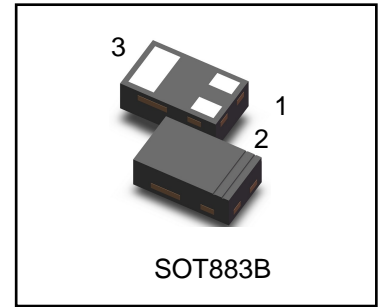


LSI1012BN3T5G

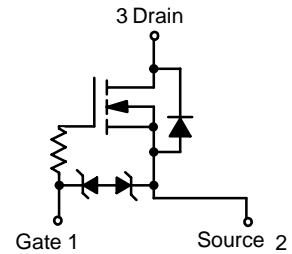
S-LSI1012BN3T5G

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



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
LSI1012BN3T5G	A2	10000/Tape&Reel

5. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	5 secs	Steady State	Unit
Drain-Source Voltage	VDS	20		V
Gate-Source Voltage	VGS	±10		V
Continuous Drain Current (TJ = 150°C) (Note 2)	ID	TA = 25°C	500	mA
		TA = 85°C	350	
Pulsed Drain Current(Note 1)	IDM	1000		
Continuous Source Current (diode conduction)(Note 2)	IS	680		
Maximum Power Dissipation(Note 2)	PD		360	mW
Thermal Resistance, Junction to Ambient	RθJA		500	°C/W
Operating Junction and Storage Temperature Range	TJ , Tstg	-55 ~+150		°C

