

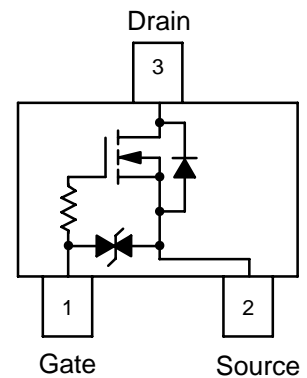
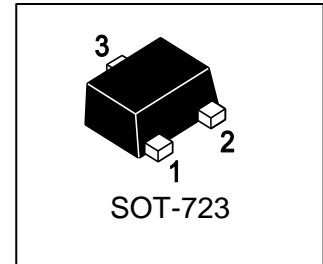
LNTK3043NT5G

S-LNTK3043NT5G

20 V, 285 mA, N-Channel Power MOSFET

1. FEATURES

- Enables High Density PCB Manufacturing
- 44% Smaller Footprint than SC-89 and 38% Thinner than SC-89
- Low Voltage Drive Makes this Device Ideal for Portable Equipment
- Low Threshold Levels, $V_{GS(TH)} < 1.3\text{ V}$
- Low Profile ($< 0.5\text{ mm}$) Allows It to Fit Easily into Extremely Thin Environments such as Portable Electronics
- Operated at Standard Logic Level Gate Drive, Facilitating Future Migration to Lower Levels Using the Same Basic Topology
- These are Pb-Free Devices
- 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. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LNTK3043NT5G	KA	8000/Tape&Reel

3. MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Limits	Unit	
Drain-to-Source Voltage		VDSS	20	V	
Gate-to-Source Voltage		VGS	± 10	V	
Continuous Drain Current (Note 1)	Steady State	ID	TA = 25°C	255	mA
			TA = 85°C	185	
	t ≤ 5 s	TA = 25°C	285		
Power Dissipation(Note 1)	Steady State	PD	TA = 25°C	440	mW
	t ≤ 5 s			545	
Continuous Drain Current (Note 2)	Steady State	ID	TA = 25°C	210	mA
			TA = 85°C	155	
Power Dissipation(Note 2)	Steady State	PD	TA = 25°C	310	mW
Pulsed Drain Current(tp = 10 μs)		IDM	400	mA	
Source Current (Body Diode) (Note 2)		IS	286	mA	
Operating Junction and Storage Temperature		TJ, Tstg	-55~+150	°C	
Lead Temperature for Soldering Purposes (1/8 " from case for 10 s)		TL	260	°C	

4. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Thermal Resistance-Junction to Ambient	Steady State(Note 1)	R θ JA	280	°C/W
	t = 5 s(Note 1)		228	
	Steady State(Note 2)		400	

1.Surface-mounted on FR4 board using 1 in sq pad size (Cu area = 1.127 in sq [1 oz] including traces)

2.Surface-mounted on FR4 board using the minimum recommended pad size.

