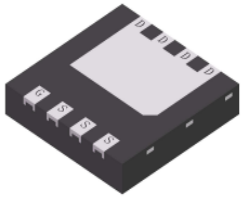
LNB8612DT0AG

N-Channel Shielded Gate Power Trench MOSFET



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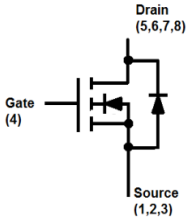


1. FEATURES

- Shielded Gate MOSFET Technology
- High performance technology for extremely low RDS(on)
- RDS(on) ≤ 14 mΩ @VGS = 10 V, ID = 9 A
- RDS(on) ≤ 23 mΩ @VGS = 6 V, ID = 7 A
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Bridge Topologies
- Synchronous Rectifier

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LNB8612DT0AG	B12	2000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC unless otherwise stated)

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	100	V
Gate−to−Source Voltage		VGS	+20/-12	V
Drain Current	TC = 25°C	ID	43	A
	TA = 25°C		9	
Pulsed Drain Current		IDM	50	
Avalanche Current		IAS	35	A
Avalanche energy L=0.1mH		EAS	61.25	mJ
Power Dissipation	TC = 25°C	PD	54	W
	TA = 25°C		2.3	
Operating Junction Temperature		TJ	−55 ~+150	℃
Storage Temperature Range		Tstg	−55 ~+150	

5. THERMAL CHARACTERISTICS

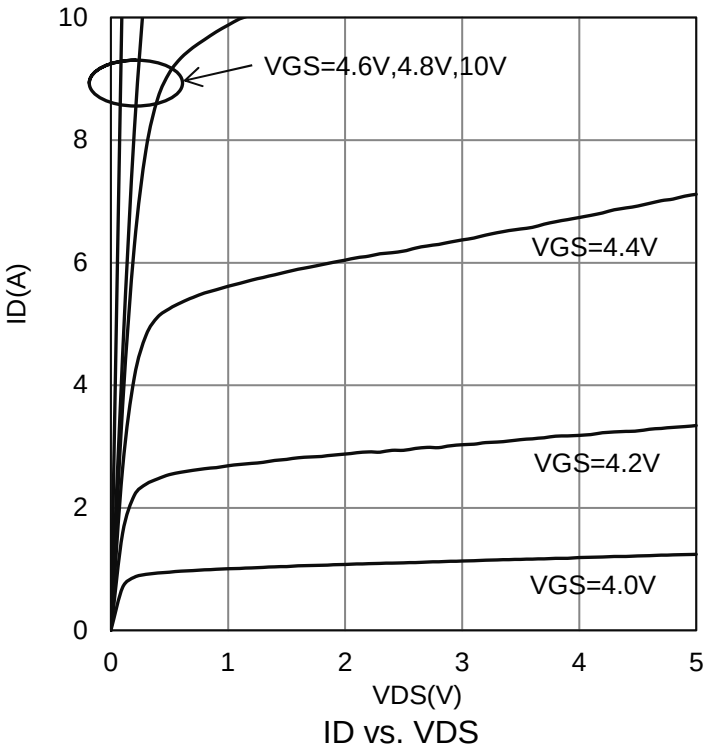
Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	53	℃/W
Maximum Junction-to-Case(Note 1)	RθJC	2.3	℃/W

