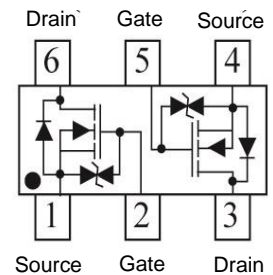
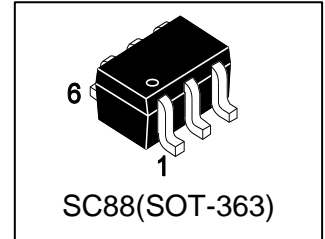


L2N7002SDW1T1G

S-L2N7002SDW1T1G

Small Signal MOSFET
380 mA, 60V N-Channel SC-88



1. FEATURES

- 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.
- ESD protected
- Low RDS(on)

2. APPLICATIONS

- Low side load switch
- Level shift circuits
- DC-DC converter
- Portable applications i.e. DSC, PDA, Cell Phone, etc.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2N7002SDW1T1G	701	3000/Tape&Reel
L2N7002SDW1T3G	701	10000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	60	V
Gate-Source Voltage	VGS	±20	V
Drain Current	ID		mA
- Steady State TA = 25°C		320	
TA = 85°C		230	
- t<5s TA = 25°C		380	
TA = 85°C		270	
Pulsed Drain Current (tp=10µs)	IDM	1.5	A
Source Current (Body Diode)	IS	300	mA

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation(Note 1)	PD		mW
– Steady State		300	
– t<5s		420	
Junction-to-Ambient(Note 1)	R θ JA		°C/W
– Steady State		417	
– t<5s		300	
Lead Temperature for Soldering Purposes (1/8 " from case for 10 s)	TL	260	°C
Junction and Storage temperature	TJ, Tstg	-55~+150	°C
Gate-Source ESD Rating(HBM, Method 3015)	ESD	2000	V

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (VGS = 0, ID = 250 μ A)	VBRDSS	60	-	-	V
Drain-to-Source Breakdown Voltage Temperature Coefficient	VBRDSS/TJ	-	71	-	mV/°C
Zero Gate Voltage Drain Current (VGS = 0, VDS = 60 V) TJ = 25°C	IDSS	-	-	1.0	μ A
TJ = 125°C		-	-	500	
(VGS = 0, VDS = 50 V) TJ = 25°C		-	-	100	nA
Gate-Body Leakage Current, Forward (VGS = 20 V)	IGSSF	-	-	10	μ A
Gate-Body Leakage Current, Reverse (VGS = -20 V)	IGSSR	-	-	-10	μ A

ON CHARACTERISTICS (Note 2)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Gate Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	1.0	-	2.0	V
Negative Threshold Temperature Coefficient	VGS(TH)/TJ	-	4	-	mV/°C
Static Drain-Source On-State Resistance (VGS = 10 V, ID = 500 mA)	RDS(on)	-	-	2.8	Ω
(VGS = 4.5 V, ID = 200 mA)		-	-	3.2	
Forward Transconductance (VDS = 5.0 V, ID = 200 mA)	gfs	80	-	-	mS

DYNAMIC CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Ciss	-	-	35	pF
Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Coss	-	-	10	pF
Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Crss	-	-	5	pF
Total Gate Charge	QG(TOT)	-	0.44	-	nC
Gate-to-Source Charge	QGS	-	0.2	-	
Gate-to-Drain Charge	QGD	-	0.1	-	

1. FR-4 = 1.0×0.75×0.062 in.

 2. Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)(Con.)

