

60V 10mΩ N-Ch Power MOSFET

Product Summary

Parameter	Value	Unit
V_{DS}	60	V
$V_{GS(th)}_{Typ}$	1.7	V
I_D (@ $V_{GS} = 10V$) ⁽¹⁾	12.7	A
$R_{DS(ON)}_{Typ}$ (@ $V_{GS} = 10V$)	10	mΩ
$R_{DS(ON)}_{Typ}$ (@ $V_{GS} = 4.5V$)	13	mΩ

Ordering Information

Device	Package	# of Pins	Marking	MSL	T_J (°C)	Media	Quantity (pcs)
JMSL0615AP-13	SOP-8L	8	SL0615A	3	-55 to 150	13-inch Reel	2500

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

Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DS}	60	V
Gate-to-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ⁽¹⁾	$T_A = 25^\circ\text{C}$	12.7	A
	$T_A = 70^\circ\text{C}$	10.2	
Pulsed Drain Current ⁽²⁾	I_{DM}	51	A
Avalanche Current ⁽³⁾	I_{AS}	20	A
Avalanche Energy ⁽³⁾	E_{AS}	20	mJ
Power Dissipation ⁽⁴⁾	$T_A = 25^\circ\text{C}$	3.6	W
	$T_A = 70^\circ\text{C}$	2.3	
Junction & Storage Temperature Range	T_J, T_{STG}	-55 to 150	°C

	Symbol	Min.	Typ.	Max.	Unit
Gate Threshold Voltage	$V_{(BR)DSS}$	60			V
	$V_{DS} = 48V, V_{GS} = 0V$			1.0	
	$T_J = 55^{\circ}C$			5.0	
	I_{GSS}			± 100	nA
	$V_{GS(th)}$	1.2	1.7	2.5	V
			10.0	12.5	m Ω
			13.0	16.9	m Ω
	g_{FS}		50		S
	V_{SD}		0.72	1.0	V
	I_S			3.6	A

	C_{iss}		731		pF
	C_{oss}		224		pF
	C_{rss}		7.4		pF
	R_g		1.7		Ω

SWITCHING PARAMETERS ⁽⁵⁾

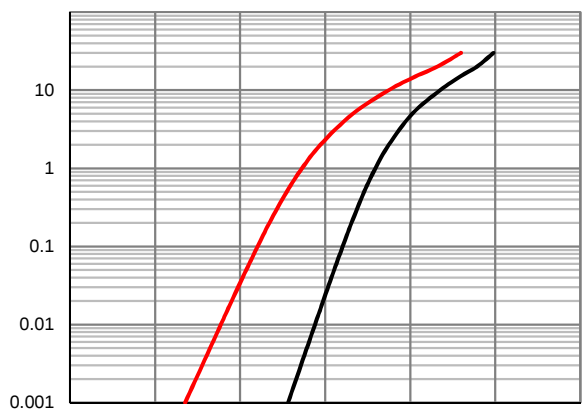
	Q_g		13.9		nC
	Q_g		7.0		nC
	Q_{gs}		1.6		nC
	Q_{gd}		3.1		nC
	$t_{D(on)}$		3.9		ns
	t_r		4.5		ns
	$t_{D(off)}$		16.5		ns
	t_f		6.8		ns
	t_{rr}		23		ns
	Q_{rr}	$I_F = 12A, di_F/dt = 100A/\mu s$	8.8		nC

Parameter	Symbol			Unit
Thermal Resistance, Junction-to-Ambient ($t \leq 10s$)	$R_{\theta JA}$	30	35	$^{\circ}C/W$
Thermal Resistance, Junction-to-Ambient (steady state)	$R_{\theta JA}$	40	50	$^{\circ}C/W$

Notes:

- application board design.
- This single-pulse measurement was taken under $T_{J_Max} = 150^{\circ}C$.
- This single-pulse measurement was taken under the following condition [$L = 100\mu H, V_{GS} = 10V, V_{DS}$
- The power dissipation P_D is based on $T_{J_Max} = 150^{\circ}C$.
- This value is guaranteed by design hence it is not included in the production test.

Typical Electrical & Thermal Characteristics

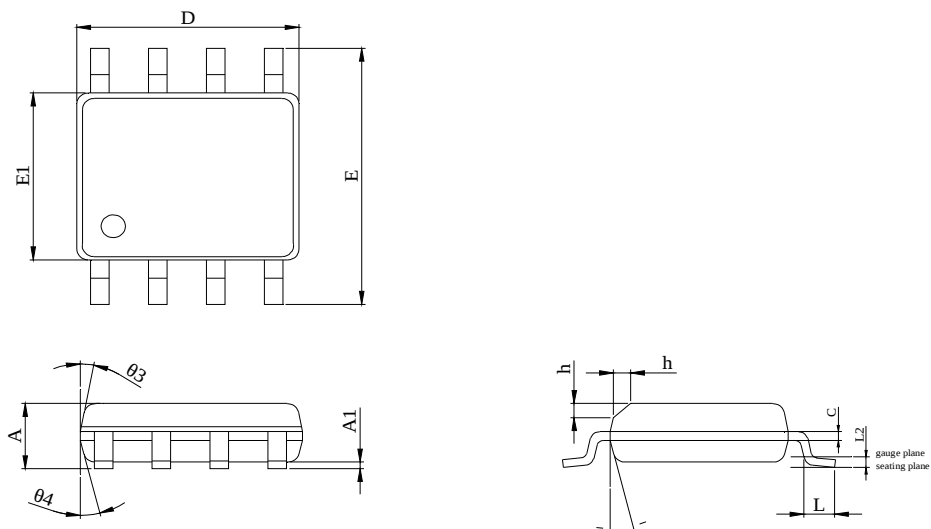


Typical Electrical & Thermal Characteristics



SOP-8L Package Information

Package Outline



Recommend Soldering Footprint