

# LP3407LT1G

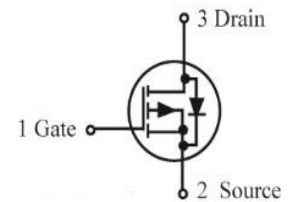
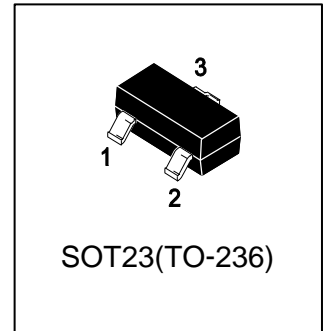
## 30V P-Channel Enhancement-Mode MOSFET

### 1. FEATURES

- $V_{DS} = -30V$
- $I_{D} = -4.1A$  @  $V_{GS} = -10V$
- $R_{DS(ON)} < 70m\Omega$  ( $V_{GS} = -10V$ )
- $R_{DS(ON)} < 100m\Omega$  ( $V_{GS} = -4.5V$ )
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

### 2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP3407LT1G	A07	3000/Tape&Reel
LP3407LT3G	A07	10000/Tape&Reel



### 3. MAXIMUM RATINGS( $T_a = 25^\circ C$ )

Parameter		Symbol	Limits	Unit
Drain–Source Voltage		$V_{DS}$	-30	V
Gate–to–Source Voltage		$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$T_a = 25^\circ C$	$I_D$	-4.1	A
	$T_a = 70^\circ C$		-3.5	
Pulsed Drain Current (Note 3)		$I_{DM}$	-25	
Power Dissipation (Note 2)	$T_a = 25^\circ C$	$P_D$	1.4	W
	$T_a = 70^\circ C$		0.9	
Junction and Storage Temperature Range		$T_j, T_{stg}$	-55~+150	$^\circ C$

