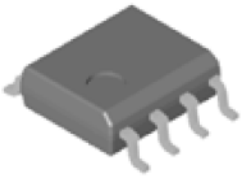
LN4404T1G

N-Channel 30-V (D-S) MOSFET

SO-8

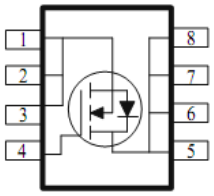


1. FEATURES

- Low RDS(on) trench technology
- Low thermal impedance
- Fast switching speed

2. APPLICATIONS

- DC/DC Conversion
- Power Routing
- Motor Drives



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN4404T1G	4404	4000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain–Source Voltage		VDSS	30	V
Gate-Source Voltage		VGS	±20	V
Avalanche Current		IAS	17	A
Avalanche energy L=0.1mH		EAS	14.5	mJ
Continuous Drain Current(Note 1)	TA =25℃	ID	16	A
	TA =70℃		13.2	
Pulsed Drain Current(Note 2)		IDM	60	A
Continuous Source Current(Diode Conduction)(Note		IS	4.1	A
Power Dissipation(Note 1)	TA =25℃	PD	3.1	W
	TA =70℃		2.2	
Operating Junction and Storage Temperature Range		TJ,Tstg	-55~+150	℃

1. Surface Mounted on 1” x 1” FR4 Board.
2.Pulse width limited by maximum junction temperature

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Thermal Resistance, Junction–to–Ambient(Note 1)	t≤10 sec	RΘJA	40	ºC/W
	Steady State		80	ºC/W

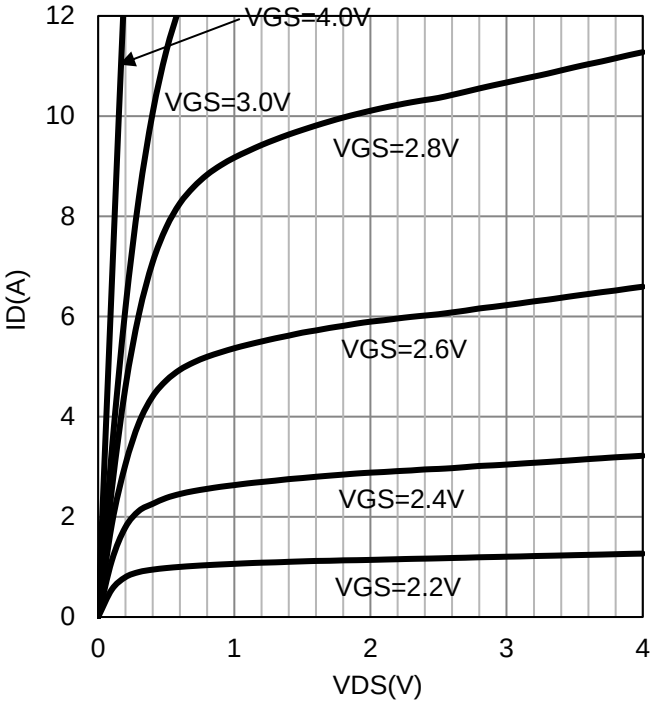
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC						
Gate-Source Threshold Voltage (VDS =VGS , ID =250μA)		VGS(th)	1	-	-	V
Gate-Body Leakage Current (VDS =0V, VGS =±20V)		IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = 24 V, VGS = 0 V) (VDS = 24 V, VGS = 0 V,TJ = 55°C)		IDSS	- -	- -	1 10	μA
On-State Drain Current(Note 3) (VDS = 5 V, VGS = 10 V)		ID(on)	25			A
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 12.5 A) (VGS = 4.5 V, ID = 10 A)		RDS(ON)	- -	- -	10 16.5	mΩ
Forward Transconductance(Note 3) (VDS = 15 V, ID = 12.5 A)		gfs	-	9	-	S
Diode Forward Voltage(Note 3) (IS = 2.05 A, VGS = 0 V)		VSD	-	0.77	-	V
DYNAMIC(Note 4)						
Total Gate Charge	(VDS = 15 V, VGS = 4.5 V,ID = 12.5 A)	Qg	-	10	-	nC
Gate-Source Charge		Qgs	-	4.1	-	
Gate-Drain Charge		Qgd	-	4.3	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	1399	-	pF
Output Capacitance		Coss	-	159	-	
Reverse Transfer Capacitance		Crss	-	117	-	
Turn-On Delay Time	(VDS=15V,RL=1.2 Ω,ID=12.5A,VGEN=10V,RG=6 Ω)	td(on)	-	7	-	ns
Turn-On Rise Time		tr	-	6	-	
Turn-Off Delay Time		td(off)	-	29	-	
Turn-Off Fall Time		tf	-	9	-	

