LN05N15TZHG

N-Channel 150-V Power MOSFET

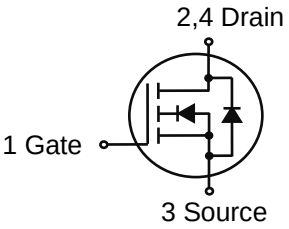
SOT223

1. FEATURES

- High Speed Power Switching.
- Enhanced Avalanche Ruggedness.
- Lead Free, HalogenFree.
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

2. APPLICATION

- Synchronous Rectification in SMPS.
- Hard Switching and High Speed Circuit.



3. ORDERING INFORMATION

Device	Marking	Shipping
LN05N15TZHG	TN	1000/Tape&Reel

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

Parameter		Symbol	Limits	Unit
Drain−to−Source Voltage		VDSS	150	V
Gate−to−Source Voltage		VGS	±20	V
Continuous Drain Current(Note 1)	TA =25°C	ID	4	A
Pulsed Drain Current (Note 2)		IDM	16	
Power Dissipation(Note 1)	TA =25°C	PD	1.9	W
Operating Junction Temperature		TJ	−55 ~+150	℃
Storage Temperature Range		Tstg	−55 ~+150	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Thermal Resistance,Junction–to–Ambient(Note 1)	RΘJA	65	℃/W
Thermal Resistance,Junction-to-Case (Note 3)	RθJA	150	℃/W
Thermal Resistance,Junction-to-Case (Note 3)	RθJC	7	℃/W

1."1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

2.Pulse width limited by maximum junction temperature

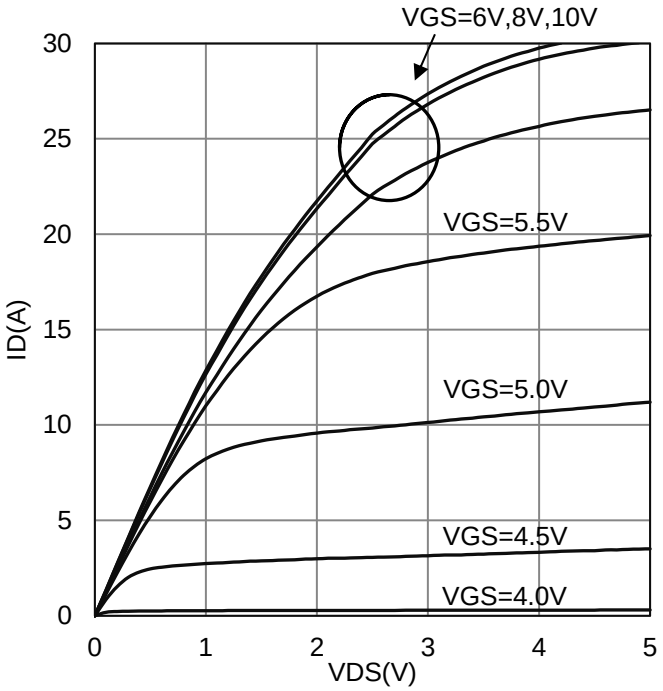
3.Surface−mounted on FR4 board using the minimum recommended pad size.