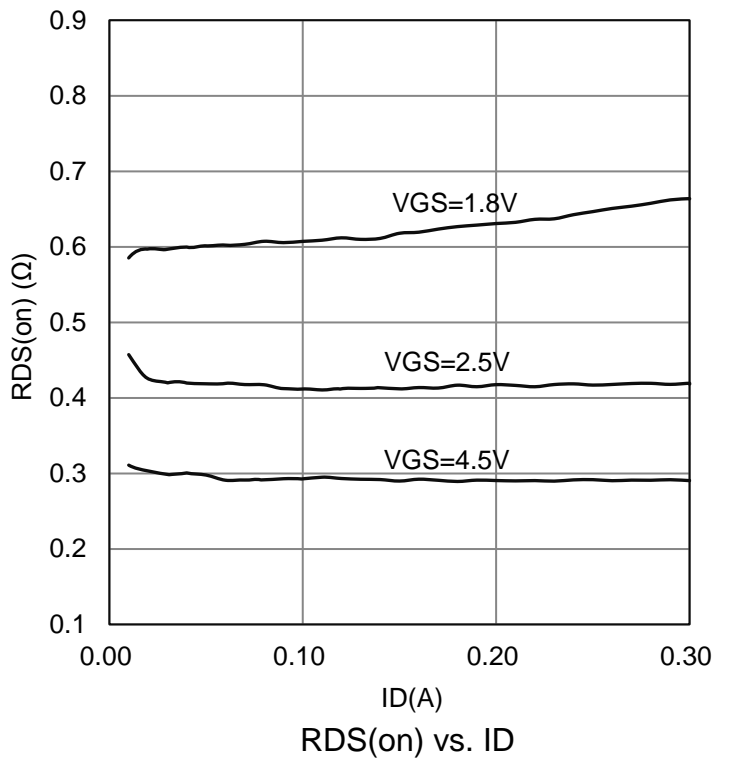
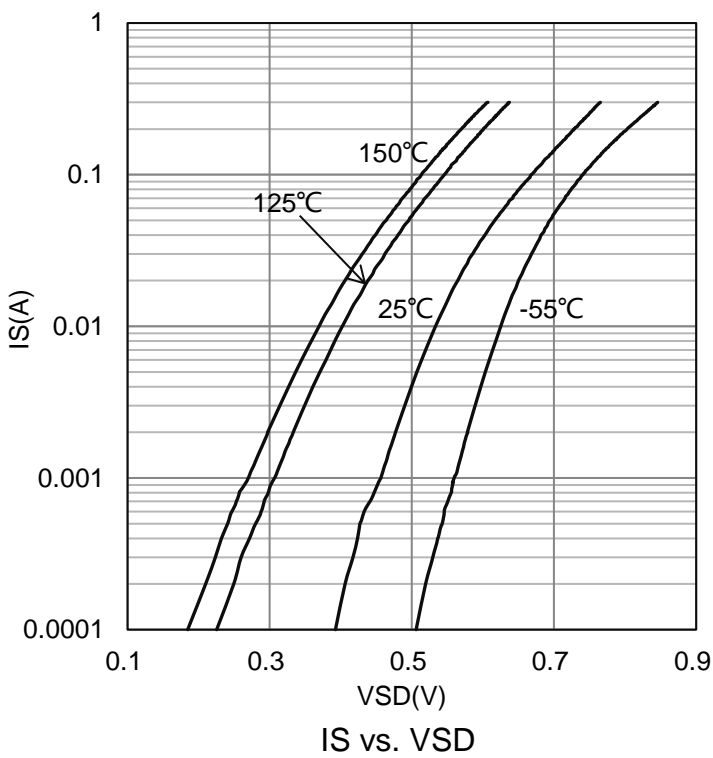
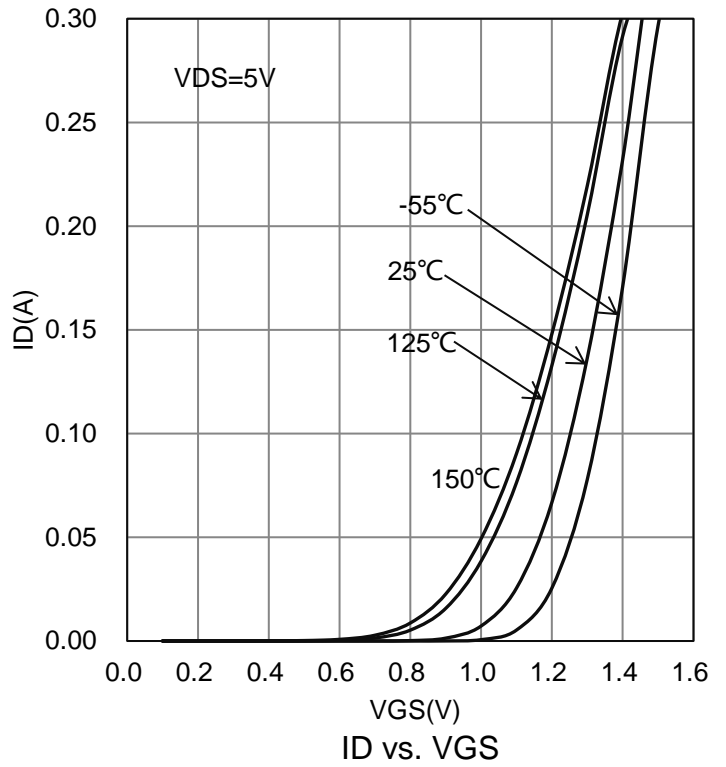
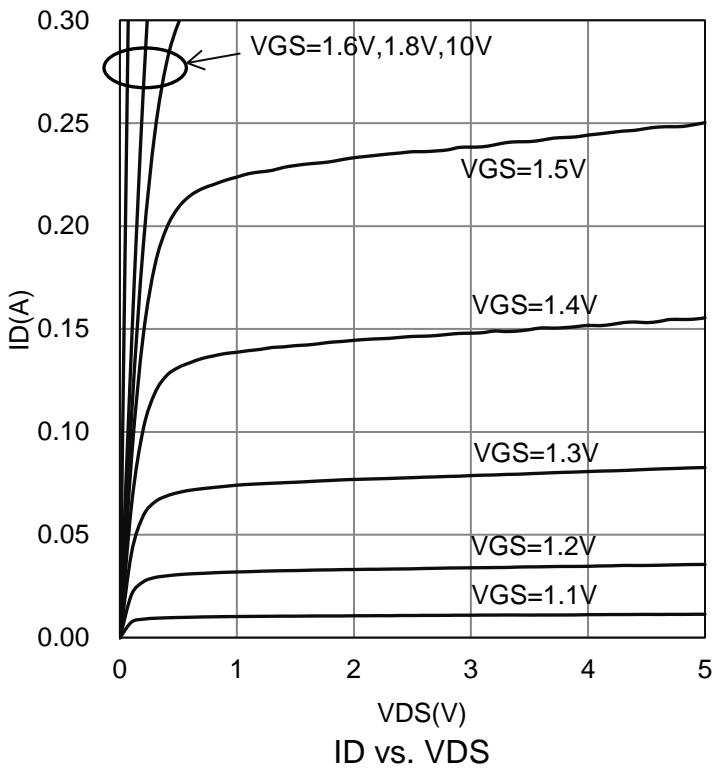
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0, ID = 100 μ A)	VBRDSS	20	-	-	V
Drain-to-Source Breakdown Voltage Temperature Coefficient	VBRDSS/TJ	-	27	-	mV/°C
Zero Gate Voltage Drain Current (VGS = 0, VDS = 16 V, TJ = 25°C) (VGS = 0, VDS = 16 V, TJ = 125°C)	IDSS	-	-	1 10	μ A
Gate-Body Leakage Current (VDS = 0 V, VGS = \pm 5 V)	IGSS	-	-	\pm 1	μ A
Gate Threshold Voltage (VDS = VGS, ID = 250 μ A)	VGS(th)	0.4	-	1.3	V
Gate Threshold Temperature Coefficient	VGS(TH)/TJ	-	-2.4	-	mV/°C
Static Drain-Source On-State Resistance (VGS = 4.5V, ID = 10 mA) (VGS = 4.5V, ID = 255 mA) (VGS = 2.5 V, ID = 1 mA) (VGS = 1.8 V, ID = 1 mA) (VGS = 1.65 V, ID = 1 mA)	RDS(on)	-	1.5 1.6 2.4 5.1 6.8	3.4 3.8 4.5 10 15	Ω
DYNAMIC					
Input Capacitance	(VGS=0 V, f=1 MHz, VDS=10 V)	Ciss	-	55	pF
Output Capacitance		Coss	-	11.5	
Reverse Transfer Capacitance		Crss	-	7	
Turn-On Delay Time	(VGS = 4.5 V, VDD = 5 V, ID = 10 mA, RG = 6 Ω)	td(on)	-	4.8	ns
Rise Time		tr	-	2.4	
Turn-Off Delay Time		td(off)	-	32	
Fall Time		tf	-	69	
Diode Forward Voltage (VGS = 0 V, IS = 286 mA)	TJ = 25°C TJ = 125°C	VSD	-	0.83 0.69	V
Reverse Recovery Time	(VGS=0 V, VDD =20 V, dISD/dt=100 A/ μ s, IS=286 mA)	tRR	-	9.1	ns
Charge Time		ta	-	7.1	
Discharge Time		tb	-	2.0	
Reverse Recovery Charge		QRR	-	3.7	