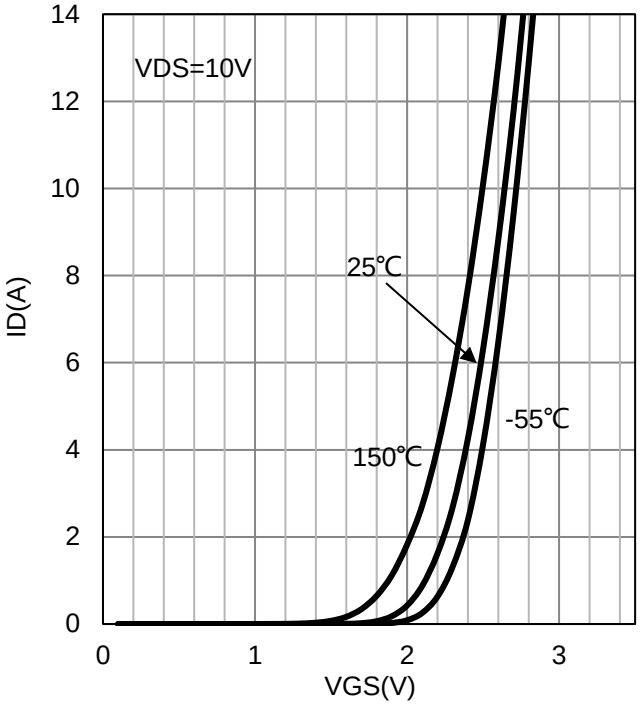
3.Pulse test; pulse width ≤300us, duty cycle≤2%

