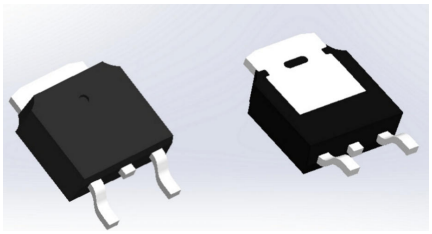
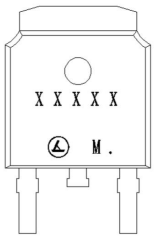
S-LN16N06D2

60V N-Channel (D-S) MOSFET



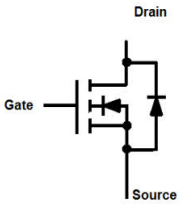
TO252-2L



Top View

1. FEATURES

- RDS(ON)≦60mΩ@VGS=10V.
- RDS(ON)≦75mΩ@VGS=5V.
- Fast switching capability.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



2. APPLICATIONS

- Load/Power switch for portables and computing
- DC−DC conversion

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
S-LN16N06D2	16N06	2500pcs/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	60	V
Gate-to-Source Voltage		VGS	± 20	V
Continuous Drain Current(Note 1)	TA=25℃	ID	4	A
	TA=100℃		2.5	
	TC=25℃		16	
	TC=100℃		11	
Pulsed Drain Current (Note 2)		IDM	16	A
Continuous Drain Current(Note 3)	TA=25℃	ID	3.3	A
	TA=100℃		2	
Pulsed Drain Current (Note 3)		IDM	13.5	A
Power Dissipation(Note 1)	TA=25℃	PD	1.9	W
	TC=25℃		41	
Power Dissipation(Note 3)	TA=25℃	PD	1.4	W
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	℃

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Junction-to-Ambient(Note 1)	RθJA	65	℃/W
Junction-to-Ambient(Note 3)	RθJA	90	
Junction-to-Case	RθJC	3	

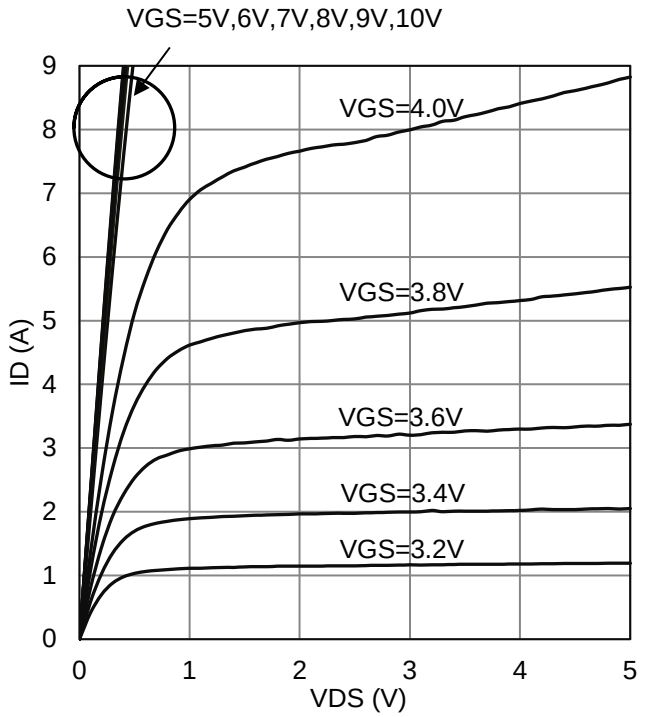
1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
2.Pulse width limited by maximum junction temperature.
3.Surface mounted on FR4 board using the minimum recommended pad size.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

