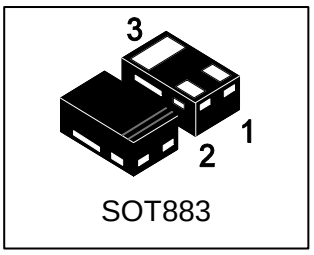
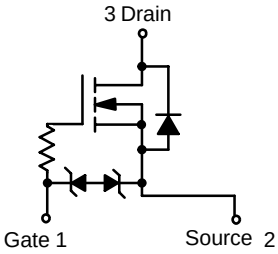
LSI1012N3T5G
S-LSI1012N3T5G

N-Channel 1.8-V (G-S) MOSFET



SOT883



1. FEATURES

- Power MOSFET: 1.8-V Rated
- Gate-Source ESD Protected
- High-Side Switching
- Low On-Resistance: 0.7Ω
- Low Threshold: 0.8 V (typ)
- Fast Switching Speed: 10 ns
- 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. BENEFITS

- Ease in Driving Switches
- Low Offset (Error) Voltage
- Low-Voltage Operation
- High-Speed Circuits
- Low Battery Voltage Operation

3. APPLICATIONS

- Drivers: Relays, Solenoids, Lamps, Hammers,Displays, Memories.
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

4. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LSI1012N3T5G	A2	10000/Tape&Reel

5. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	5 secs	Steady State	Unit
Drain-Source Voltage		VDS	20		V
Gate-Source Voltage		VGS	±6		V
Continuous Drain Current (TJ = 150℃) (Note 2)	TA = 25℃	ID	600	500	mA
	TA = 85℃		400	350	
Pulsed Drain Current(Note 1)		IDM	1000		
Continuous Source Current (diode conduction)(Note 2)		IS	275	250	
Maximum Power Dissipation(Note 2)		PD		250	mW
Thermal Resistance, Junction to Ambient		RθJA		500	℃/W
Operating Junction and Storage Temperature Range		TJ , Tstg	−55 ~+150		℃

1.Pulse width limited by maximum junction temperature.

2.Surface Mounted on FR4 Board.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Static

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (VGS = 0V, ID = 250μA)	V(BR)DSS	20	-	-	V
Gate Threshold Voltage (VDS = VGS , ID = 250μA)	VGS(th)	0.45	-	0.9	V
Gate-Body Leakage (VDS = 0 V, VGS = ±4.5 V)	IGSS	-	±0.5	±1	μA
Zero Gate Voltage Drain Current (VDS = 20 V, VGS = 0 V) (VDS = 20 V, VGS = 0 V, TJ = 85℃)	IDSS	- -	0.3 -	100 5	nA μA
Drain-Source On-State Resistance(Note 1) (VGS = 4.5 V, ID = 600 mA) (VGS = 2.5 V, ID = 500 mA) (VGS = 1.8 V, ID = 350 mA)	RDS(on)	- - -	0.41 0.53 0.7	0.7 0.85 1.25	Ω
Diode Forward Voltage(Note 1) (IS = 150 mA, VGS = 0 V)	VSD	-	0.8	1.2	V

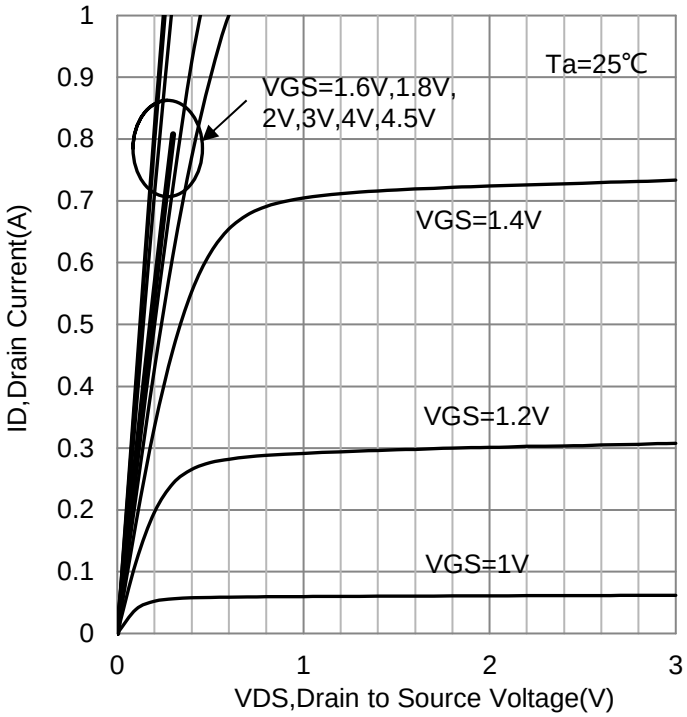
Dynamic(Note 2)