6. ELECTRICAL CHARACTERISTICS

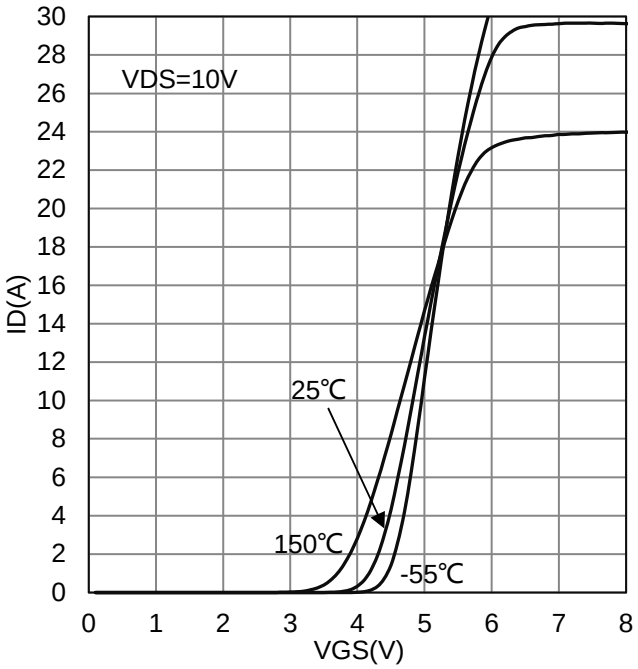
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)		VBRDSS	150	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 uA)		VGS(th)	2	3	4	V
Gate-Body Leakage (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 150 V, VGS = 0 V)		IDSS	-	-	1	μA
Drain-Source On-Resistance(Note 4) (VGS = 10 V, ID = 3 A)		RDS(on)	-	58	75	mΩ
Diode Forward Voltage(Note 4) (IS = 1A, VGS = 0 V)		VSD	-	0.9	1.2	V
Dynamic						
Total Gate Charge	(VDS = 75 V, VGS = 10 V,ID = 10 A)	Qg	-	7.6	-	nC
Gate-Source Charge		Qgs	-	2.8	-	
Gate-Drain Charge		Qgd	-	1.9	-	
Turn-On Delay Time	(VDS = 75 V, VGS = 10 V,ID = 10 A,RG=10 Ω)	td(on)	-	9	-	ns
Rise Time		tr	-	4	-	
Turn-Off Delay Time		td(off)	-	11	-	
Fall Time		tf	-	3	-	
Input Capacitance	(VDS = 75 V, VGS = 0 V, f = 1 MHz)	Ciss	-	578	-	pF
Output Capacitance		Coss	-	46	-	
Reverse Transfer Capacitance		Crss	-	1.6	-	

4.Pulse test: PW≤ 300μs duty cycle ≤ 2%.