1. Surface Mounted on 1” x 1” FR4 Board.

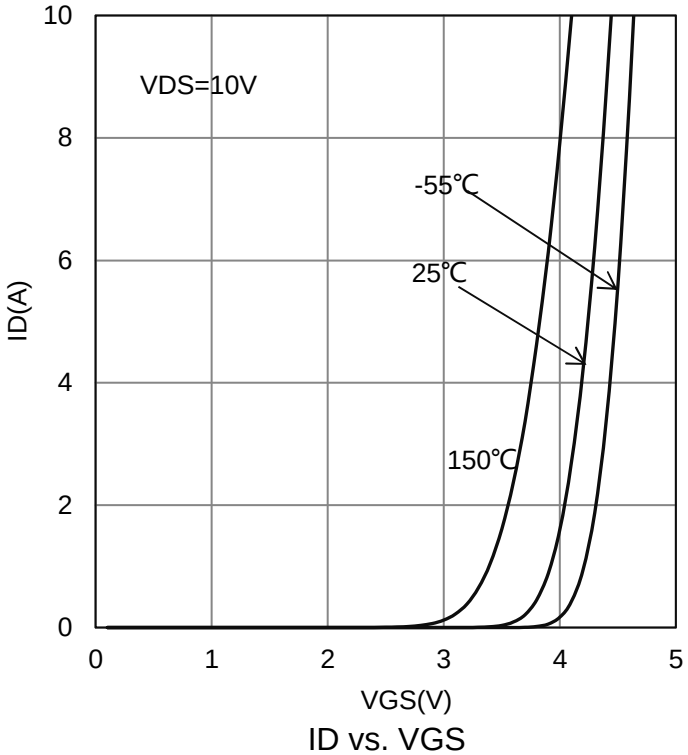
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
Drain to Source Breakdown Voltage (VGS =0V, ID =250μA)		VDSS	100	-	-	V
Drain-to-Source Leakage Current (VDS =80V, VGS =0V)		IDSS	-	-	1	uA
Gate-Body leakage current (VDS =0V, VGS =20V) (VDS =0V, VGS = -12V)		IGSS	- -	- -	+100 -100	nA
Gate Threshold Voltage (VDS = VGS , ID = 250μA)		VGS(th)	2	2.9	4	V
Drain-to-Source On-Resistance (VGS = 10 V, ID = 9 A) (VGS = 6 V, ID = 7 A)		RDS(ON)	- -	11.2 16	14 23	mΩ
Gate Resistance		Rg	-	1	-	Ω
Total Gate Charge VGS(0 ~10 V)	(ID =9A,VDD =50V)	Qg	-	42	-	nC
Total Gate Charge VGS(0 ~6 V)		Qg	-	29	-	
Gate to Source Charge		Qgs	-	11	-	
Gate to Drain Charge		Qgd	-	13	-	
Turn-on Delay Time	(VDD = 50V, ID = 9A, RG = 6 Ω,VGS = 10V)	td(on)	-	9.7	-	nS
Rise Time		tr	-	3.6	-	
Turn-Off Delay Time		td(off)	-	16	-	
Fall Time		tf	-	3.4	-	
Input Capacitance	(VGS = 0V ,VDS = 50V, f = 1MHz)	Ciss	-	2640	-	pF
Output Capacitance		Coss	-	530	-	
Reverse Transfer Capacitance		Crss	-	33	-	
Diode Forward Voltage (VGS = 0 V, IS = 1A)		VSD	-	-	1	V
Reverse Recovery Time (IF = 1A, di/dt = 100 A/μs)		trr	-	50	-	nS
Reverse Recovery Charge (IF = 1A, di/dt = 100 A/μs)		Qrr	-	75	-	nC

