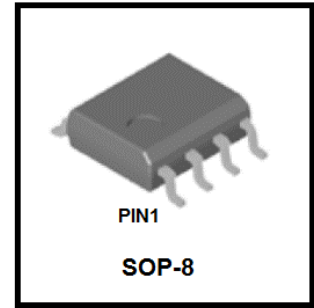


LNP4606T1G

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

1. FEATURES

- Low RDS(on) provides higher efficiency and extends battery life.
- Low thermal impedance.
- Fast switching speed.
- High performance trench technology
- We declare that the material of product are Halogen Free and compliance with RoHS requirements.

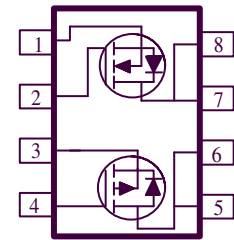


2. APPLICATION

- Power Routing
- DC/DC Conversion
- Motor Drives

3. ORDERING INFORMATION

Device	Marking	Shipping
LNP4606T1G	4606	4000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	N-Channel	P-Channel	Unit
Drain-to-Source Voltage		VDS	30	30	V
Gate-to-Source Voltage		VGS	±20	±20	V
Continuous Drain Current(Note 1)	TA =25°C	ID	7	-6	A
	TA =70°C		4.8	-4.5	
Pulsed Drain Current (Note 2)		IDM	28	-25	A
Power Dissipation(Note 1)	TA =25°C	PD	2.1	2.1	W
	TA =70°C		1.3	1.3	
Operating Junction and Storage Temperature Range		TJ , TSTG	-55 ~+150	-55 ~+150	°C

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	t ≤10 s	RθJA	62.5	°C/W
	Steady State		110	°C/W

- 1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.
- 2.Pulse width limited by maximum junction temperature

6. P-ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
STATIC						
Drain-Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-30	-	-	V	
Gate-Source Threshold Voltage (VDS =VGS , ID =-250μA)	VGS(th)	-1	-	-3	V	
Gate-Body Leakage Current (VDS =0V, VGS = ± 20V)	IGSS	-	-	± 1	uA	
Zero Gate Voltage Drain Current (VDS = -24 V, VGS = 0 V)	IDSS	-	-	-1	μA	
Drain-Source On-Resistance(Note 3) (VGS = -10 V, ID = -5 A) (VGS = -4.5 V, ID = -4 A)	RDS(ON)	-	45 55	52 75	mΩ	
Diode Forward Voltage(Note 3) (IS = -1 A, VGS = 0 V)	VSD	-	-0.77	-1	V	
DYNAMIC						
Total Gate Charge	(VDS = -15 V, VGS = -10 V, ID = -4 A)	Qg(10V)	-	18.7	-	nC
Total Gate Charge		Qg(4.5V)	-	9.4	-	
Gate-Source Charge		Qgs	-	2.7	-	
Gate-Drain Charge		Qgd	-	3.3	-	
Turn-On Delay Time	(VDS = -15 V, VGS=-10V, RL= 5.2 Ω, RGEN=3.8 Ω)	td(on)	-	39	-	ns
Rise Time		tr	-	21	-	
Turn-Off Delay Time		td(off)	-	48	-	
Fall Time		tf	-	7.5	-	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	664	-	pF
Output Capacitance		Coss	-	90	-	
Reverse Transfer Capacitance		Crss	-	81	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)	Rg	-	6.9	-	Ω	