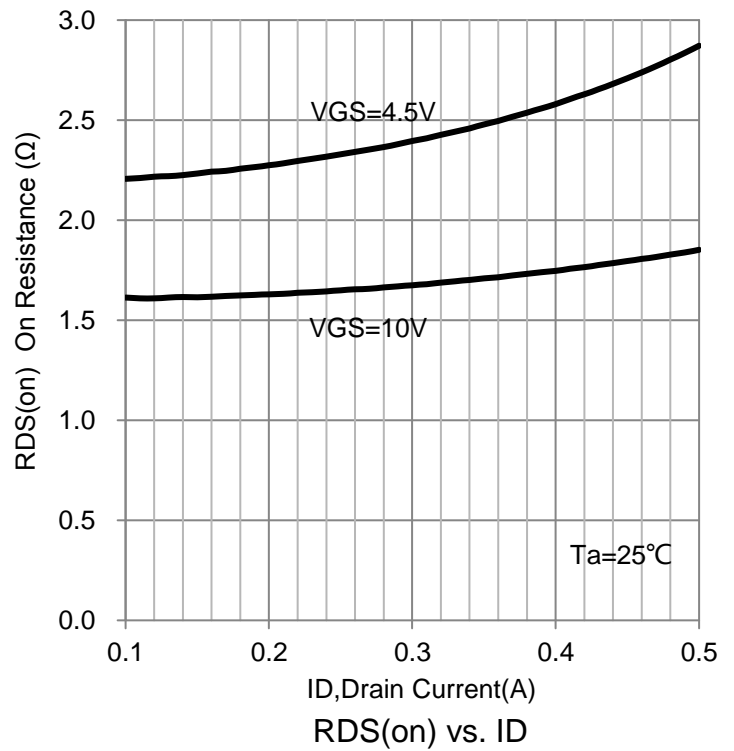
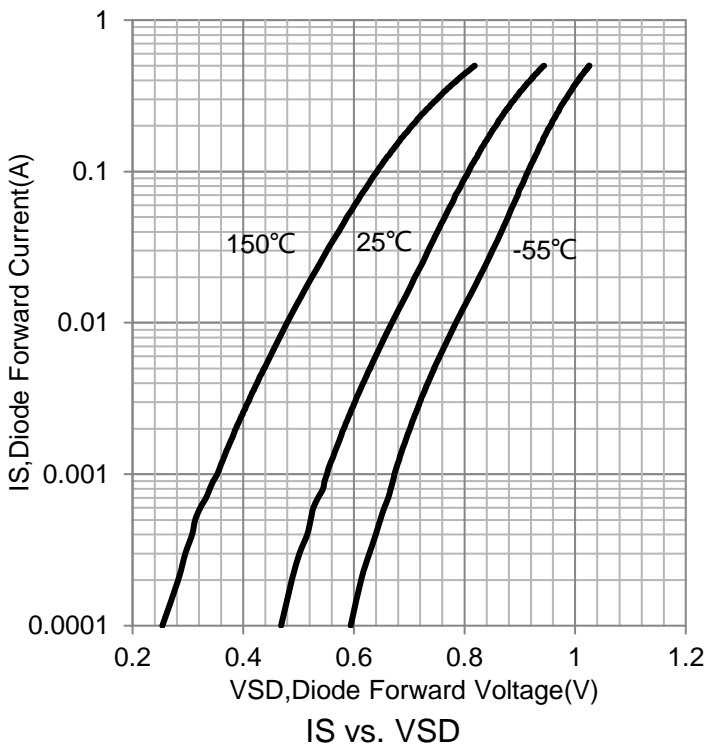
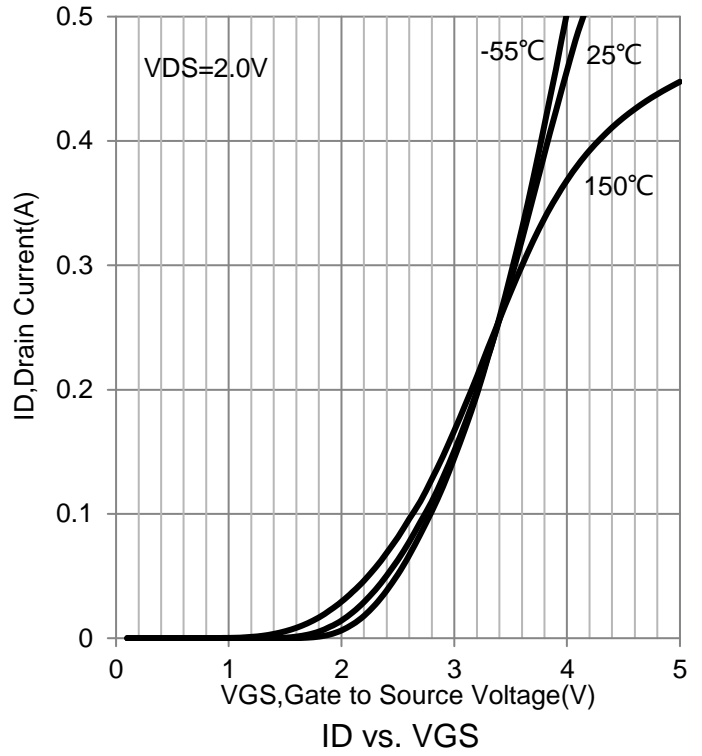
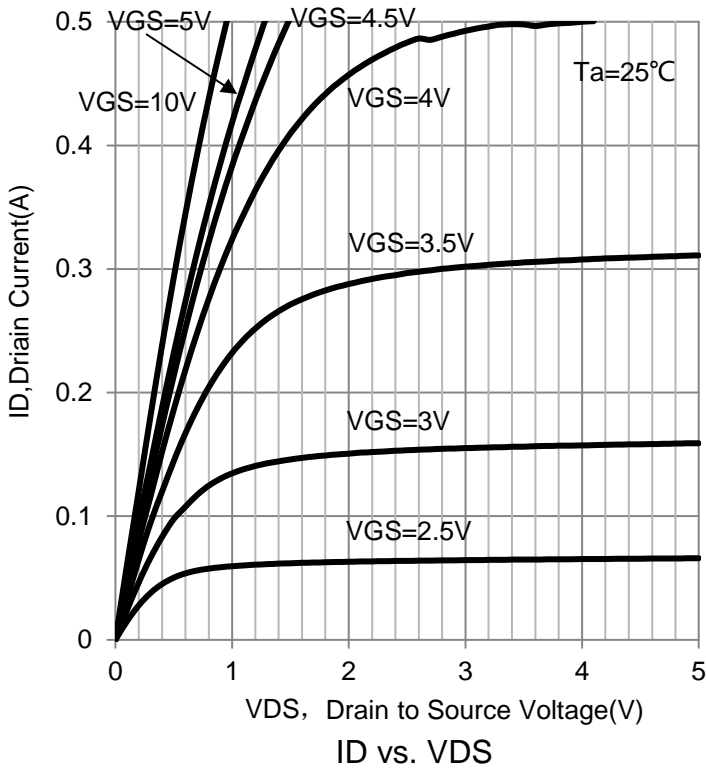
SWITCHING CHARACTERISTICS

