

JMSL1018PP

Features

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

Applications

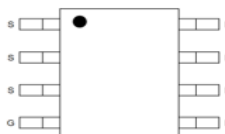
- Load Switch
- PWM Application
- Power Management

Product Summary

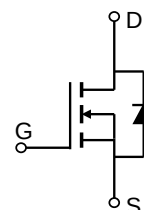
Parameters	Value	Unit
V_{DSS}	100	V
$V_{GS(th)_{Typ}}$	1.7	V
$I_D(@V_{GS}=10V)$	8.4	A
$R_{DS(ON)_{Typ}}(@V_{GS}=10V)$	14.7	mΩ
$R_{DS(ON)_{Typ}}(@V_{GS}=4.5V)$	22.2	mΩ



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	± 20	V
I_D	Continuous Drain Current	$T_A = 25^\circ\text{C}$	A
		$T_A = 100^\circ\text{C}$	
I_{DM}	Pulsed Drain Current ⁽¹⁾	Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	74	mJ
P_D	Power Dissipation	$T_A = 25^\circ\text{C}$	W
		$T_A = 100^\circ\text{C}$	
$T_{J \text{ STG}}$	Junction & Storage Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Characteristics

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

Electrical Characteristics ($T_J = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics					
$V_{(BR)DSS}$		100	-	-	V
I_{DSS}		-	-	1.0	μ
I_{GSS}		-	-	± 100	
$V_{GS(th)}$		1.2	1.7	2.2	V
		-	14.7	19.1	$m\Omega$
		-	22.2	28.9	$m\Omega$
R_g		-	2	-	Ω
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
t_{rr}		23	38	58	ns
Q_{rr}		-	21	-	nC

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting T_J

Typical Performance Characteristics

Figure 1: Power De-rating

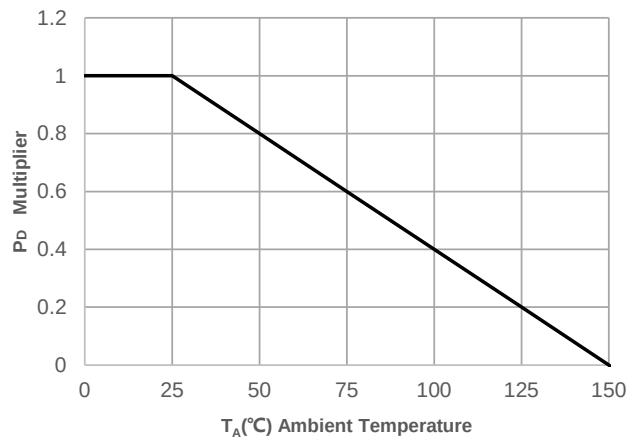
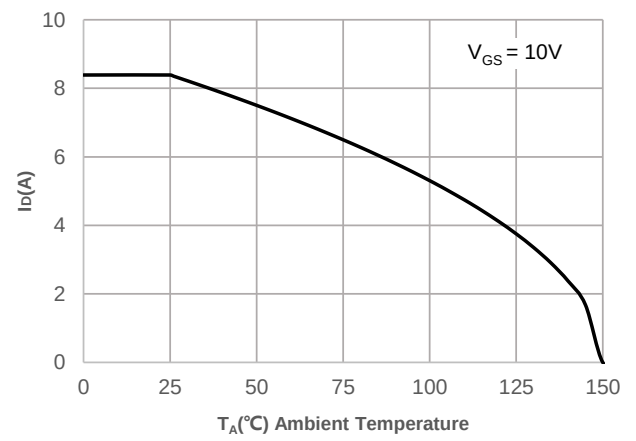
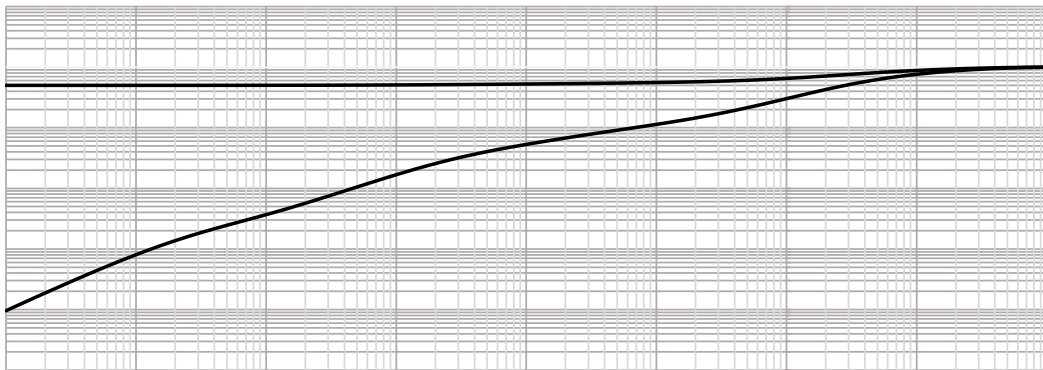
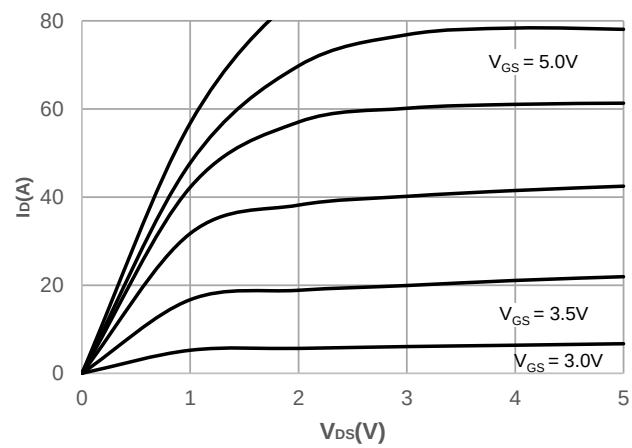