Total Gate Charge	(VDS = 10 V, VGS = 4.5 V, ID = 250 mA)	Qg	-	750	-	pC
Gate-Source Charge		Qgs	-	75	-	
Gate-Drain Charge		Qgd	-	225	-	
Turn-On Delay Time	(VDD = 10 V, RL = 47Ω,ID=200 mA, VGEN = 4.5 V, RG = 10Ω)	td(on)	-	5	-	ns
Rise Time		tr	-	5	-	
Turn-Off Delay Time		td(off)	-	25	-	
Fall Time		tf	-	11	-	
Input Capacitance	(VDS = 16 V, VGS = 0 V, f = 1 MHz)	Ciss	-	43.5	-	pF
Output Capacitance		Coss	-	5.8	-	
Reverse Transfer Capacitance		Crss	-	5.8	-	

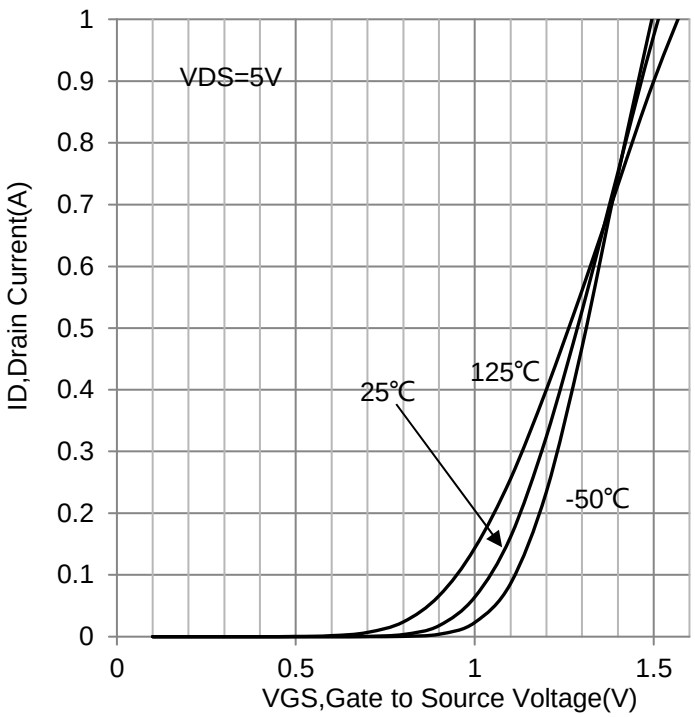
3.Pulse test; pulse width ≤300 μs, duty cycle ≤ 2%.

4.Guaranteed by design, not subject to production testing.