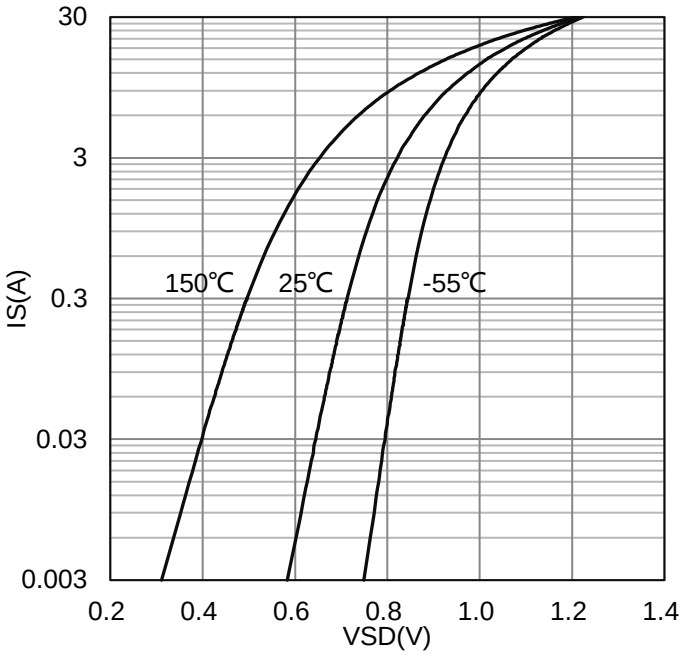
7. ELECTRICAL CHARACTERISTICS CURVES



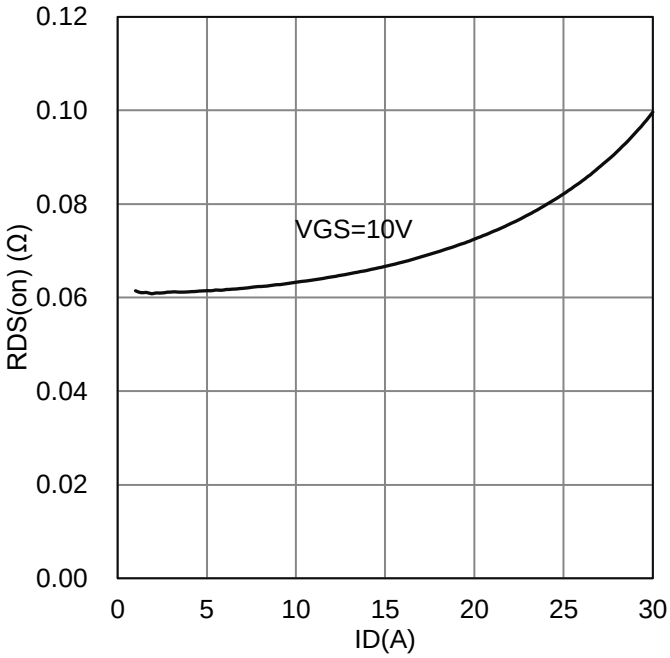
ID vs. VDS



ID vs. VGS

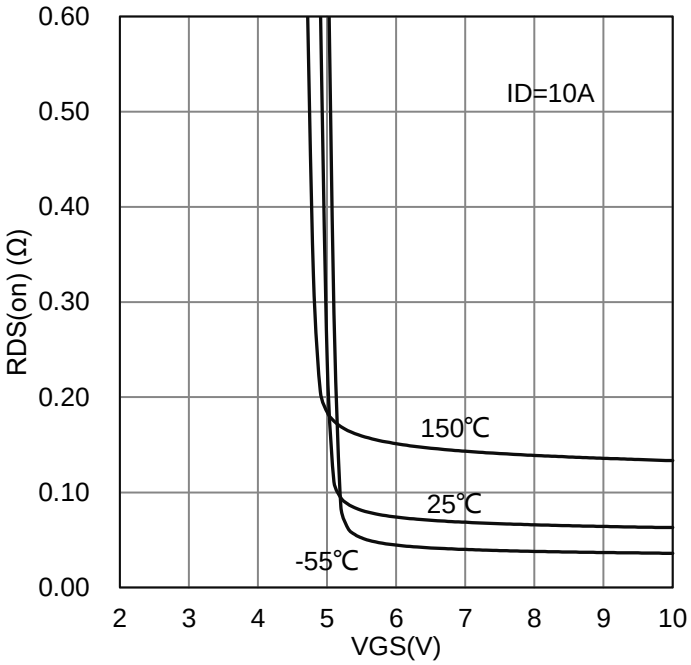


IS vs. VSD

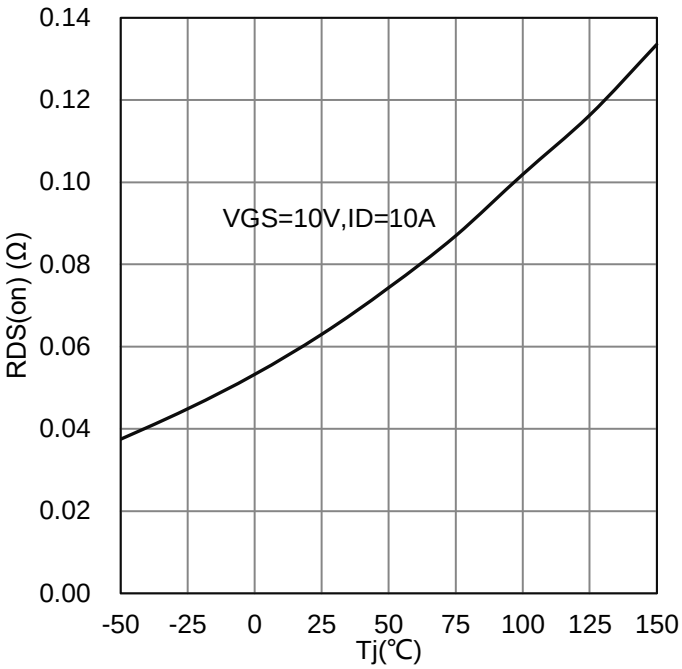


RDS(on) vs. ID

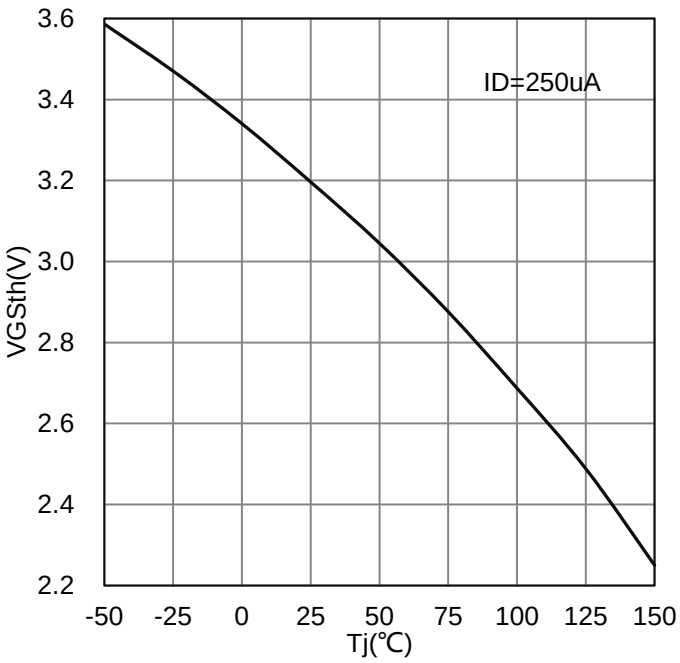
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