### 4. THERMAL CHARACTERISTICS

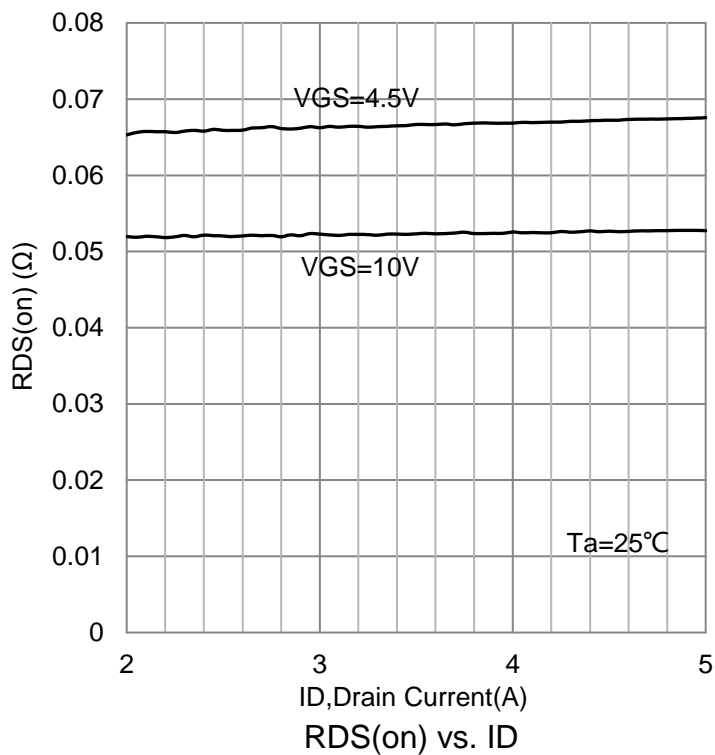
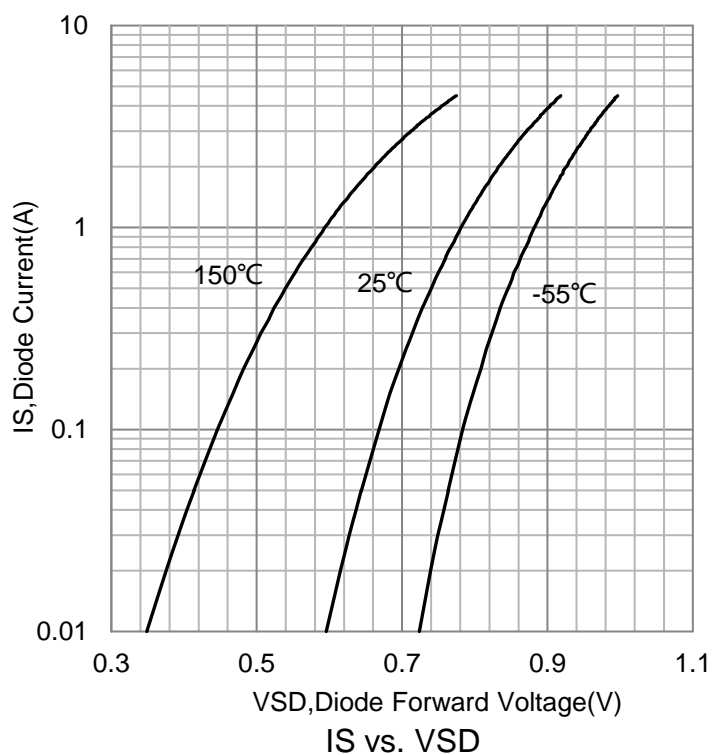
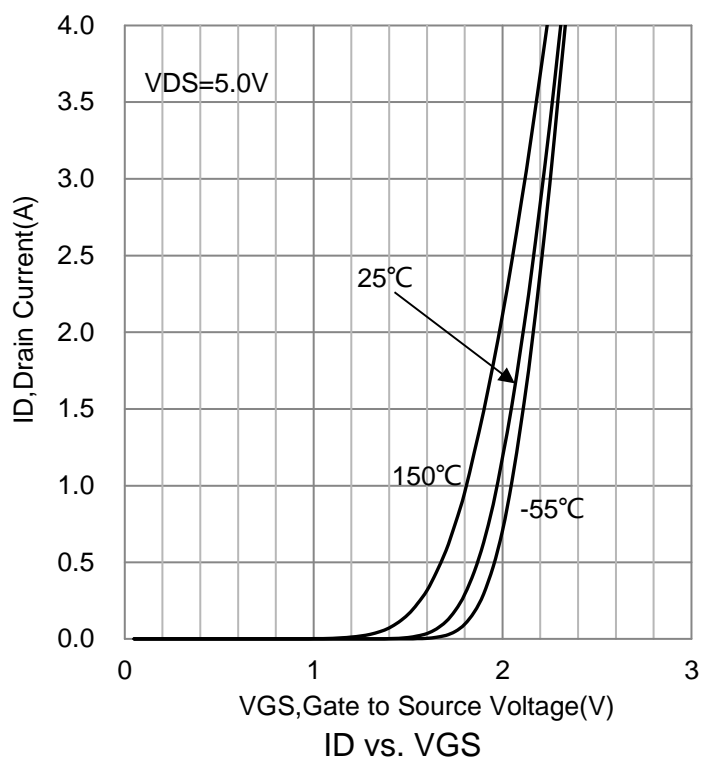
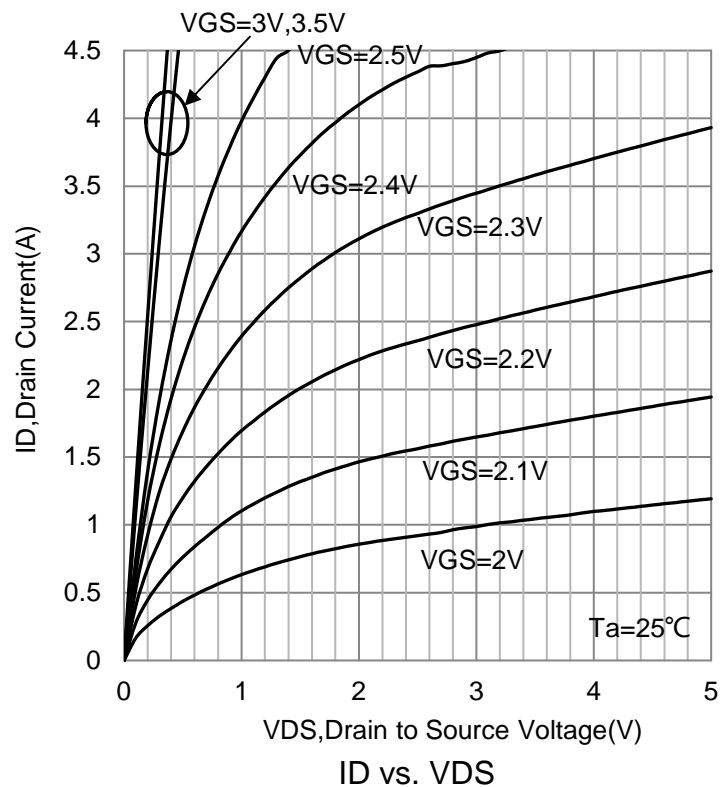
Parameter		Symbol	Typ.	Max	Unit
Thermal Resistance, Junction–to–Ambient (Note 1&4)	$t \leq 10s$	$R_{\theta JA}$	70	90	$^\circ C/W$
	Steady State		100	125	
Maximum Junction-to-Lead	Steady State	$R_{\theta JL}$	63	80	

