}	Drain-to-Source Voltage		100	V
V_{GS}	Gate-to-Source Voltage		±20	V
I_D	Continuous Drain Current	T_A = 25°C	8.4	A
		T_A = 100°C	5.3	
I_{DM}	Pulsed Drain Current [1]		Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy [2]		74	mJ
P_D	Power Dissipation	T_A = 25°C	2.5	W
		T_A = 100°C	1.0	
T_J $_{STG}$	Junction & Storage Temperature Range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Max	Unit
R	Thermal Resistance, Junction to Ambient[3]	50	°C/W

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

Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics					
$V_{(BR)DSS}$		100	-	-	V
I_{DSS}		-	-	1.0	P
I_{GSS}		-	-	±100	
$V_{GS(th)}$		1.2	1.7	2.2	V
		-	14.7	19.1	m :
		-	22.2	28.9	m :
R_g		-	2	-	:
C_{iss}		-	707	1061	pF
C_{oss}		-	357	535	pF
C_{rss}		-	9	-	pF
Q_g		-	13	-	nC
Q_{gs}		-	2.8	-	nC
Q_{gd}		-	2.9	-	nC
$t_{d(on)}$		-	6.4	-	ns
t_r		-	27	-	ns
$t_{d(off)}$		-	18	-	ns
t_f		-	8.0	-	ns
I_S		-	-	8.4	A
I_{SM}		-	-	34	A
V_{SD}		-		1.2	V
trr		23	38	58	ns
Qrr		-	21	-	nC

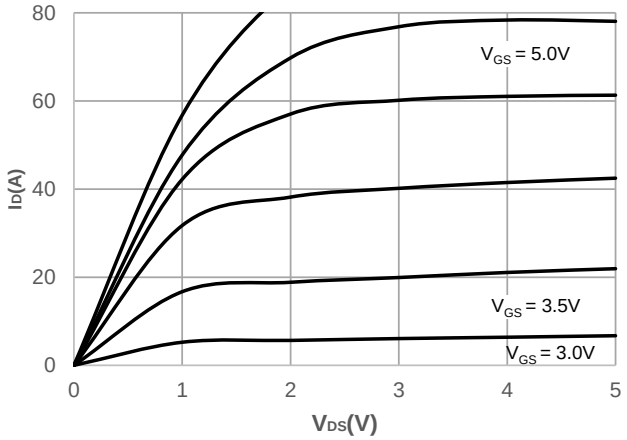
Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. E_{AS} condition: Starting T_J