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Static

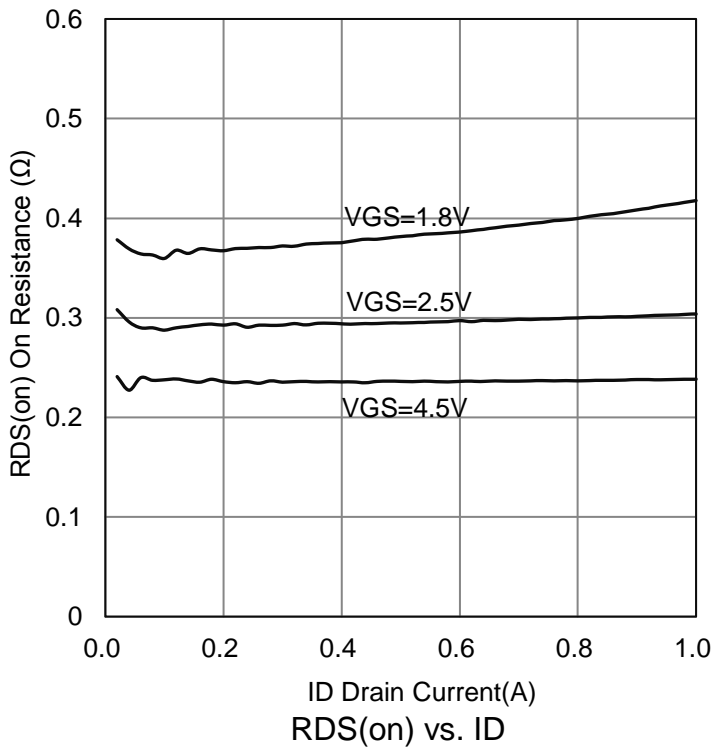
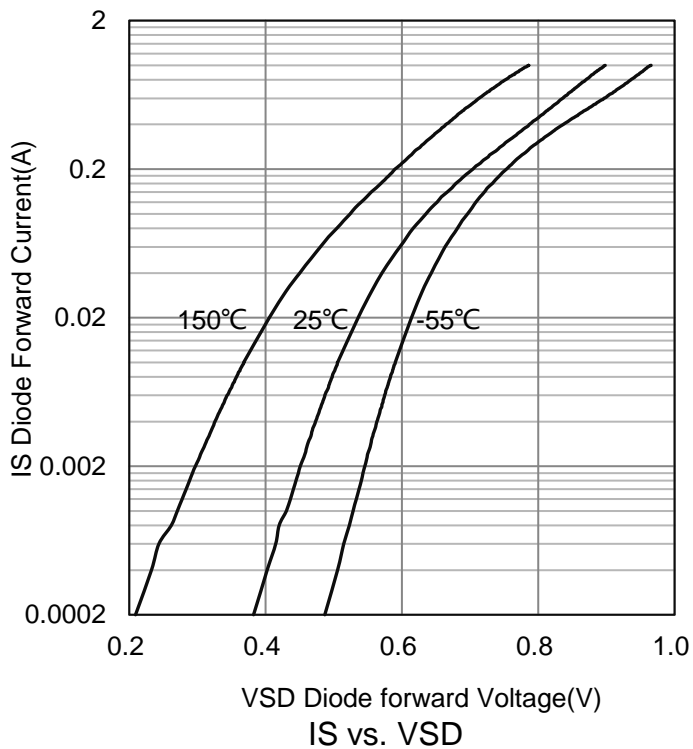
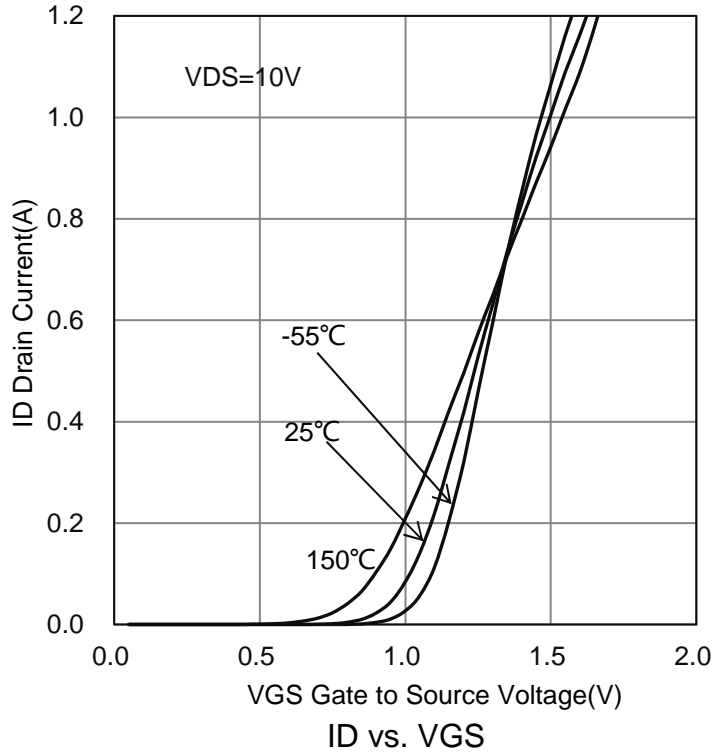
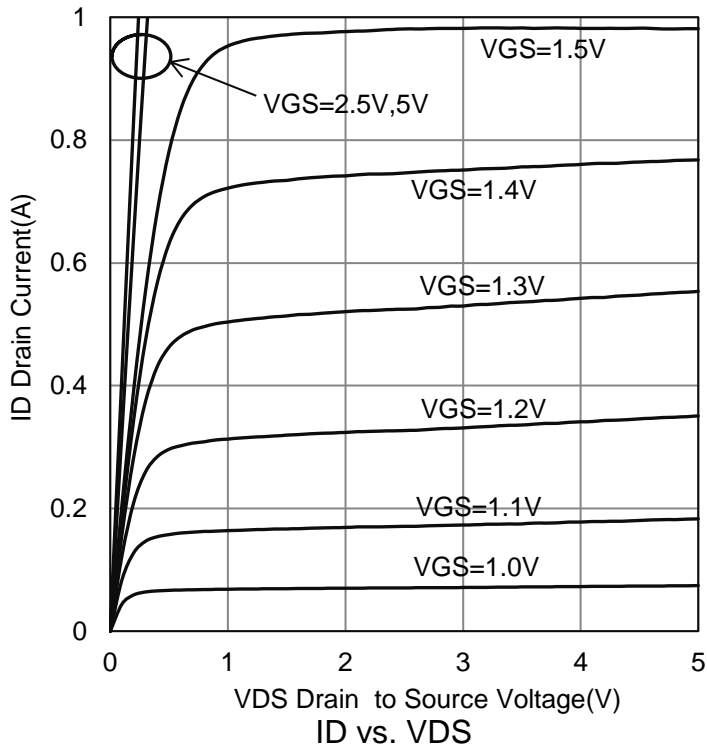
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (VGS = 0 V, IDS = 250μA)	BVDSS	20	-	-	V
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	0.53	-	0.95	V
Gate-Body Leakage (VDS = 0 V, VGS = ±8 V)	IGSS	-	±0.5	±5	μA
Zero Gate Voltage Drain Current (VDS = 16 V, VGS = 0 V) (VDS = 16 V, VGS = 0 V, TJ = 85°C)	IDSS	-	-	1 30	μA
On-State Drain Current(Note 3) (VDS = 5 V, VGS = 4.5 V)	ID(on)	700	-	-	mA
Drain-Source On-State Resistance(Note 3) (VGS = 4.5 V, ID = 0.5 A) (VGS = 2.5 V, ID = 0.2 A) (VGS = 1.8 V, ID = 0.1 A) (VGS = 1.5 V, ID = 0.05A) (VGS = 1.2 V, ID = 0.02 mA)	RDS(on)	-	0.25 0.35 0.4 0.5 1	0.4 0.65 0.8 -	Ω
Forward Transconductance(Note 3) (VDS = 10 V, ID = 400 mA)	gfs	-	1	-	S
Diode Forward Voltage(Note 3) (IS = 0.5A, VGS = 0 V)	VSD	-	0.7	1.3	V