Figure 2: Current De-rating



Typical Performance Characteristics

Figure 5: Output Characteristics



Typical Performance Characteristics

Figure 11: Normalized Breakdown voltage vs. Junction Temperature

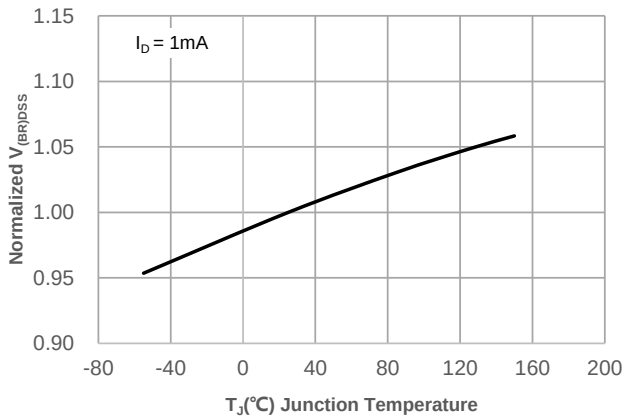


Figure 12: Normalized on Resistance vs. Junction Temperature

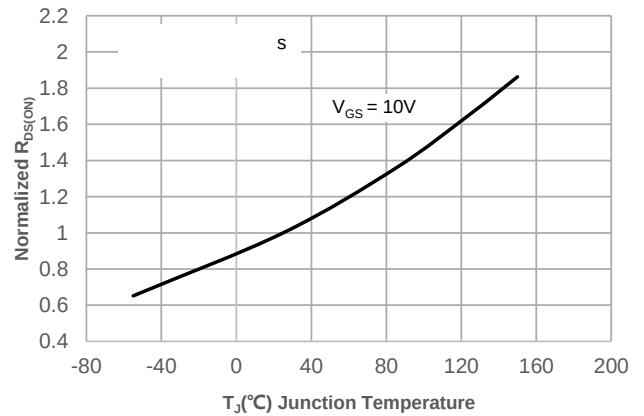


Figure 13: Normalized Threshold Voltage vs. Junction Temperature

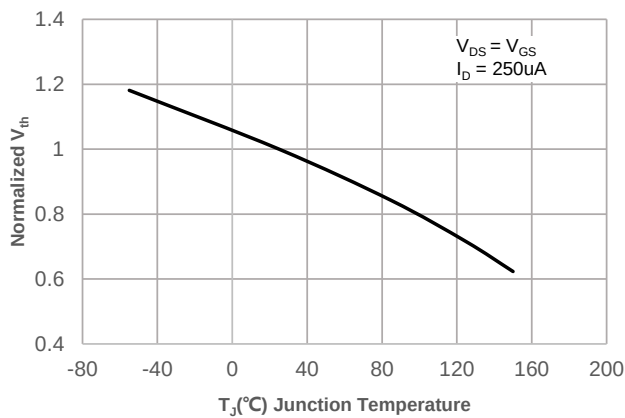


Figure 14: $R_{DS(on)}$ vs. V_{GS}

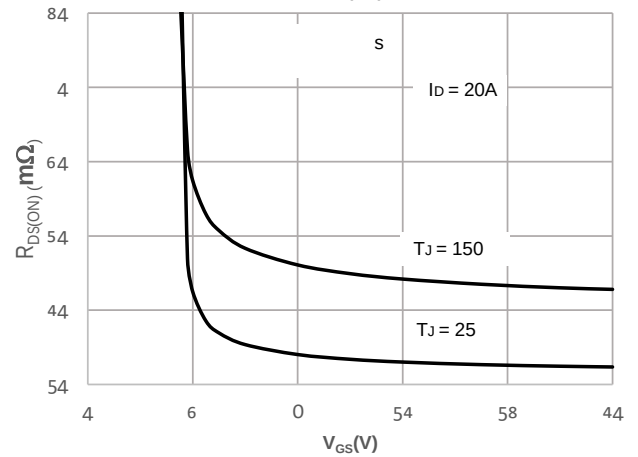
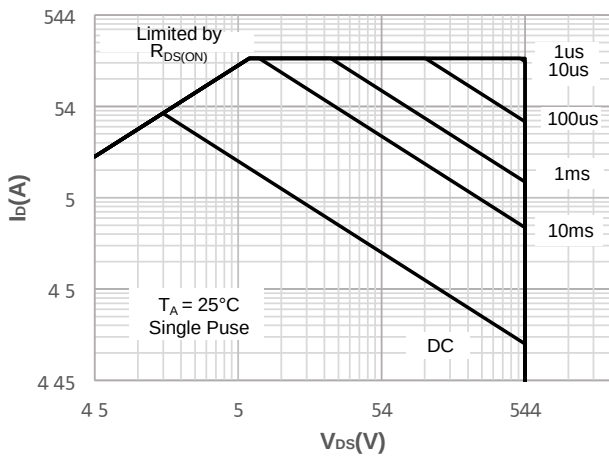