Typical Performance Characteristics

Typical Performance Characteristics

Figure 5: Output Characteristics



Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

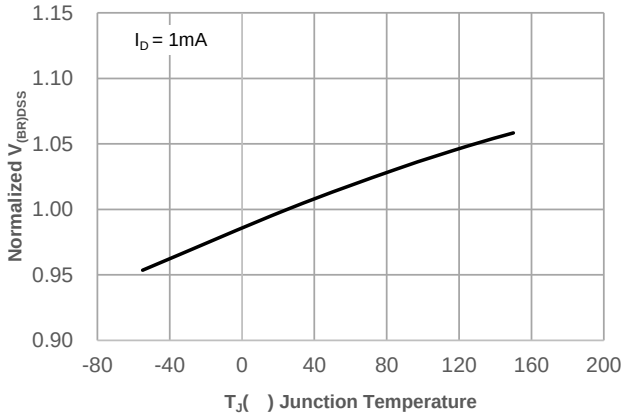


Figure 12: Normalized on Resistance vs. Junction Temperature

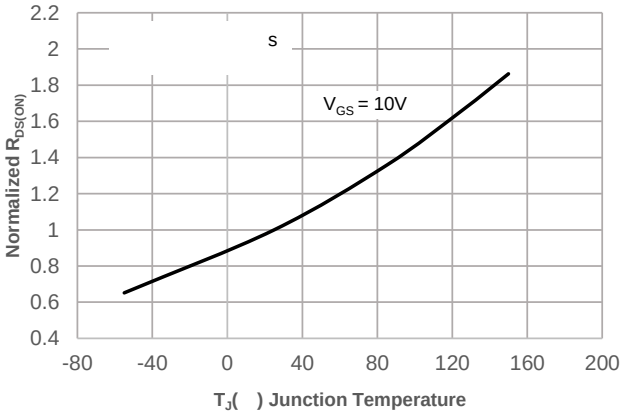


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

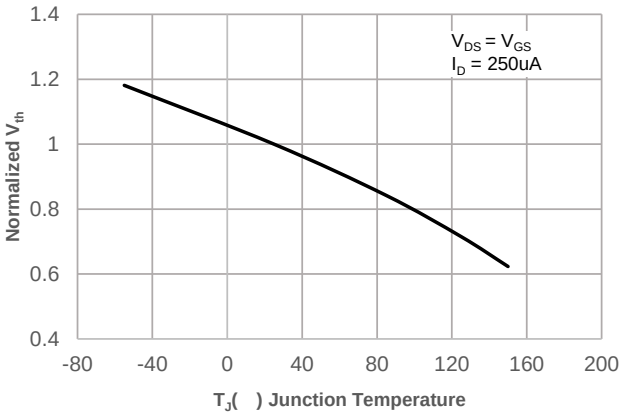


Figure 14: $R_{DS(ON)}$ vs. V_{GS}

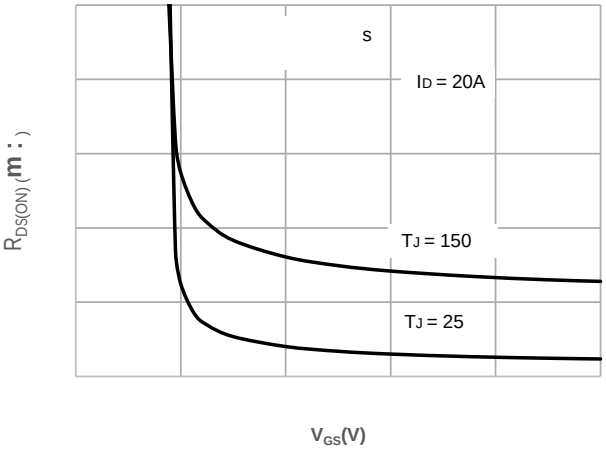
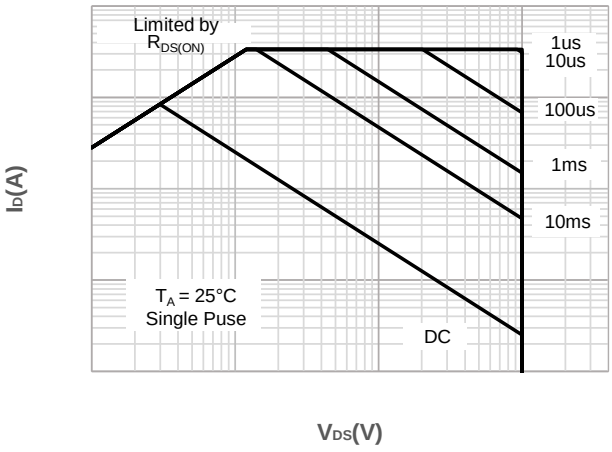