Dynamic(Note 4)

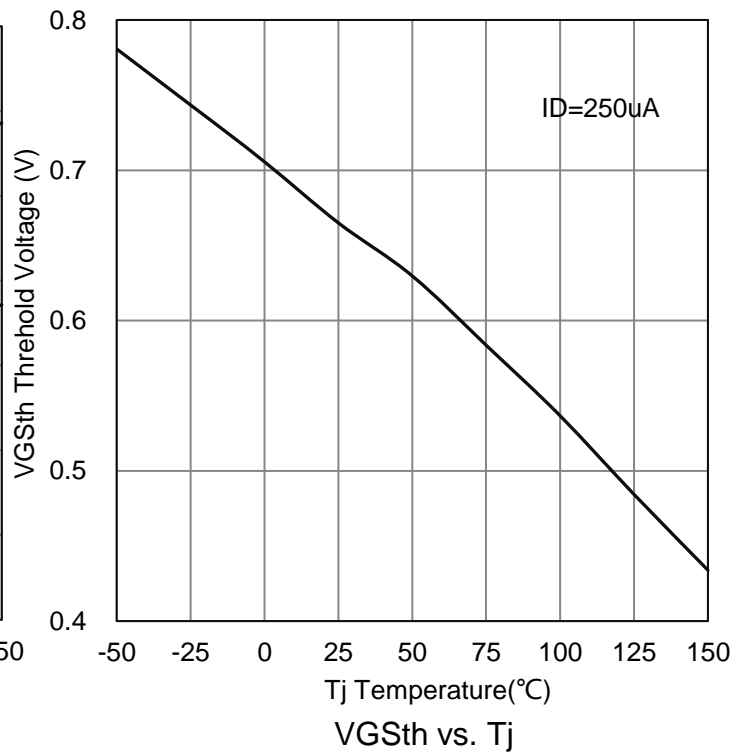
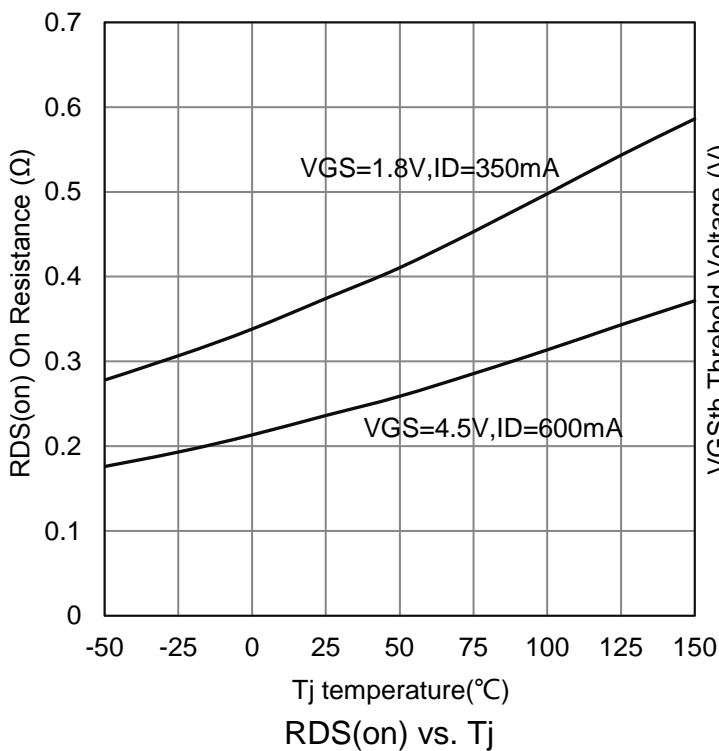
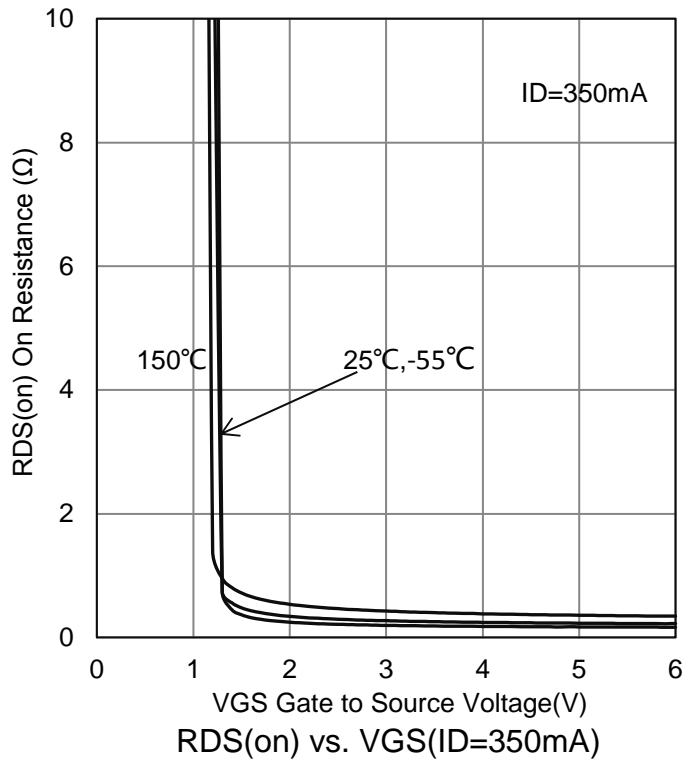
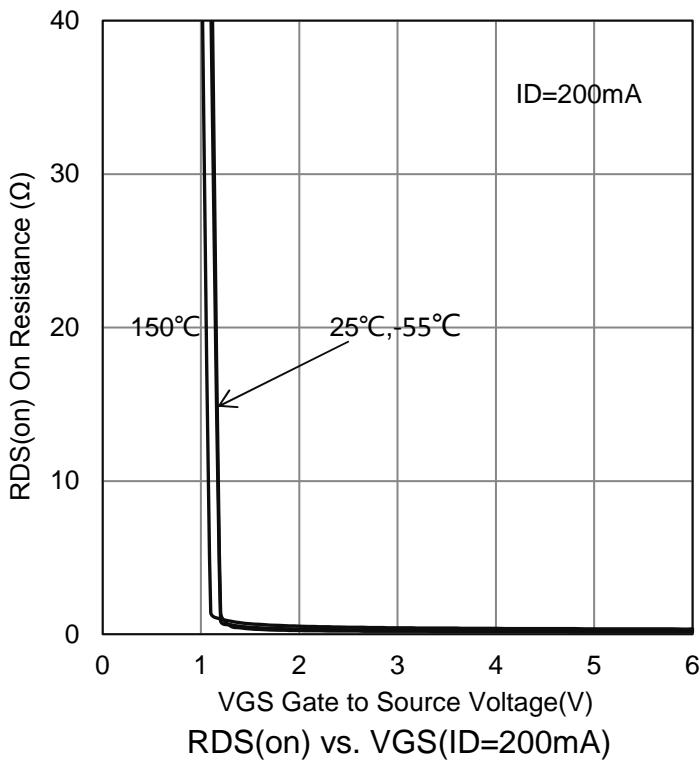
Total Gate Charge(ID=500mA)	(VDS = 10 V, VGS = 4.5 V, ID = 250 mA)	Qg	-	-	0.68	nC
Total Gate Charge(ID=250mA)		Qg	-	750	-	pC
Gate-Source Charge		Qgs	-	75	-	
Gate-Drain Charge		Qgd	-	225	-	
Turn-On Delay Time	(VDD = 10 V, RL = 47Ω, ID=200 mA, VGEN = 4.5 V, RG = 10Ω)	td(on)	-	5	-	ns
Rise Time		tr	-	5	-	
Turn-Off Delay Time		td(off)	-	25	-	
Fall Time		tf	-	11	-	
Input Capacitance	VGS = 0 V, VDS = 10 V, f = 1MHz	Ciss	-	-	83	pF
Output Capacitance		Coss	-	15	-	
Reverse Transfer Capacitance		Crss	-	7	-	