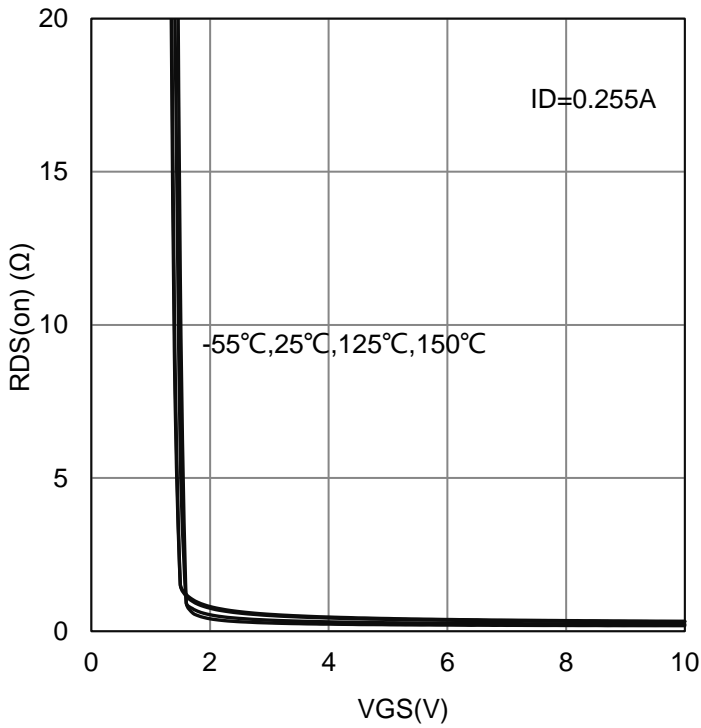
3.Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