- 1.The value of  $R_{\theta JA}$  is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ C$ . The value in any given application depends on the user's specific board design. The current rating is based on the  $t \leq 10s$  thermal resistance rating.
- 2.Repetitive rating, pulse width limited by junction temperature.
- 3.The  $R_{\theta JA}$  is the sum of the thermal impedance from junction to lead  $R_{\theta JL}$  and lead to ambient.

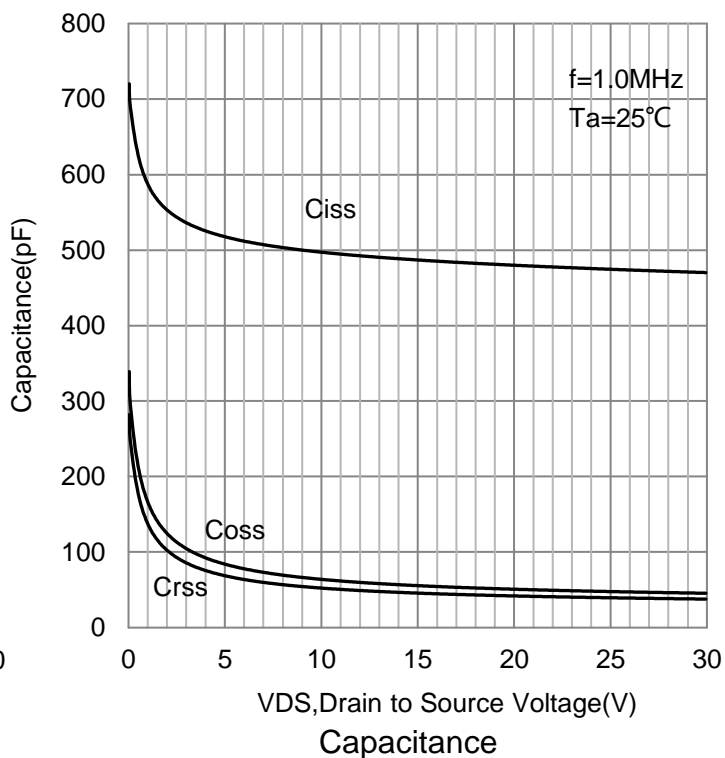
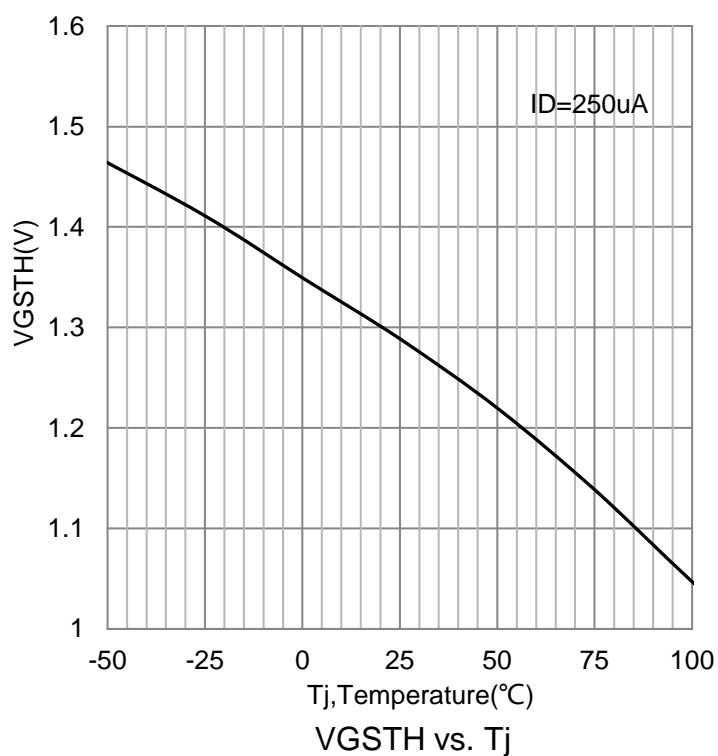
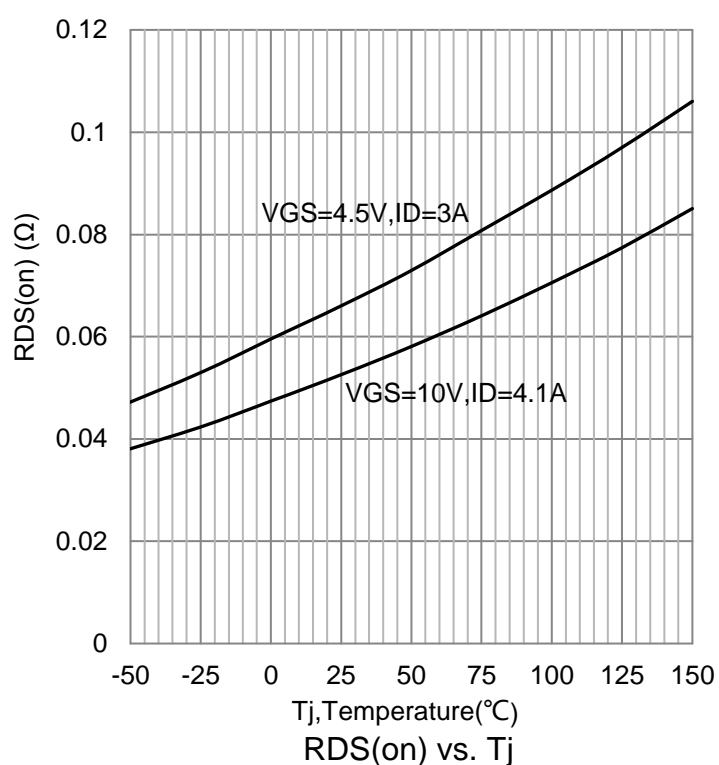
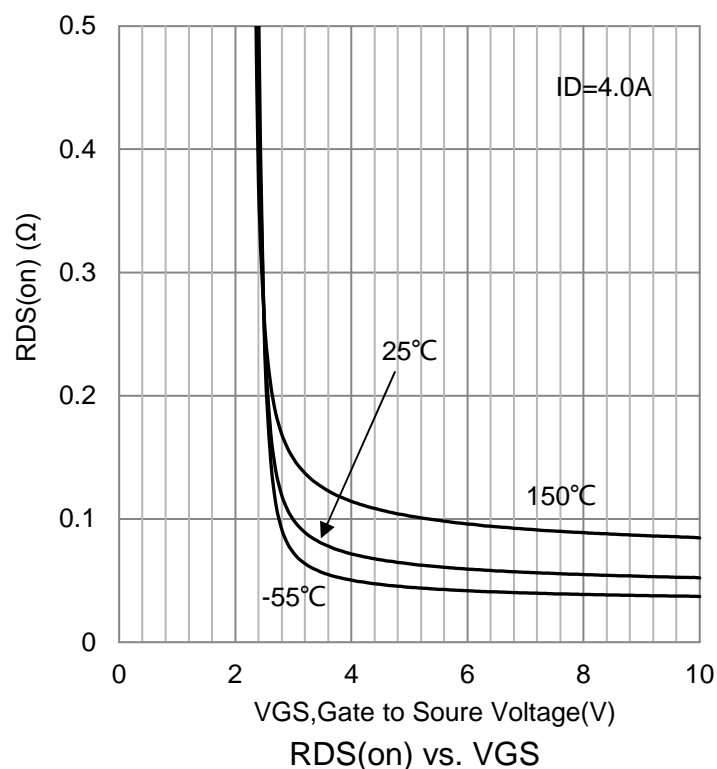
## 5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>STATIC PARAMETERS</b>					
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-30	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = -24 V) (VGS = 0, VDS = -24 V, TJ = 55°C)	IDSS	-	-	-1 -5	μA
Gate Leakage Current (VDS = 0V, VGS = ±20V)	IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-1	-1.4	-2.1	V