Figure 15: Maximum Safe Operating Area



Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform

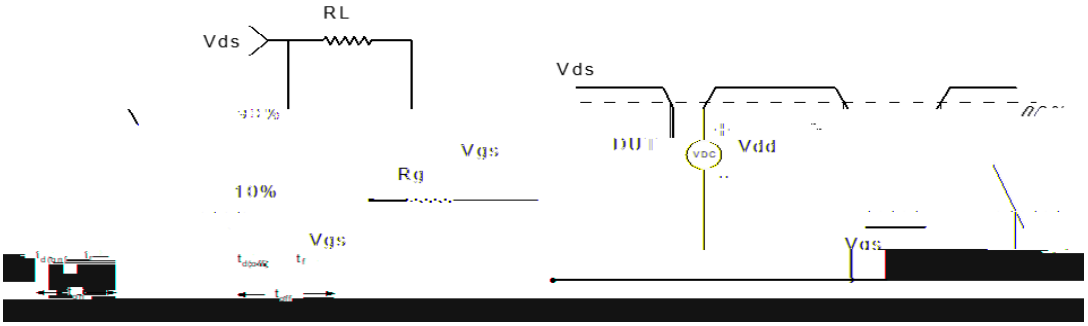


Figure 2: Resistive Switching Test Circuit & Waveform

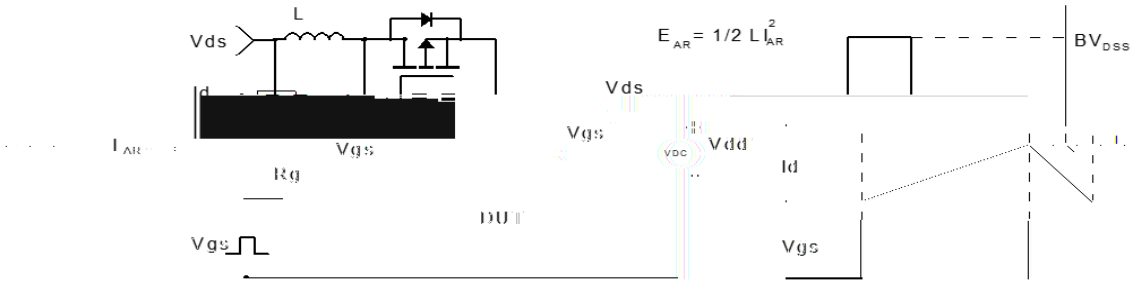


Figure 3: Unclamped Inductive Switching Test Circuit& Waveform

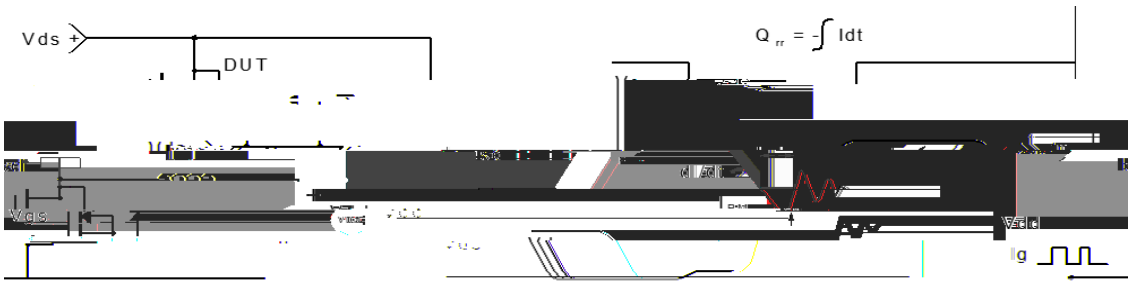
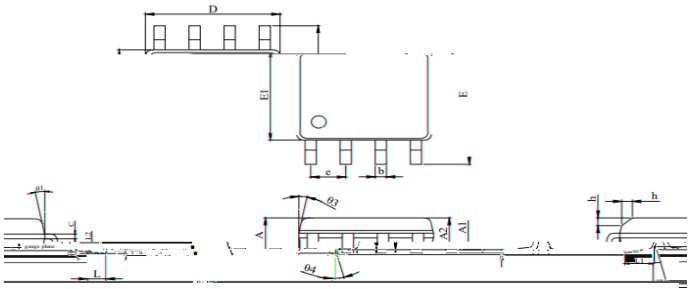


Figure 4: Diode Recovery Test Circuit & Waveform

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
E1	3.80	3.90	4.00
e	1.27(BSC)		
L	0.45	0.60	0.80
L1	1.04 REF		
L2	0.25 BSC		
R	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