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

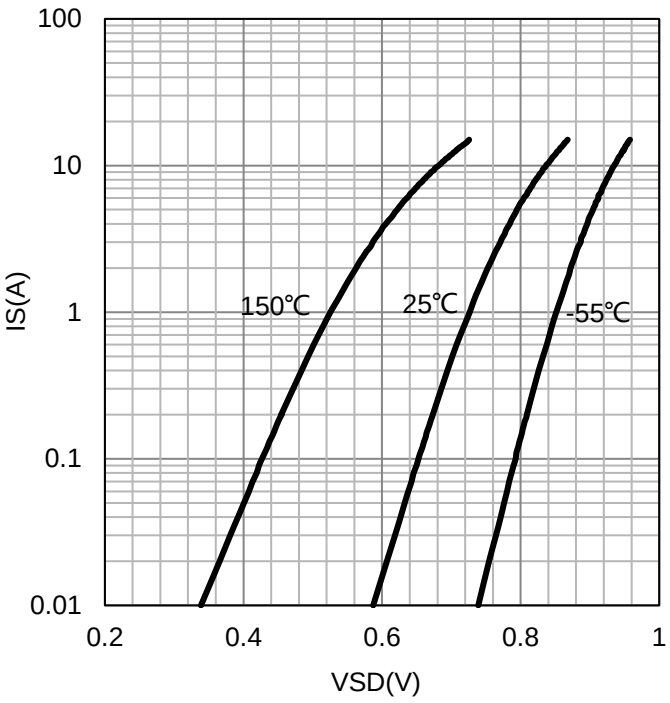
7.ELECTRICAL CHARACTERISTICS CURVES



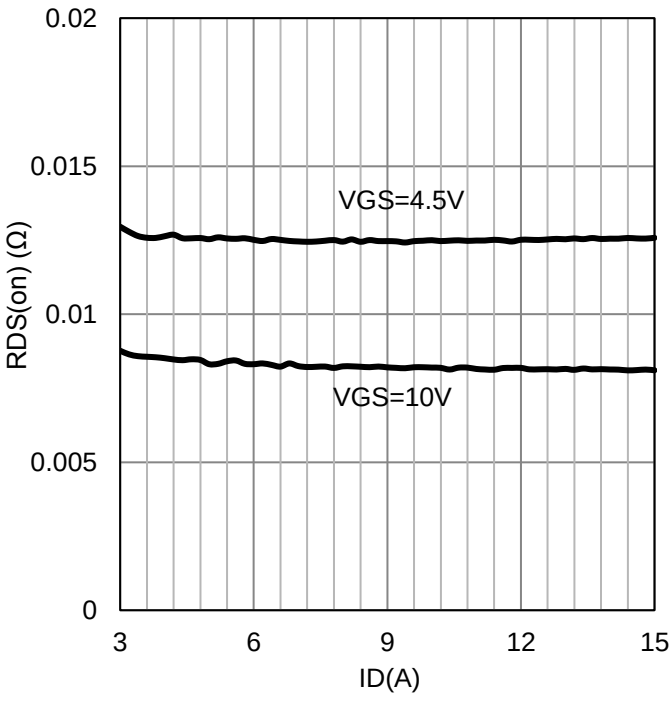
ID vs. VDS



ID vs. VGS