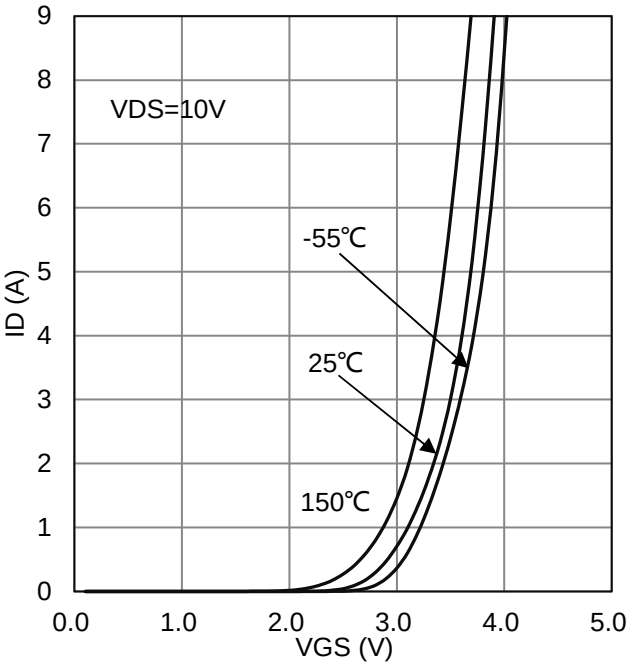
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250 μA)		VBRDSS	60	-	-	V
Gate Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	1	2	3	V
Gate-Body leakage current (VDS = 0 V, VGS = ± 20 V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 60 V, VGS = 0 V)		IDSS	-	-	500	nA
Drain-to-Source On-Resistance (Note 3) (VGS = 10 V, ID = 3 A) (VGS = 5 V, ID = 2 A)		RDS(ON)	- -	- -	60 75	mΩ
Diode Forward Voltage (IS = 1 A, VGS = 0 V)		VSD	-	-	1.2	V
Dynamic						
Total Gate Charge	(VDS = 30 V, VGS = 10 V,ID = 3 A)	Qg	-	13	-	nC
Gate to Source Charge		Qgs	-	2.3	-	
Gate to Drain Charge		Qgd	-	3.7	-	
Turn-on Delay Time	(VDS = 30 V, ID = 1 A, VGS = 10 V,RG = 6 Ω)	td(on)	-	8.5	-	nS
Rise Time		tr	-	7	-	
Turn-Off Delay Time		td(off)	-	27	-	
Fall Time		tf	-	6.5	-	
Input Capacitance	(VDS = 30 V, VGS = 0 V, f = 1 MHz)	Ciss	-	727	-	pF
Output Capacitance		Coss	-	38.5	-	
Reverse Transfer Capacitance		Crss	-	28	-	

3.Pulse test: PW ⩽ 300μs duty cycle ⩽ 2%.