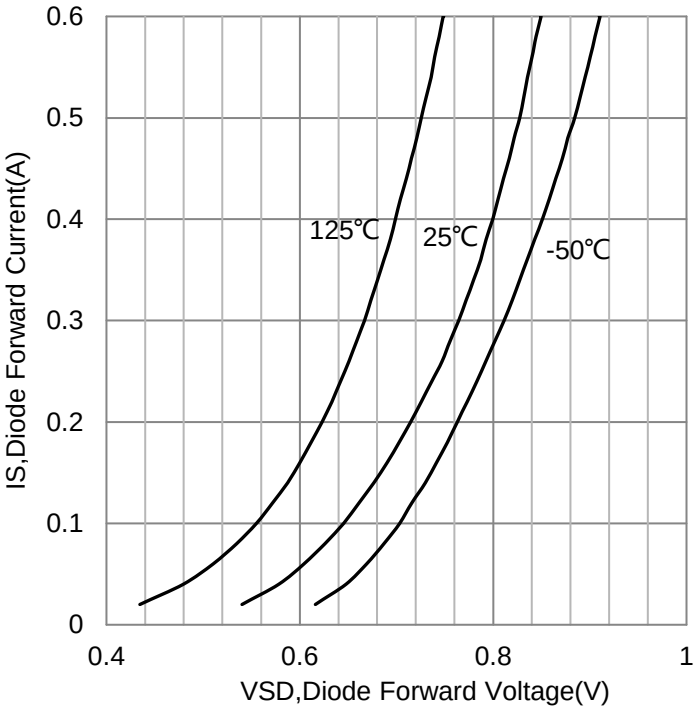
7.ELECTRICAL CHARACTERISTICS CURVES



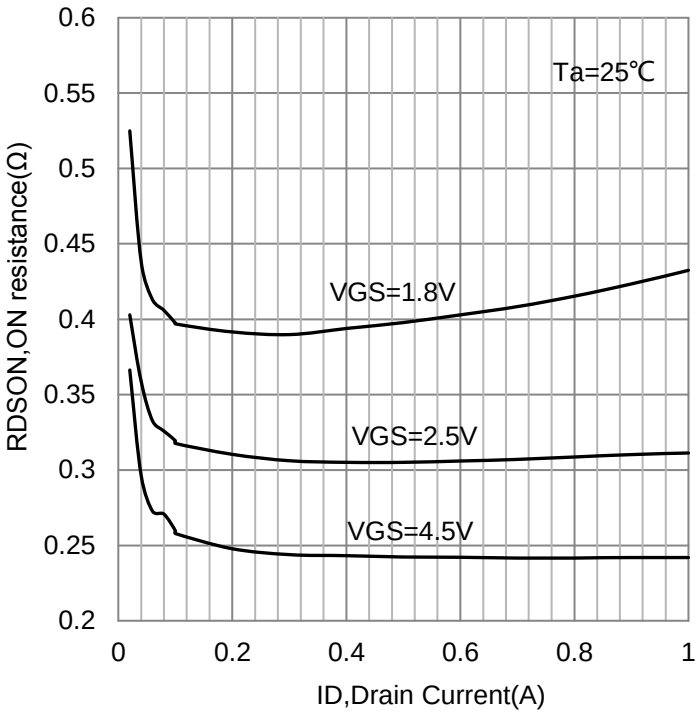
ID vs. VDS



ID vs. VGS

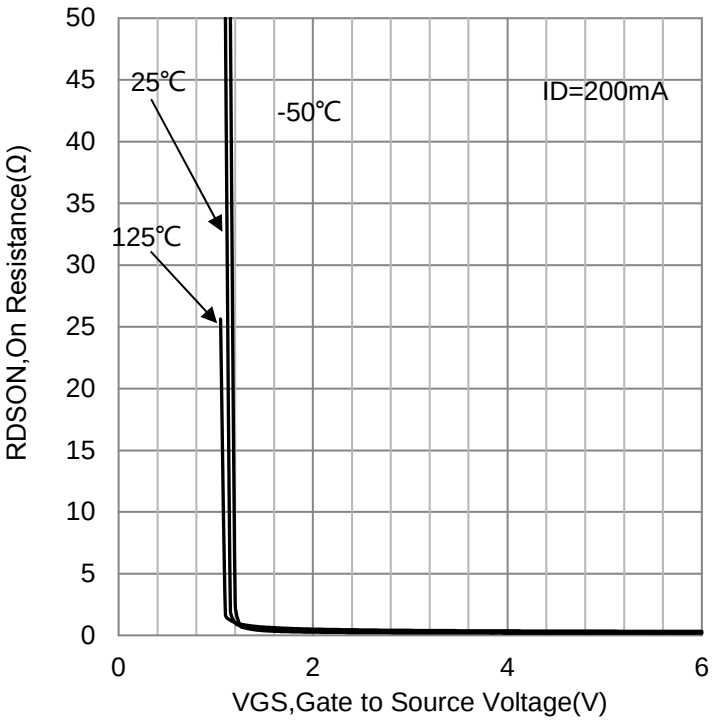


IS vs. VSD