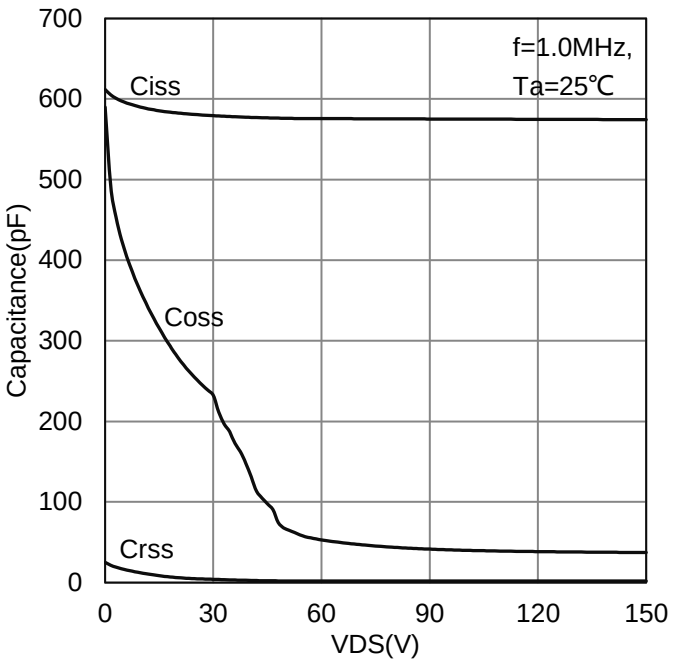
RDS(on) vs. VGS



RDS(on) vs. Tj

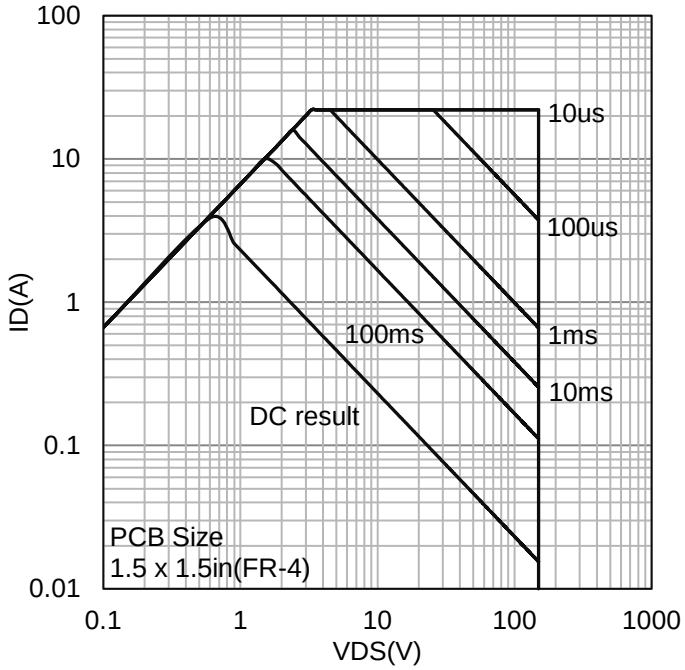


VGSth vs. Tj

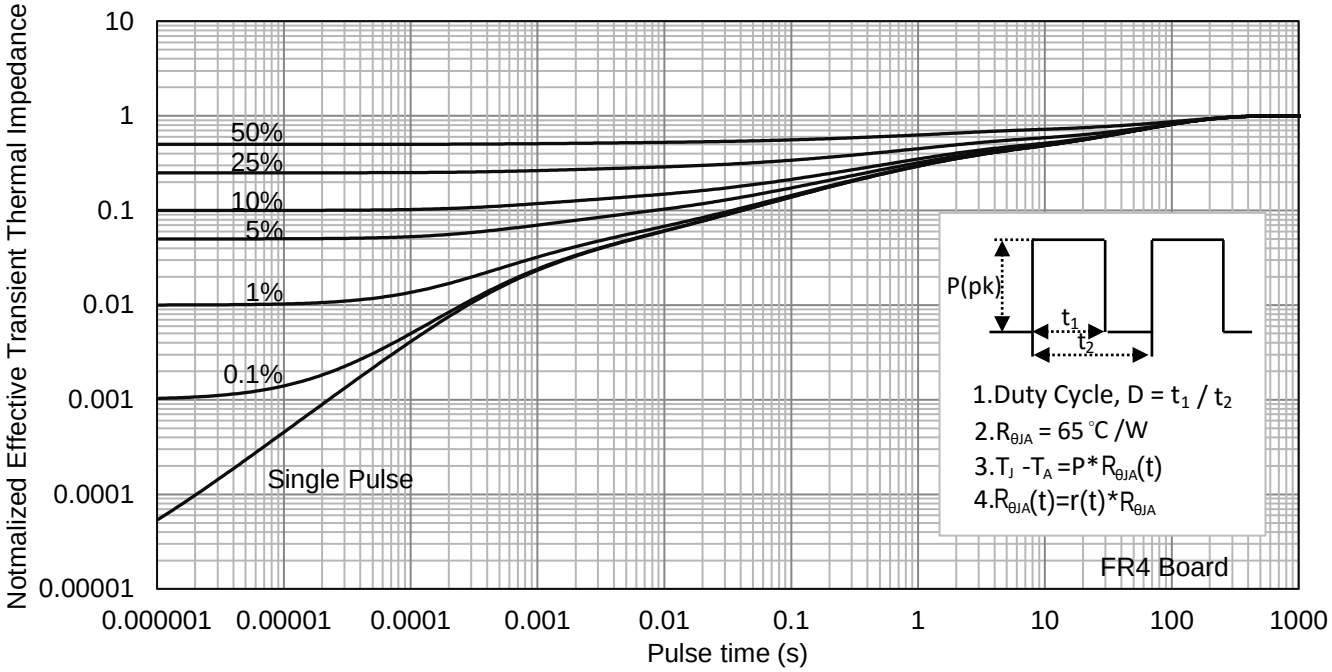


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



Safe Operating Area



Thermal Response

8.OUTLINE AND DIMENSIONS

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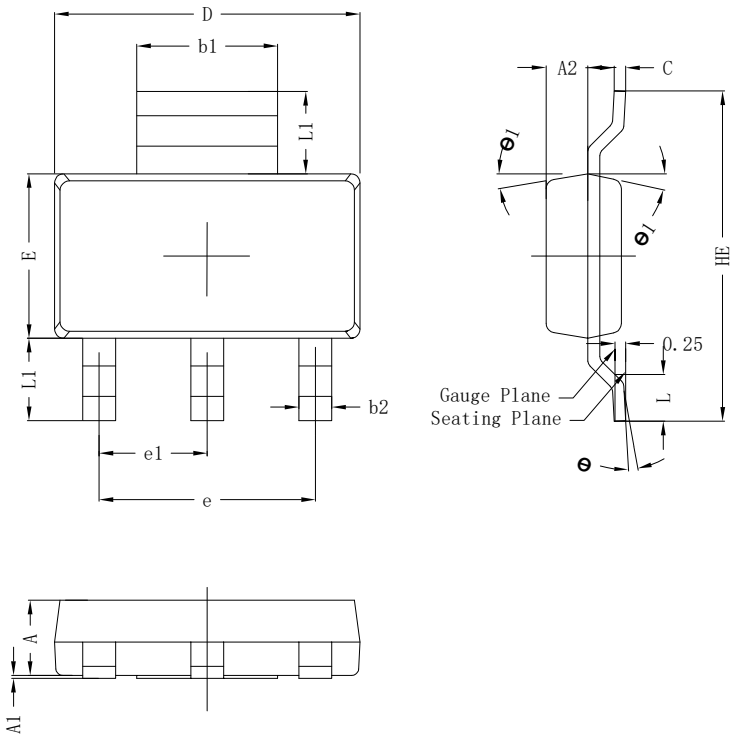
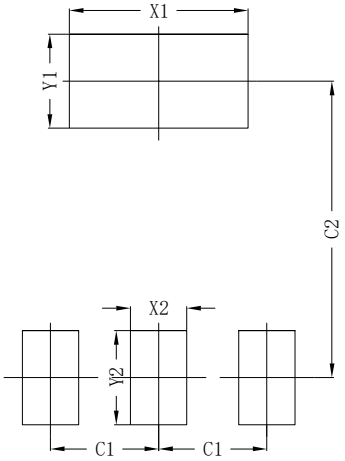


SOT223			
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ1	8°	10°	12°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um
4. Protrusion or Gate Burrs shall not exceed 0.10mm per side.

9.SOLDERING FOOTPRINT



SOT223	
DIM	(mm)
X1	3.80
Y1	2.00
X2	1.20
Y2	2.00
C1	2.30
C2	6.30

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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