Static Drain–Source On–State Resistance (VGS = -10V, ID = -4.1A) (VGS = -10V, ID = -4.1A, TJ = 125°C) (VGS = -4.5V, ID = -3A)	RDS(on)	-	-	70 95 100	mΩ
Forward Transconductance (VDS = -5V, ID = -4A)	gfs	-	8.8	-	S
Forward Voltage (VGS = 0 V, IS = -1A)	VSD	-	-0.7	-1	V
Maximum Body-Diode Continuous Current	IS	-	-	-2	A
<b>Dynamic</b>					
Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Ciss	-	534	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Coss	-	60	-	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Crss	-	52	-	
Gate resistance (VGS = 0V, VDS = 0V, f = 1MHz)	Rg	-	12	-	Ω
Total Gate Charge	(VDS = -15V, ID = -4A)	Qg(10V)	-	11.4	nC
Total Gate Charge		Qg(4.5V)	-	5.6	
Gate–Source Charge		Qgs	-	1.26	
Gate–Drain Charge		Qgd	-	2.3	
Turn–On Delay Time	(VDS = -15V, RL = 3.6 Ω, VGS = -10V, RG = 3.1Ω)	td(on)	-	2.98	ns
Rise Time		tr	-	10.4	
Turn–Off Delay Time		td(off)	-	19	
Fall Time		tf	-	7	
Body Diode Reverse Recovery Time (IF = -4A, dI/dt = 100A/μs)		trr	-	11	-
Body Diode Reverse Recovery Charge (IF = -4A, dI/dt = 100A/μs)		Qrr	-	5.3	nC