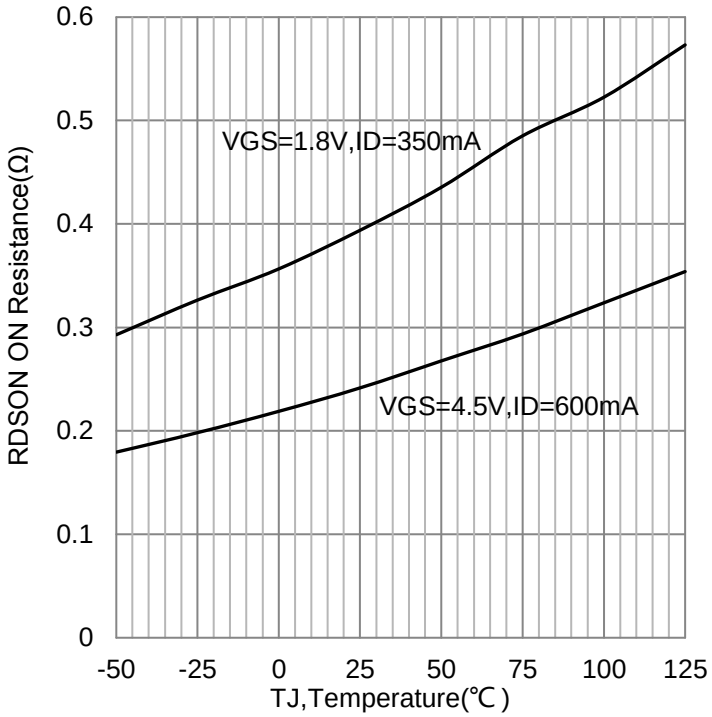


RDSON vs. ID

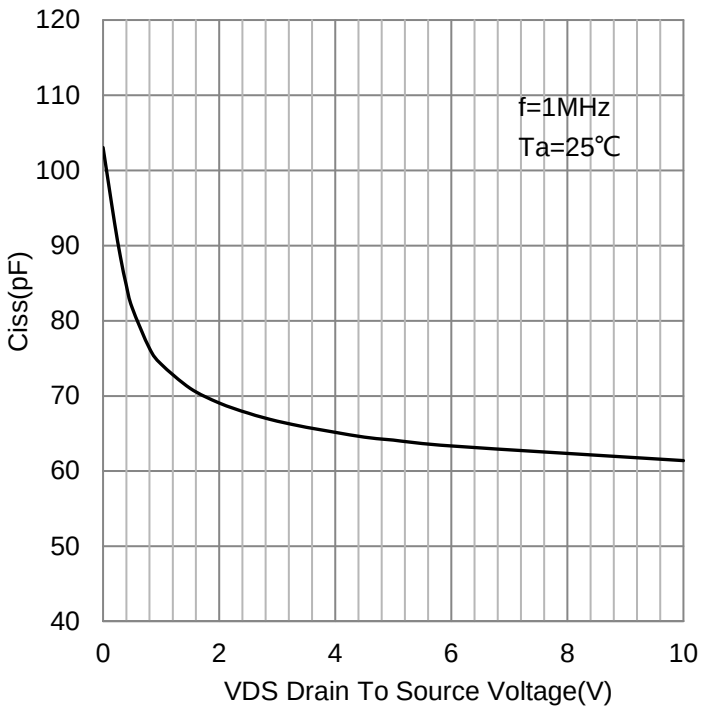
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



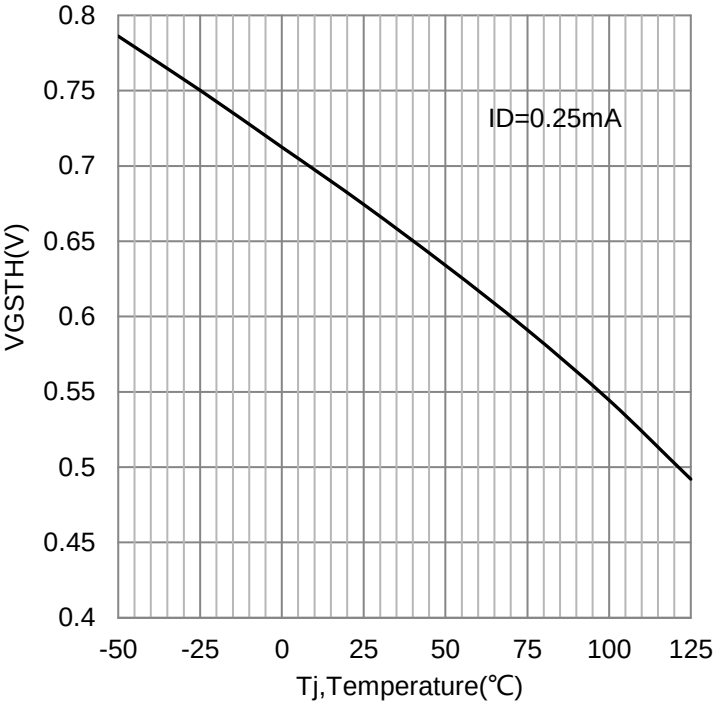
RDSON vs.