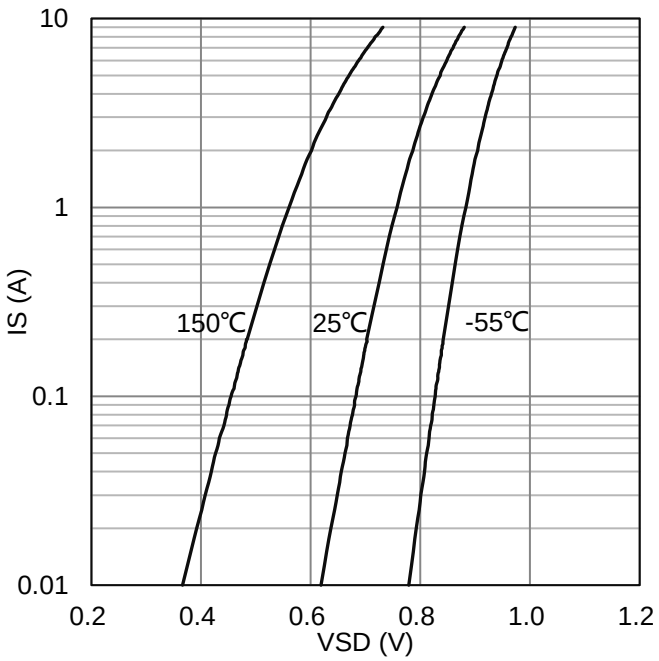
7. ELECTRICAL CHARACTERISTICS CURVES



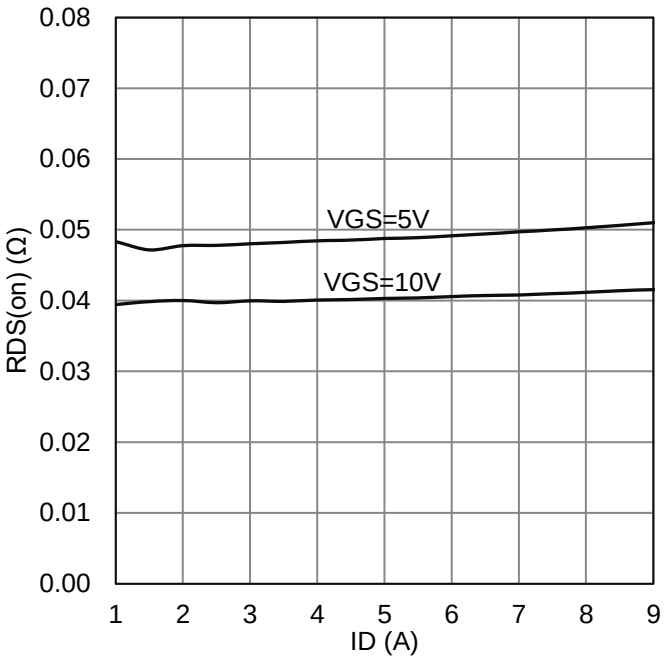
ID vs. VDS



ID vs. VGS

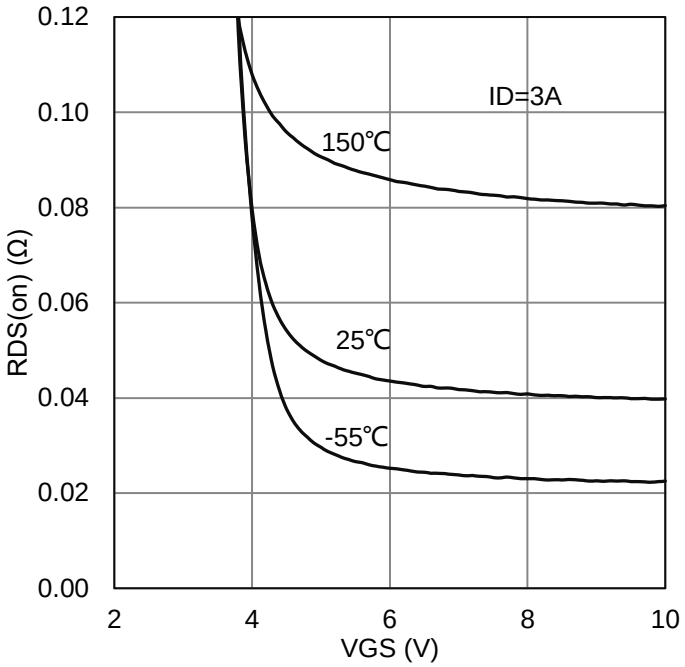