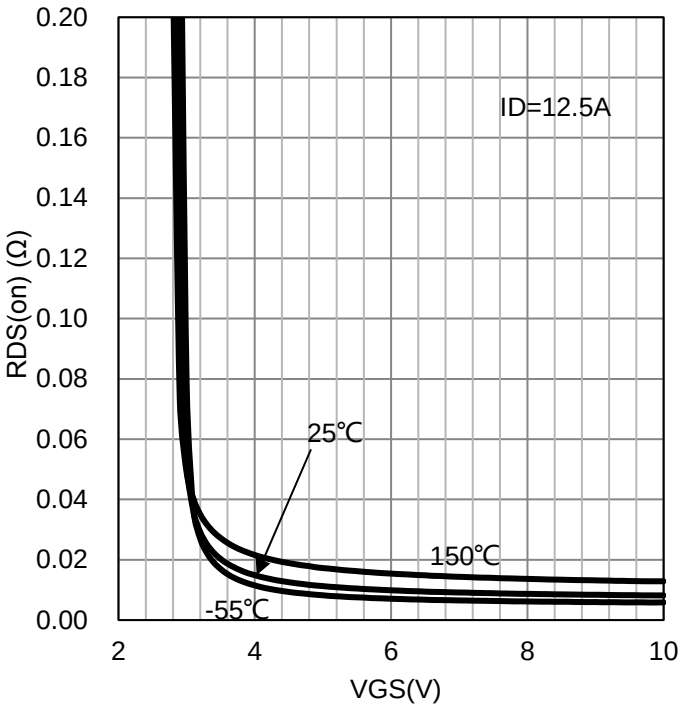


IS vs. VSD

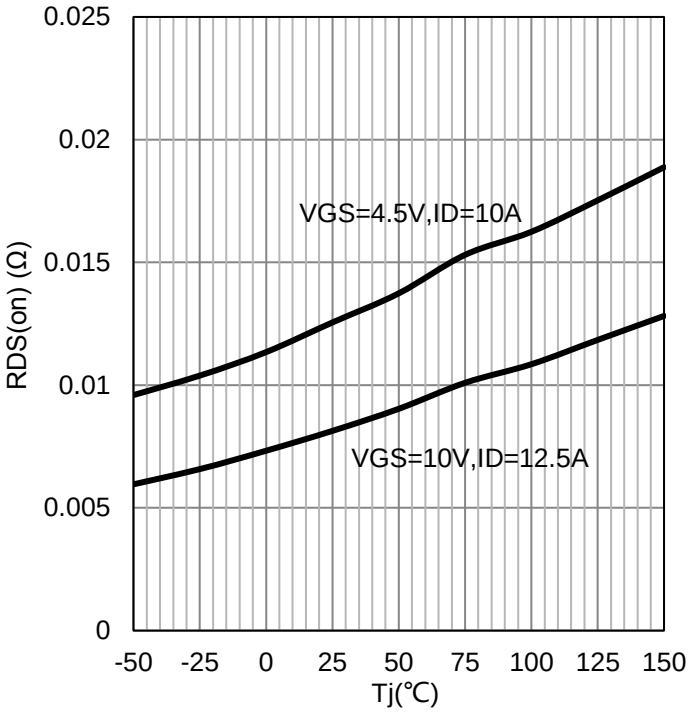


RDS(on) vs. ID

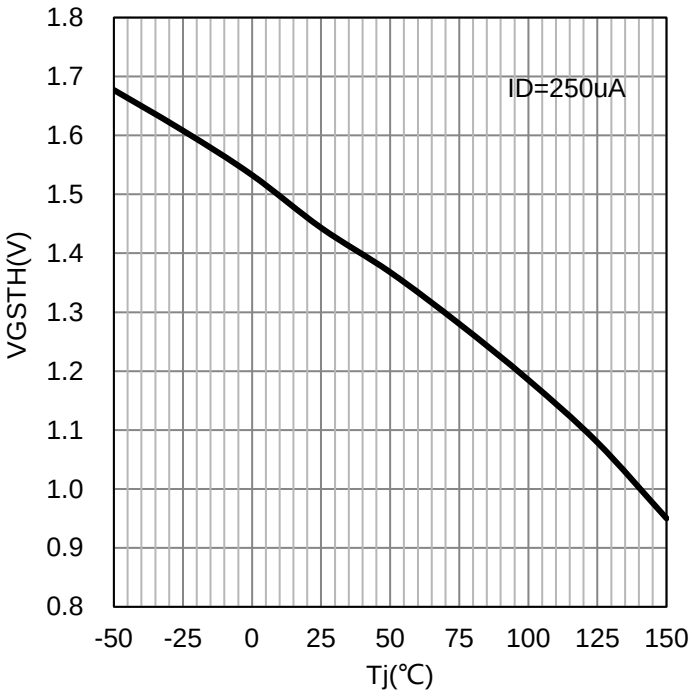
7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