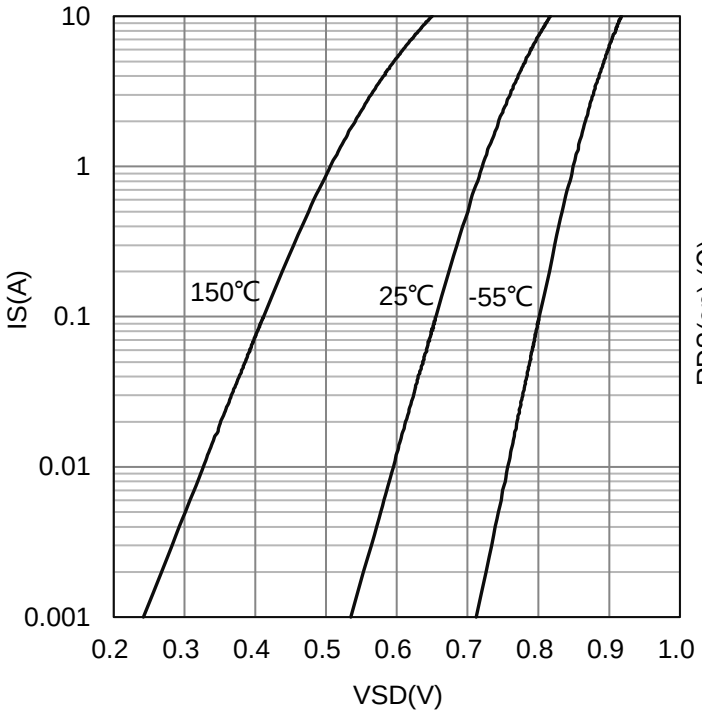
7.ELECTRICAL CHARACTERISTICS CURVES



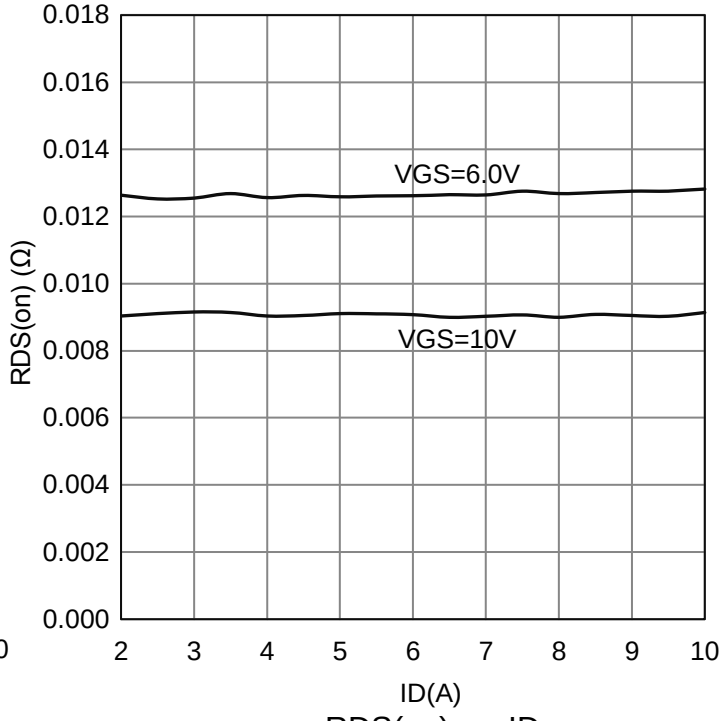
ID vs. VDS



ID vs. VGS

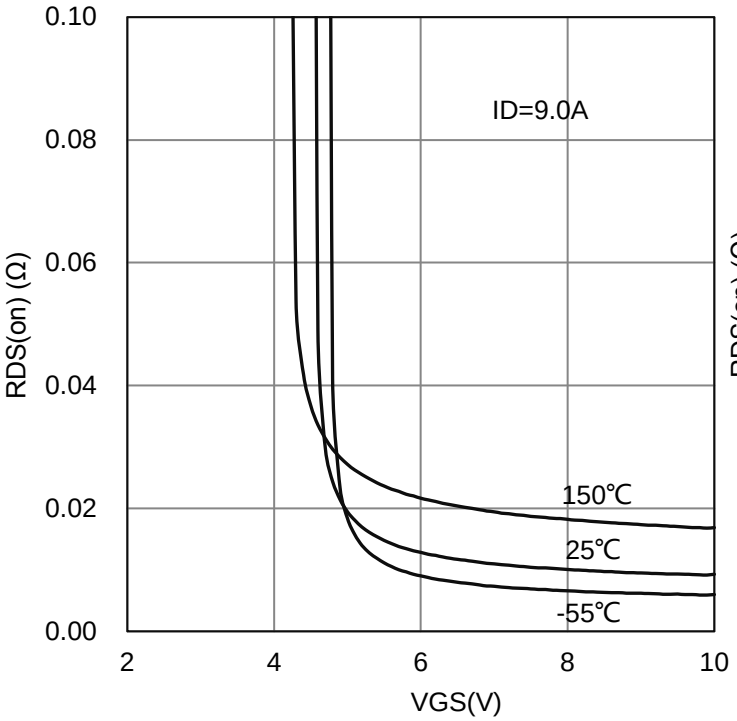