IS vs. VSD

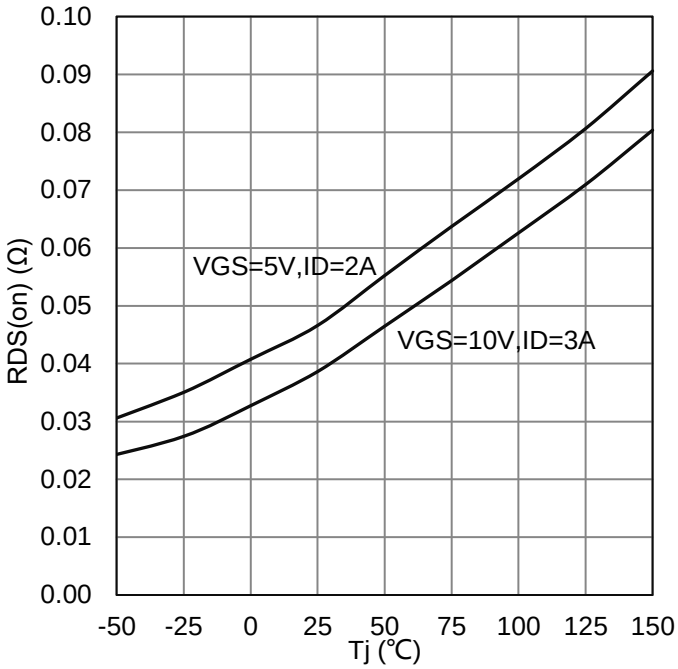


RDS(on) vs. ID

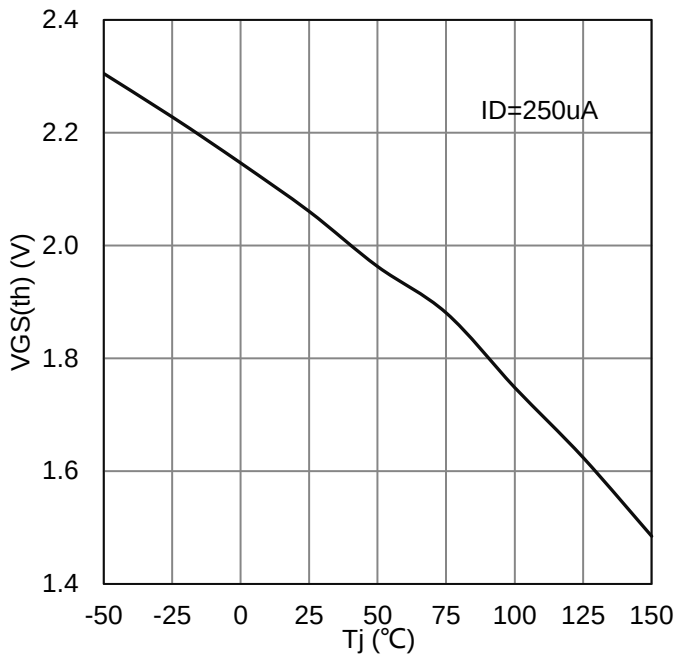
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