Figure 15: Maximum Safe Operating Area



Test Circuit



Figure 1: Gate Charge Test Circuit & Waveform

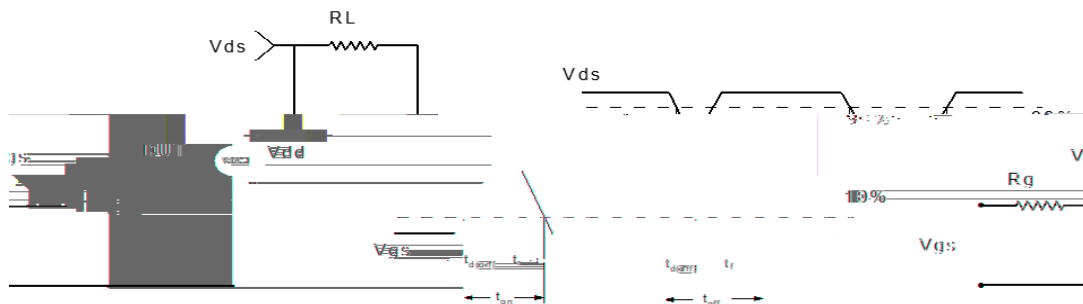


Figure 2: Resistive Switching Test Circuit & Waveform

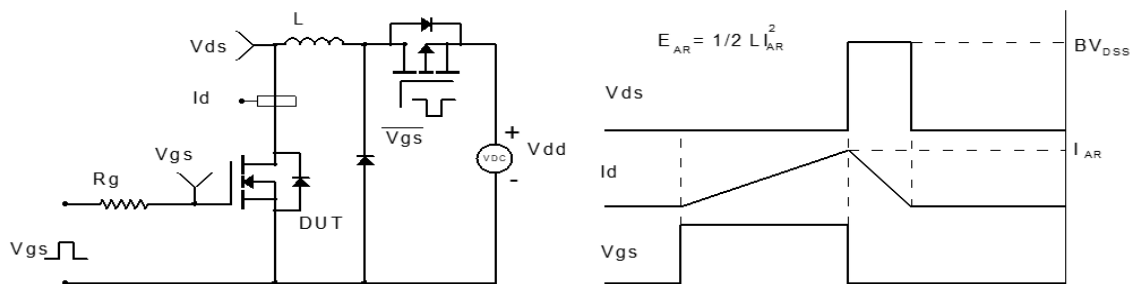


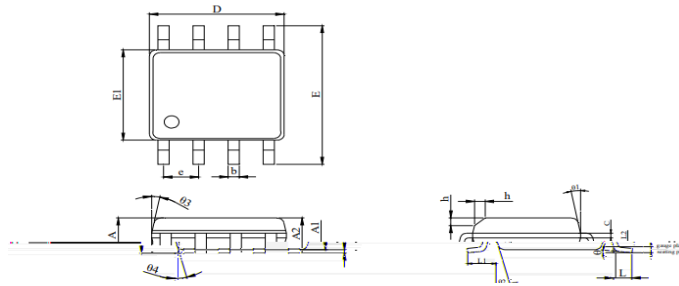
Figure 3: Unclamped Inductive Switching Test Circuit & Waveform



Figure 4: Diode Recovery Test Circuit & Waveform

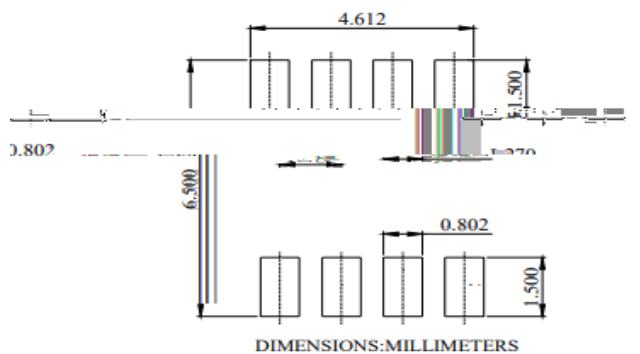
Package Mechanical Data(SOP-8)

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		
h	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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