IS vs. VSD

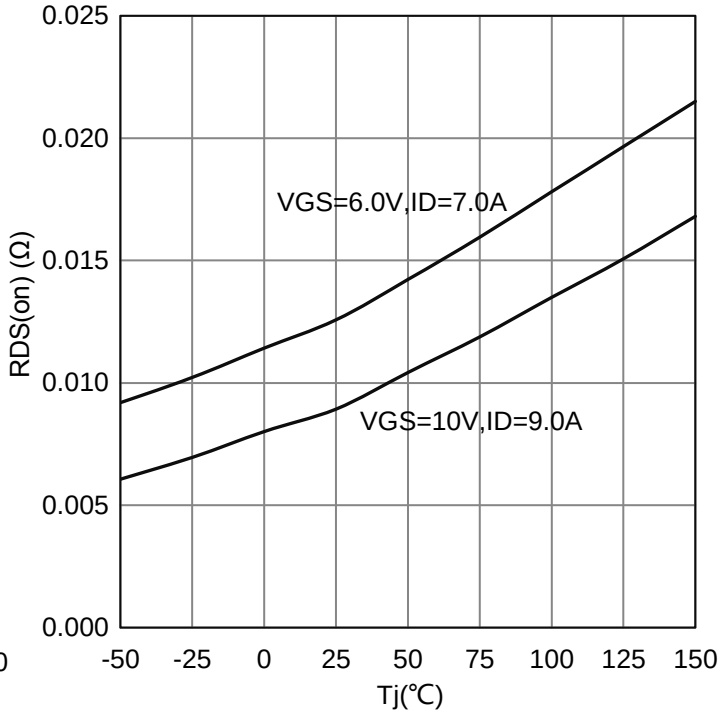


RDS(on) vs. ID

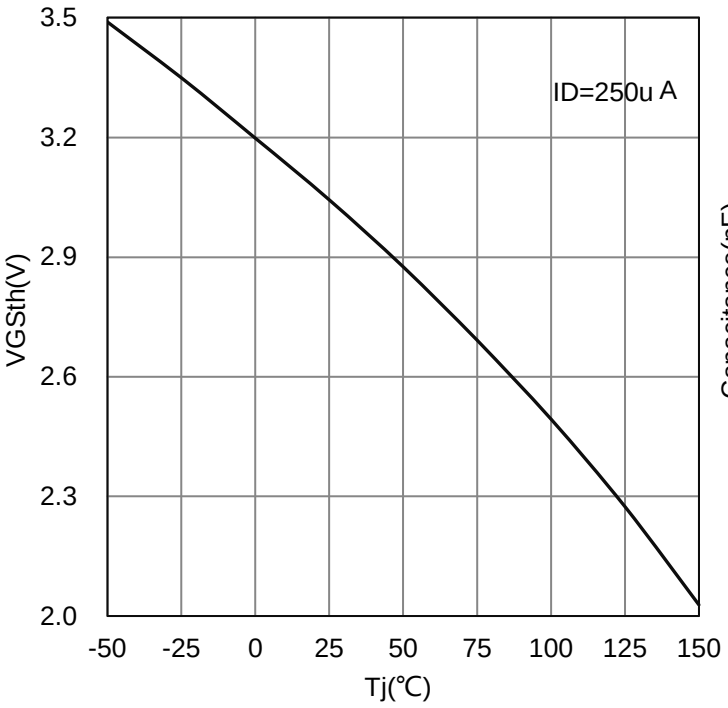
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