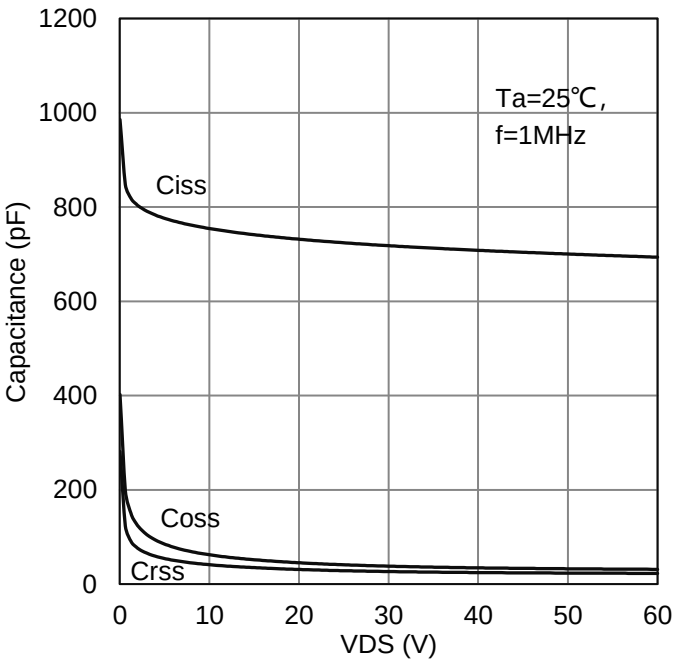
RDS(on) vs. VGS



RDS(on) vs. Tj

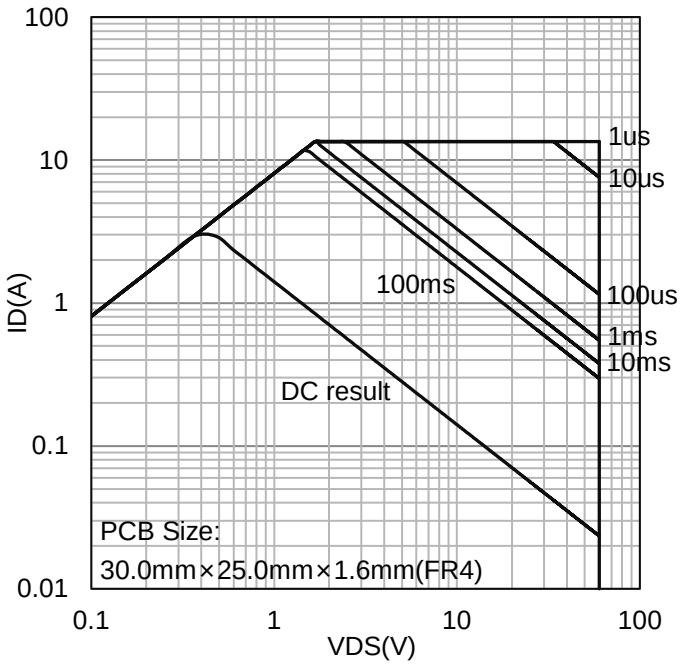


VGSth vs. Tj

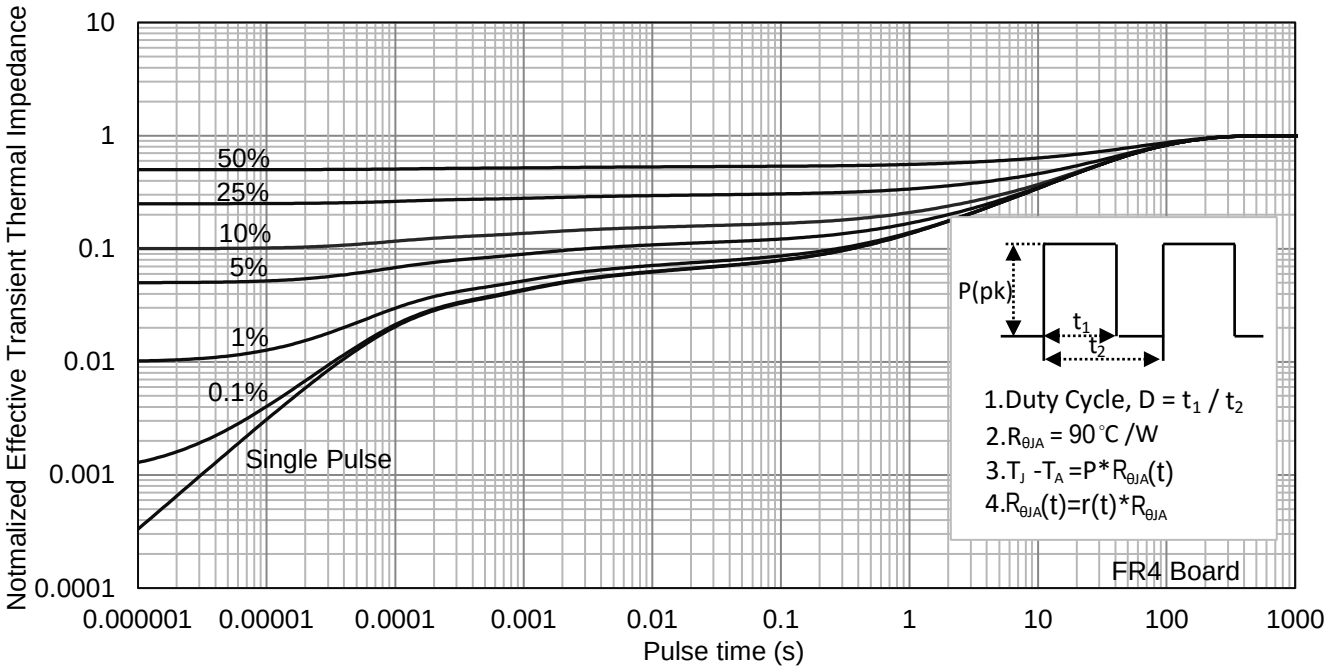


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)