Turn-On Delay Time	VDS = 30 V, VGEN = 10 V, ID = 500 mA, RG = 25Ω ,RL =60Ω	td(on)	-	2.7	-	ns
Rise Time		tr	-	2.5	-	
Turn-Off Delay Time		td(off)	-	13	-	
Fall Time		tf	-	8	-	

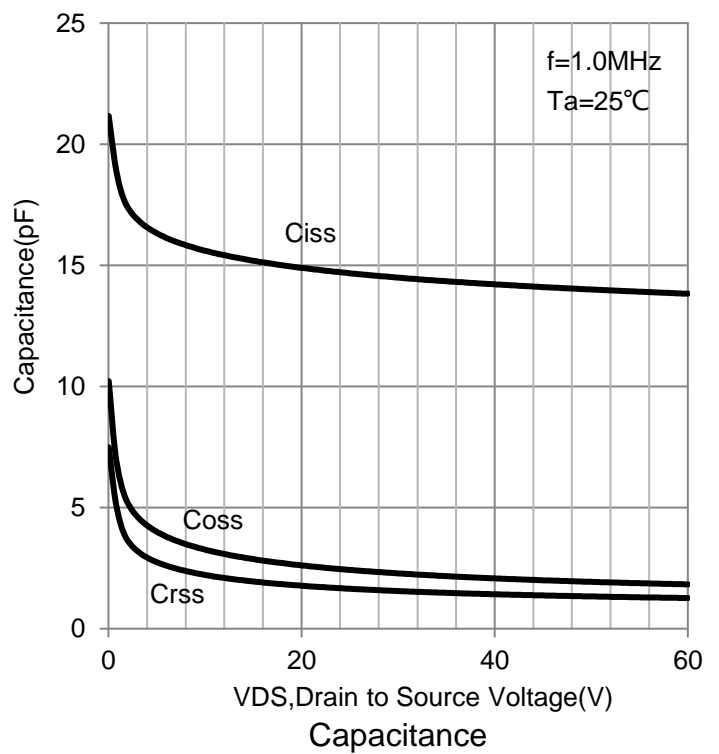
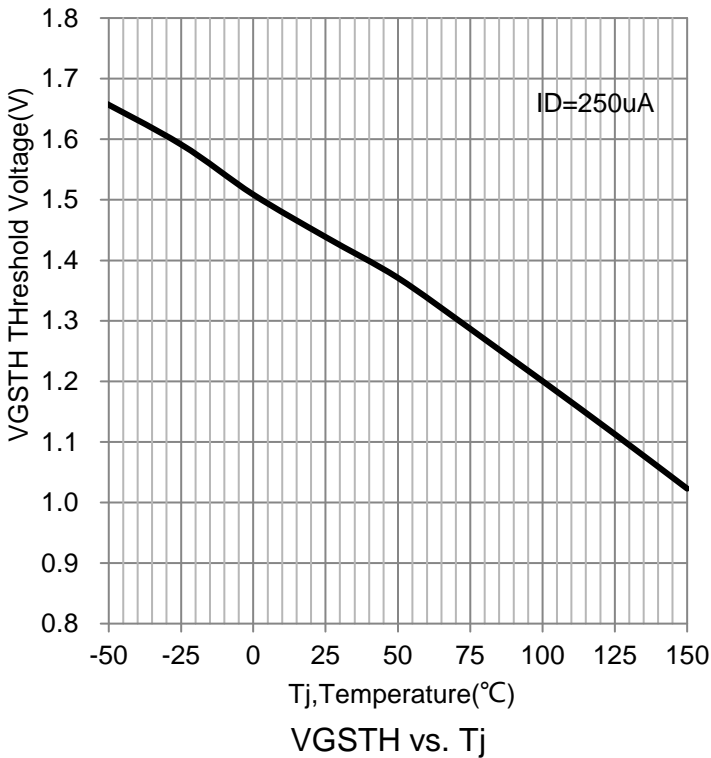
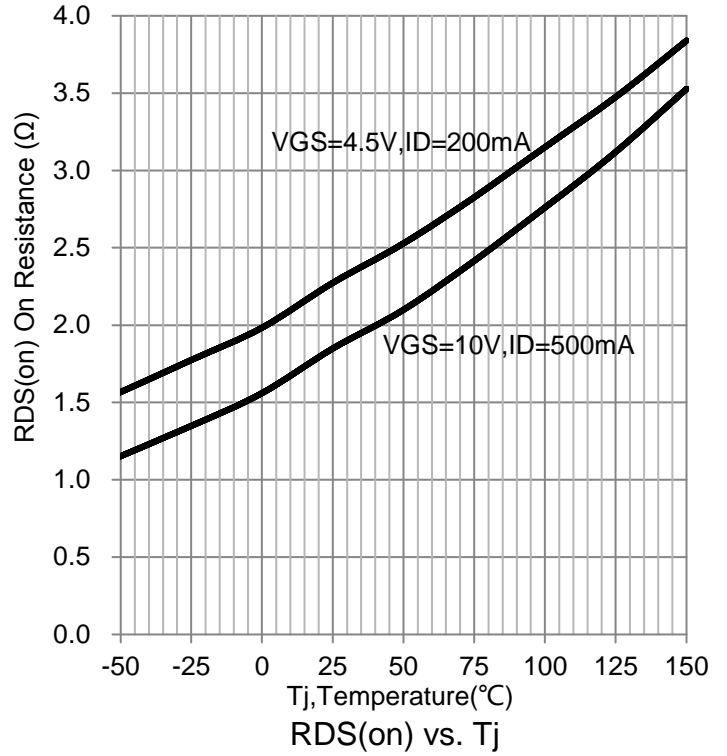
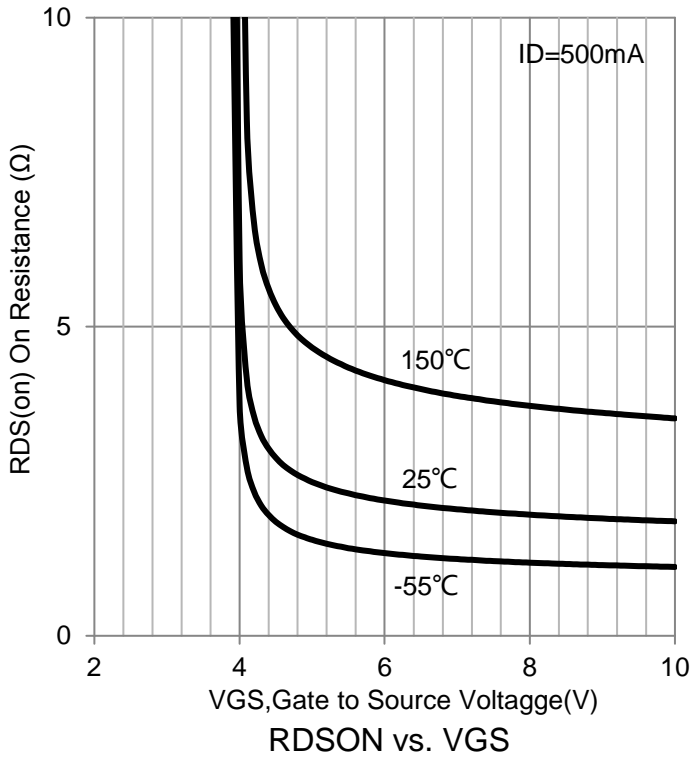
BODY-DRAIN DIODE RATINGS