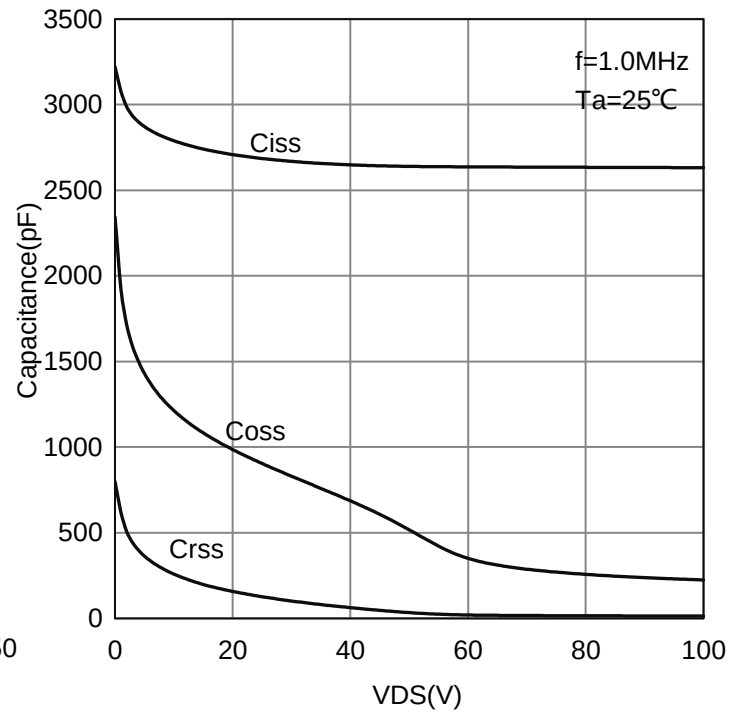
RDS(on) vs. VGS



RDS(on) vs. Tj



VGSth vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS

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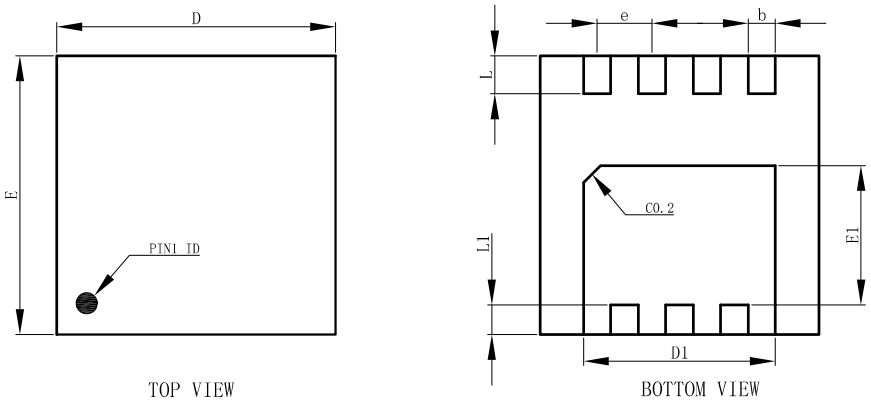

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DIM	MIN	NOR	MAX
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.27	0.32	0.37
D	3.25	3.30	3.35
E	3.25	3.30	3.35
D1	2.22	2.27	2.32
E1	1.60	1.65	1.70
e	0.65BSC		
L	0.40	0.45	0.50
L1	0.30	0.35	0.40
A3	0.152REF.		
All Dimensions in mm			

9.SOLDERING FOOTPRINT

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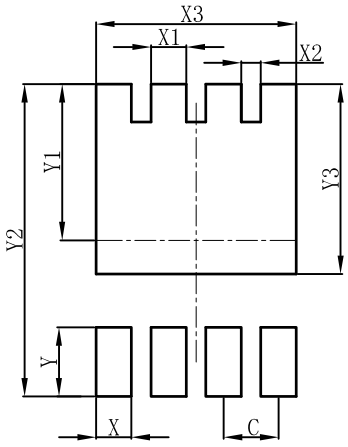

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DIM	(mm)
C	0.65
X	0.42
X1	0.42
X2	0.23
X3	2.37
Y	0.70
Y1	1.85
Y2	3.70
Y3	2.25

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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