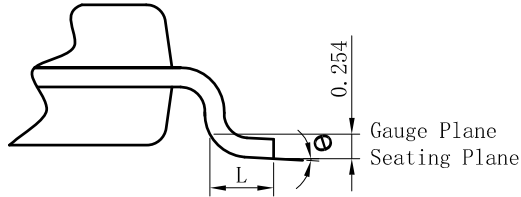
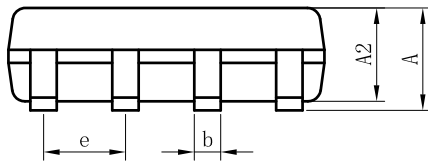
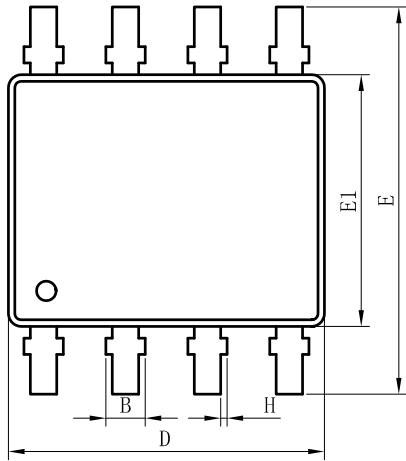
6. N-ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
STATIC						
Drain-Source Breakdown Voltage (VGS = 0, ID = 250μA)	VBRDSS	30	-	-	V	
Gate-Source Threshold Voltage (VDS =VGS , ID = 250μA)	VGS(th)	1	-	3	V	
Gate-Body Leakage Current (VDS =0V, VGS =± 16V)	IGSS	-	-	± 10	μA	
Zero Gate Voltage Drain Current (VDS = 30 V, VGS = 0 V)	IDSS	-	-	1	μA	
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 6 A) (VGS = 4.5 V, ID = 5 A)	RDS(ON)	-	26 36	34 52	mΩ	
Diode Forward Voltage(Note 3) (IS = 1.7 A, VGS = 0 V)	VSD	-	0.8	1.2	V	
DYNAMIC						
Total Gate Charge	(VDS = 15 V, VGS = 10 V, ID = 6.7 A)	Qg(10V)	-	12	-	nC
Total Gate Charge		Qg(4.5V)	-	5.7	-	
Gate-Source Charge		Qgs	-	3	-	
Gate-Drain Charge		Qgd	-	2	-	
Turn-On Delay Time	(VDD = 15 V, RL= 15 Ω, ID= 1A, VGEN= 10V , RG = 6 Ω)	td(on)	-	9.2	-	ns
Rise Time		tr	-	13	-	
Turn-Off Delay Time		td(off)	-	33	-	
Fall Time		tf	-	3.7	-	
Input Capacitance	(VDS = 15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	370	-	pF
Output Capacitance		Coss	-	68	-	
Reverse Transfer Capacitance		Crss	-	21	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)	Rg	-	TBD	-	Ω	

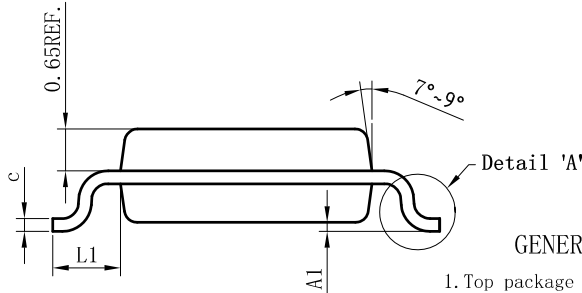
3. Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%

7. OUTLINE AND DIMENSIONS

SOP8



Detail 'A'

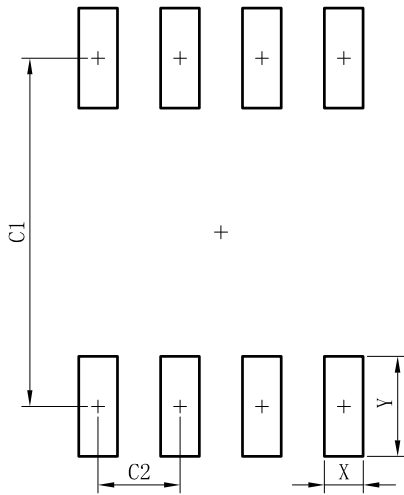


SOP8			
DIM	MIN	NOR	MAX
A	-	-	1.75
A1	0.10	0.15	0.20
A2	1.35	1.45	1.55
b	0.33	0.42	0.51
c	0.15	0.22	0.29
D	4.77	4.90	5.03
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27BSC		
L	0.46	0.66	0.86
L1	0.85	1.05	1.25
θ	0°	5°	8°
B	-	-	0.55
H	0	0.05	0.10
All Dimensions in mm			

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. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
5. Dimension "b" Does Not Include Dambar Protrusion.

8. SOLDERING FOOTPRINT



SOP8	
DIM	(mm)
X	0.60
Y	1.55
C1	5.40
C2	1.27

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