## 6. ELECTRICAL CHARACTERISTICS CURVES



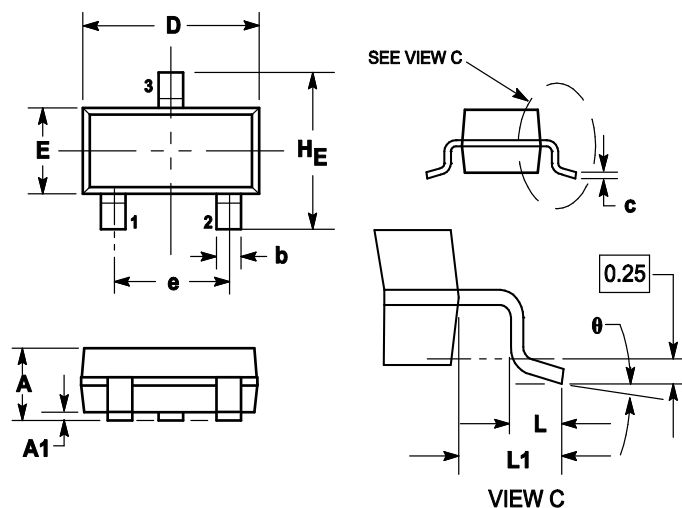
## 6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



## 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	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H <sub>E</sub>	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

## 8.SOLDERING FOOTPRINT