4.Switching characteristics are independent of operating junction temperatures

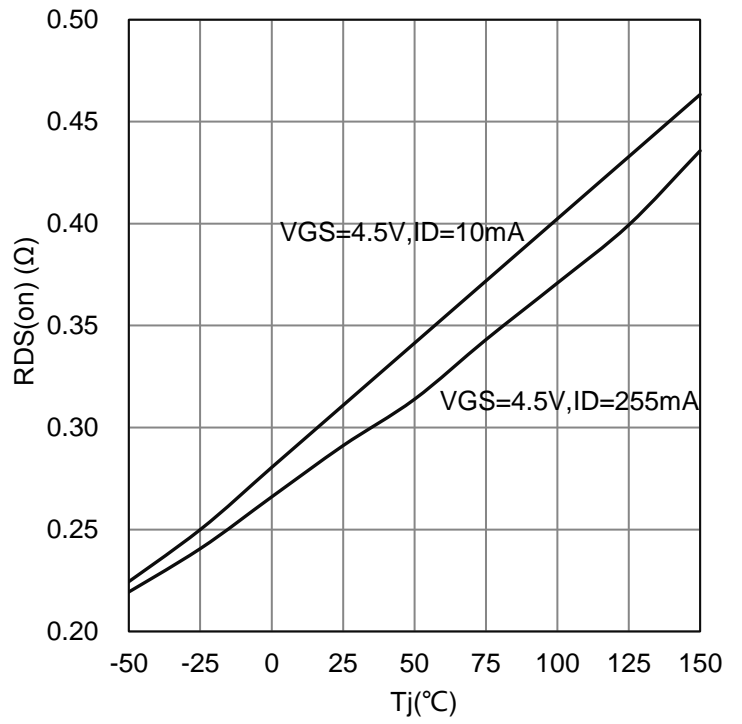
6. ELECTRICAL CHARACTERISTICS CURVES



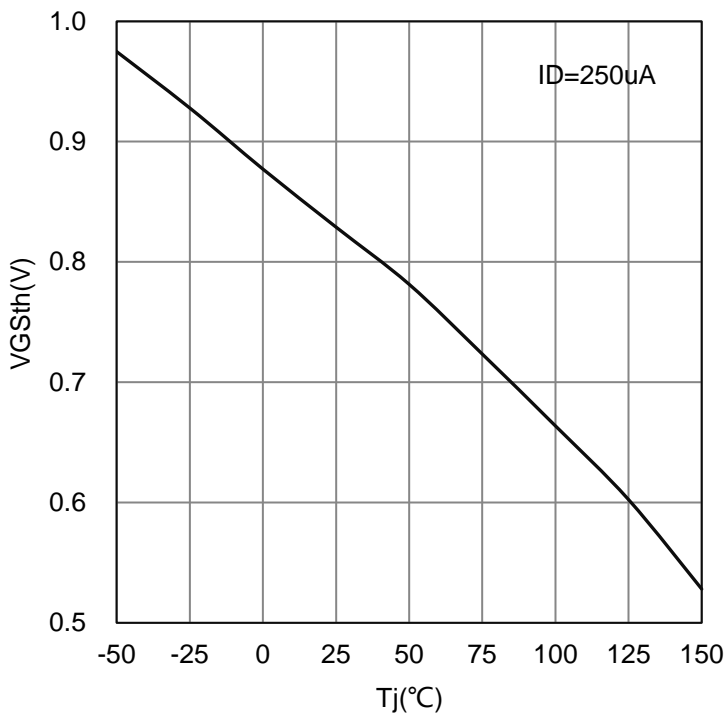
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