RDSON vs. TJ

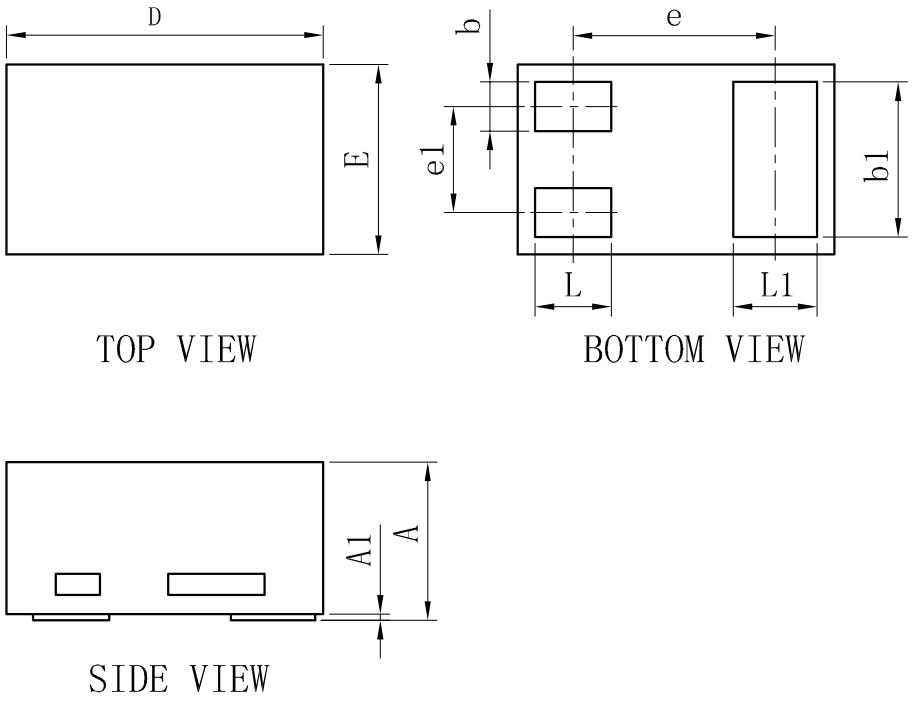


Ciss



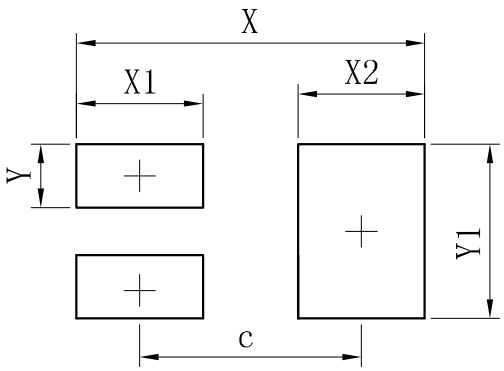
VGSTH vs.

8.OUTLINE AND DIMENSIONS



SOT883			
DIM	MIN	TYP	MAX
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	-	0.64	-
e1	-	0.34	-
L	0.19	0.24	0.29
L1	0.22	0.27	0.32
b	0.10	0.15	0.20
b1	0.44	0.49	0.54
A	0.43	0.48	0.53
A1	0	-	0.05
All Dimensions in mm			

9.SOLDERING FOOTPRINT



Dimensions	(mm)
c	0.70
X	1.10
X1	0.40
X2	0.40
Y	0.20
Y1	0.55

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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