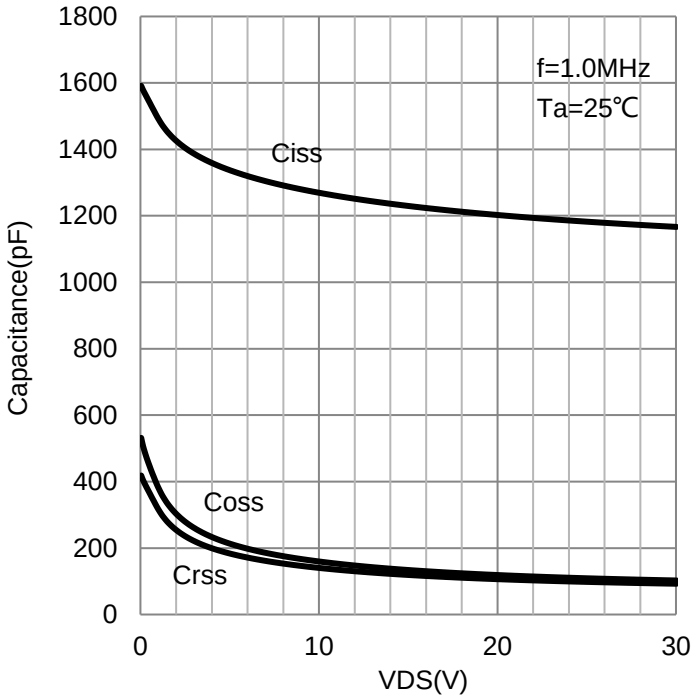
RDS(on) vs. VGS



RDS(on) vs Tj

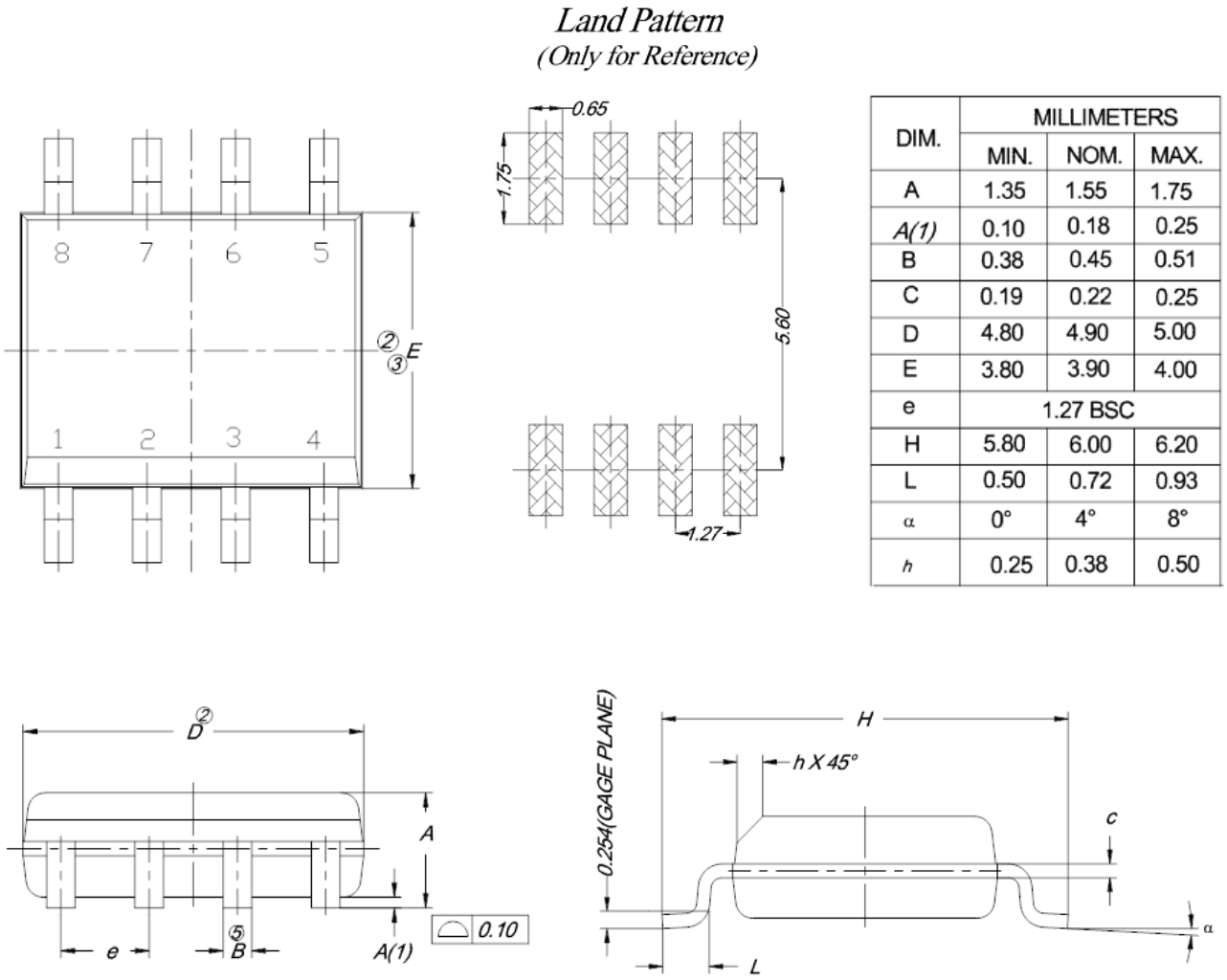


VGSTH vs. Tj



Capacitance

8.OUTLINE AND DIMENSIONS



DIM.	MILLIMETERS		
	MIN.	NOM.	MAX.
A	1.35	1.55	1.75
A(1)	0.10	0.18	0.25
B	0.38	0.45	0.51
C	0.19	0.22	0.25
D	4.80	4.90	5.00
E	3.80	3.90	4.00
e	1.27 BSC		
H	5.80	6.00	6.20
L	0.50	0.72	0.93
α	0°	4°	8°
h	0.25	0.38	0.50

Note:
1. All Dimension Are In mm.
2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Tie Bar Burrs, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.
4. The Package Top May Be Smaller Than The Package Bottom.
5. Dimension "B" Does Not Include Dambar Protrusion. Allowable Dambar Protrusion Shall Be 0.08 mm Total In Excess Of "B" Dimension At Maximum Material Condition. The Dambar Cannot Be Located On The Lower Radius Of The Foot.