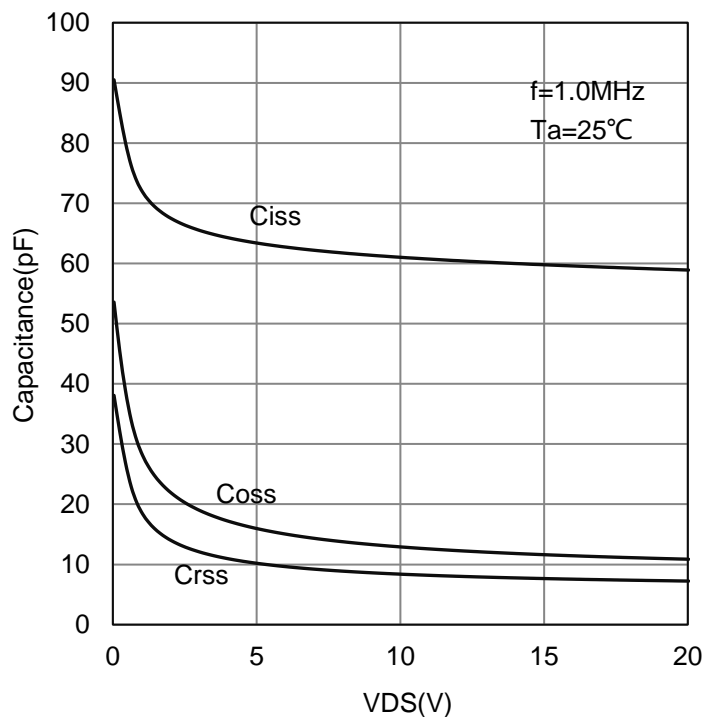
RDS(on) vs. VGS



RDS(on) vs. Tj

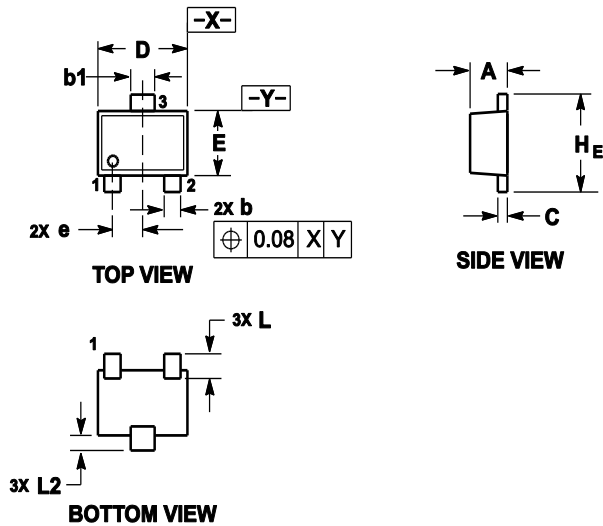


VGSth vs. Tj



Capacitance

7. OUTLINE AND DIMENSIONS

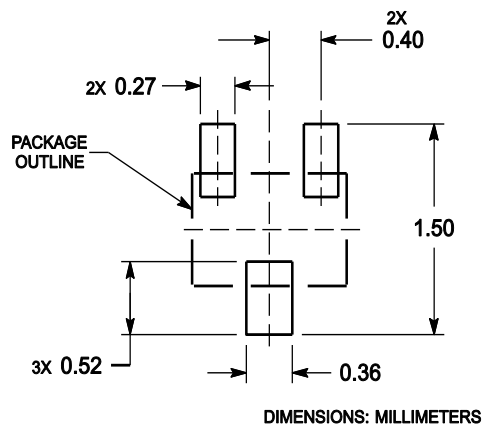


Notes:

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 E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.039
b	0.15	0.21	0.27	0.006	0.008	0.011
b1	0.25	0.31	0.37	0.010	0.012	0.015
C	0.07	0.12	0.17	0.003	0.005	0.007
D	1.15	1.20	1.25	0.045	0.047	0.049
E	0.75	0.80	0.85	0.030	0.031	0.033
e	0.40REF			0.016REF		
H _E	1.15	1.20	1.25	0.045	0.047	0.049
L	0.29REF			0.011REF		
L ₂	0.15	0.20	0.25	0.006	0.008	0.010

8. 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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