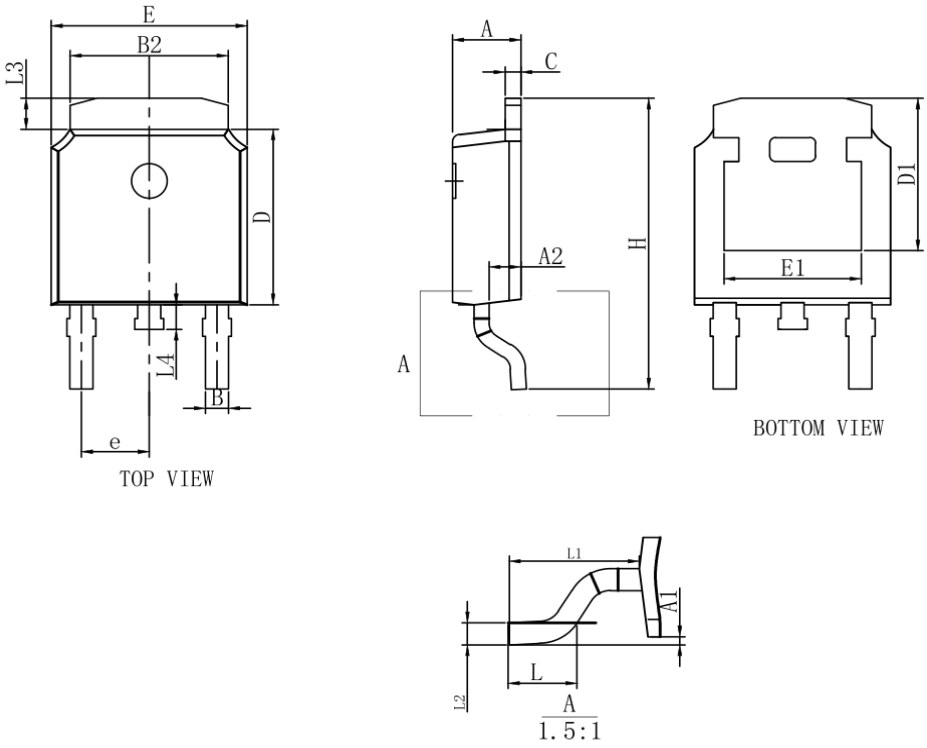


Safe Operating Area



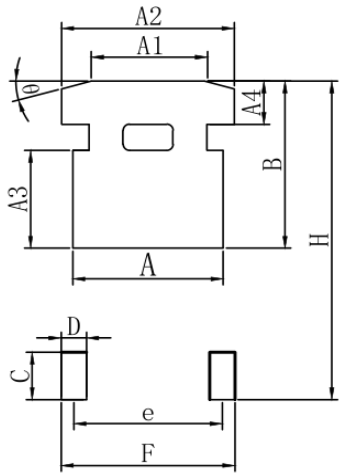
Thermal Response

8.OUTLINE AND DIMENSIONS



DIM	MILLIMETERS		
	MIN	NOM	MAX
A	2.15	2.30	2.45
A1	-	-	0.20
A2	0.90	1.07	1.17
B	0.68	0.78	0.88
B2	5.20	5.33	5.46
D	5.90	6.10	6.30
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	4.83	5.03
e	2.286BSC		
H	9.85	10.10	10.35
L	1.30	1.50	1.70
L1	2.90REF		
L2	0.51BSC		
L3	0.88	1.08	1.28
L4	0.55	0.80	1.05

9.SOLDERING FOOTPRINT



DIM	MIN(mm)
A	6.03
A1	4.50
A2	6.46
A3	4.10
A4	2.37
B	6.50
C	2.50
D	1.68
e	4.80
H	12.35
F	5.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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