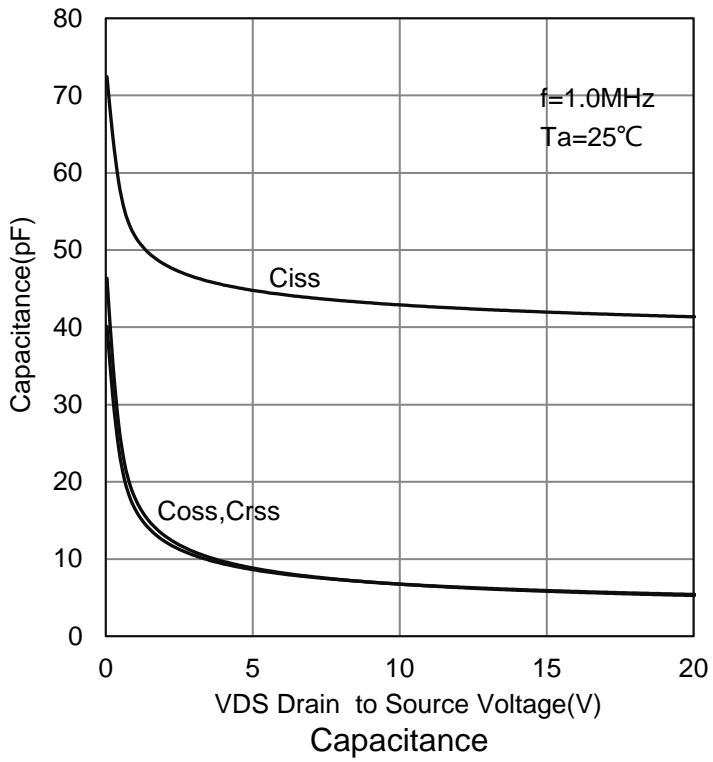
1. Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board.
3. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

7.ELECTRICAL CHARACTERISTICS CURVES

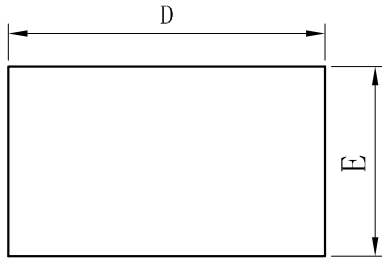


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

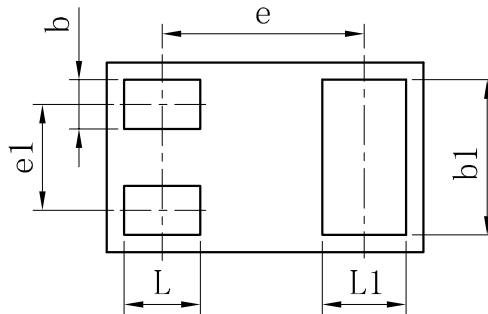


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

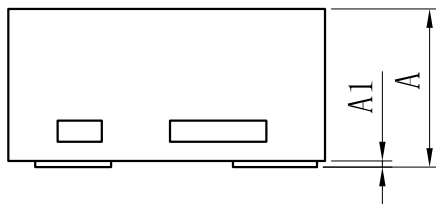
8. OUTLINE AND DIMENSIONS



TOP VIEW



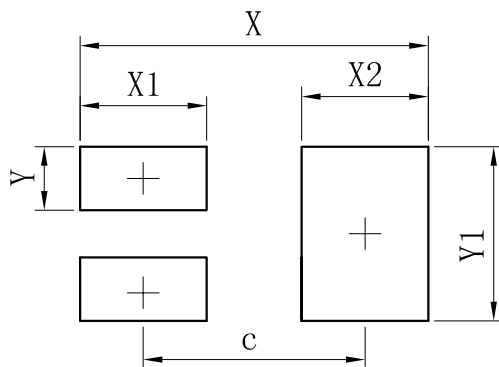
BOTTOM VIEW



SIDE VIEW

SOT883B			
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	0.30	0.35	0.40
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