Diode Forward On-Voltage (IS = 0.5A, VGS = 0 V)	VSD	-	0.85	-	V
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7. ELECTRICAL CHARACTERISTICS CURVES



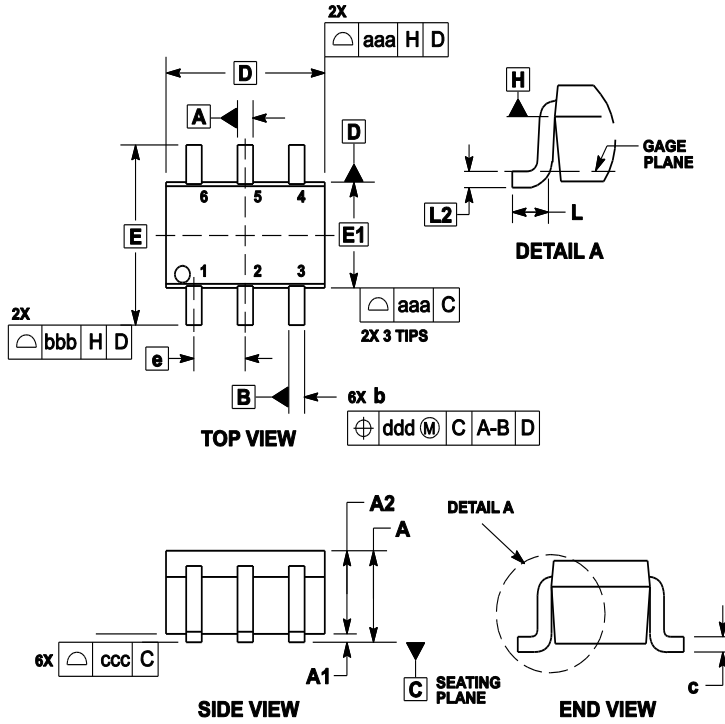
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

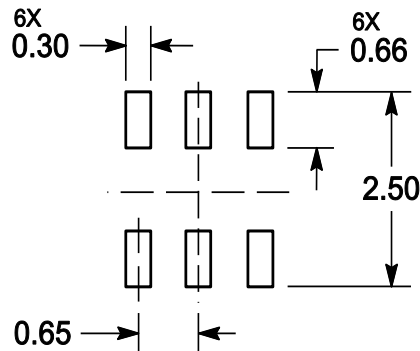
Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	---	---	1.10	---	---	0.043
A1	0.00	---	0.10	0	---	0.004
A2	0.70	0.90	1.00	0.027	0.035	0.039
b	0.15	0.20	0.25	0.006	0.008	0.01
C	0.08	0.15	0.22	0.003	0.006	0.009
D	1.80	2.00	2.20	0.07	0.078	0.086
E	2.00	2.10	2.20	0.078	0.082	0.086
E1	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.26	0.36	0.46	0.010	0.014	0.018
L2	0.15 BSC			0.006 BSC		
aaa	0.15			0.01		
bbb	0.30			0.01		
ccc	0.10			0.00		
ddd	0.10			0.00		

9. SOLDERING FOOTPRINT



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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