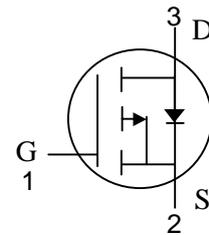
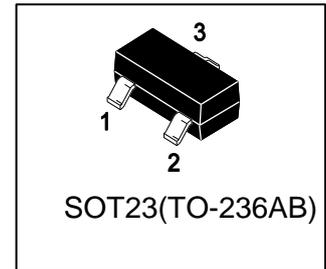


# LP2307LT1G

## S-LP2307LT1G

16V P-Channel Enhancement-Mode MOSFET



### 1. FEATURES

- $V_{DS} = -16V$
- $R_{DS(ON)}, V_{GS@-4.5V}, I_{DS@-4.7A} = 70m\Omega$
- $R_{DS(ON)}, V_{GS@-2.5V}, I_{DS@-1A} = 110m\Omega$
- 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.
- Advanced trench process technology
- High density cell design for ultra low on-resistance

### 2. APPLICATIONS

- Simple drive requirement
- Small package outline
- Surface mount device

### 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP2307LT1G	P07	3000/Tape&Reel
LP2307LT3G	P07	10000/Tape&Reel

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

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	$V_{DS}$	-16	V
Gate-to-Source Voltage	$V_{GS}$	$\pm 8$	V
Continuous Drain Current(Note 3)	ID	$T_A = 25^\circ C$	-4.7
		$T_A = 70^\circ C$	-3.3
Pulsed Drain Current(Note 1)	IDM	-20	A

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Power Dissipation	PD	$T_A = 25^\circ C$	1.1
		$T_A = 70^\circ C$	0.7
Thermal Resistance, Junction-to-Ambient(Note 3)	$R_{\theta JA}$	110	$^\circ C/W$
Operating Junction and Storage temperature range	$T_J, T_{stg}$	$-55 \sim +150$	$^\circ C$

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

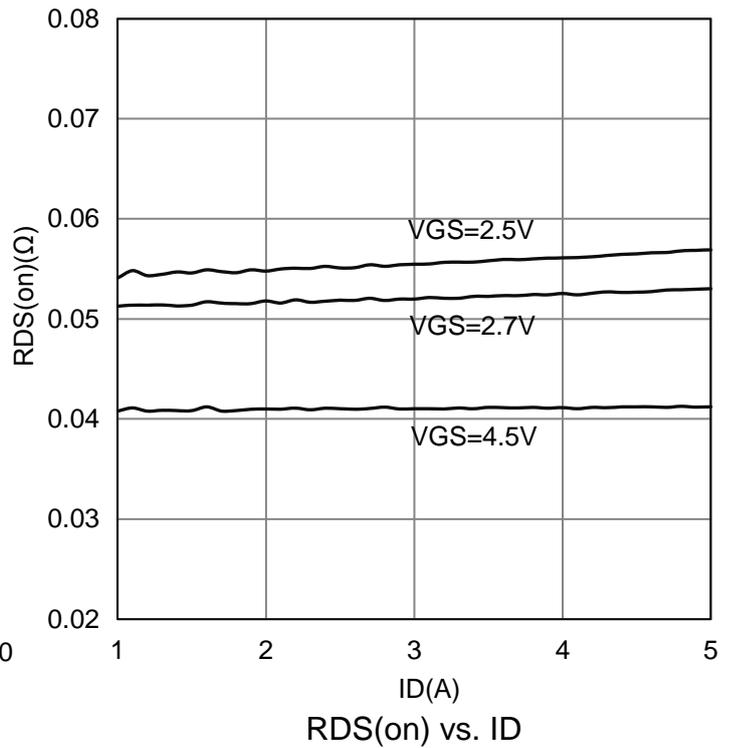
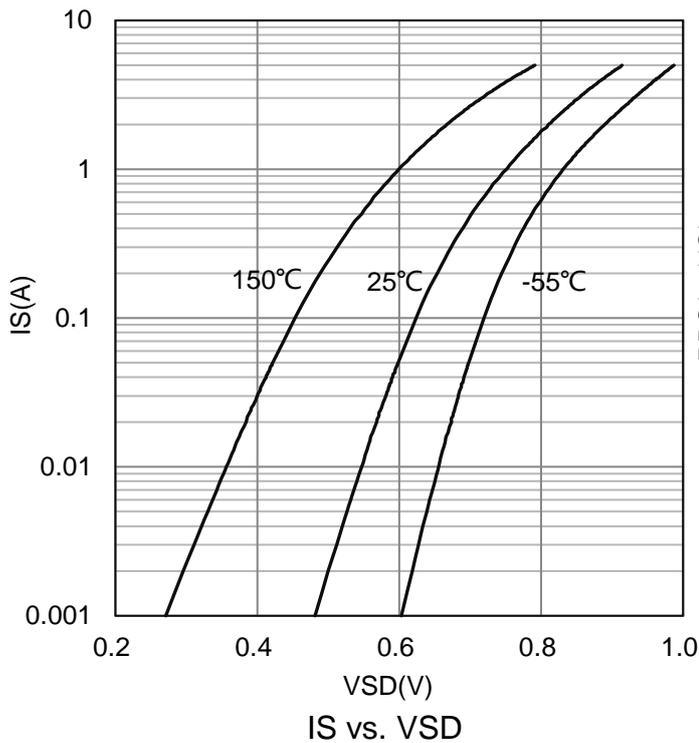
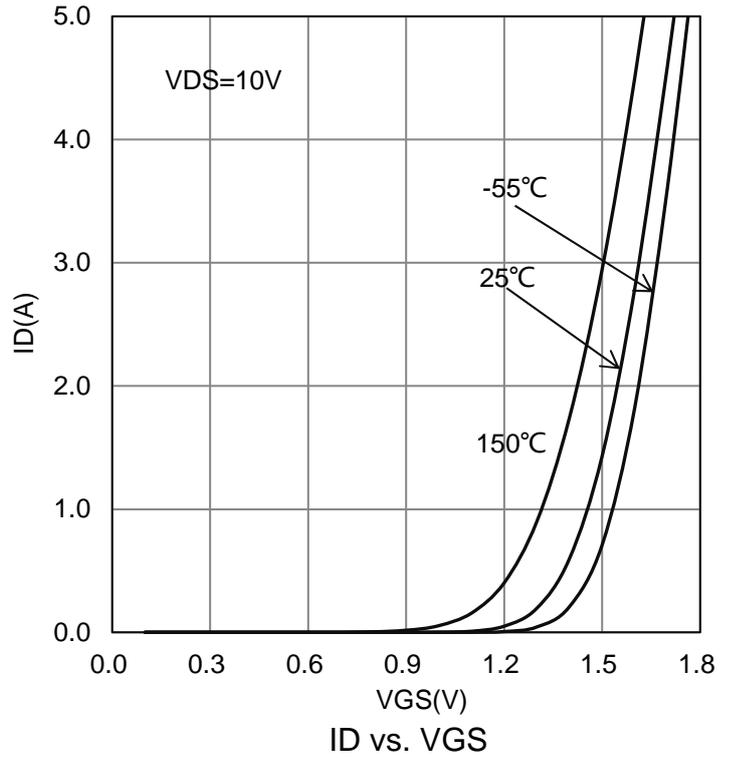
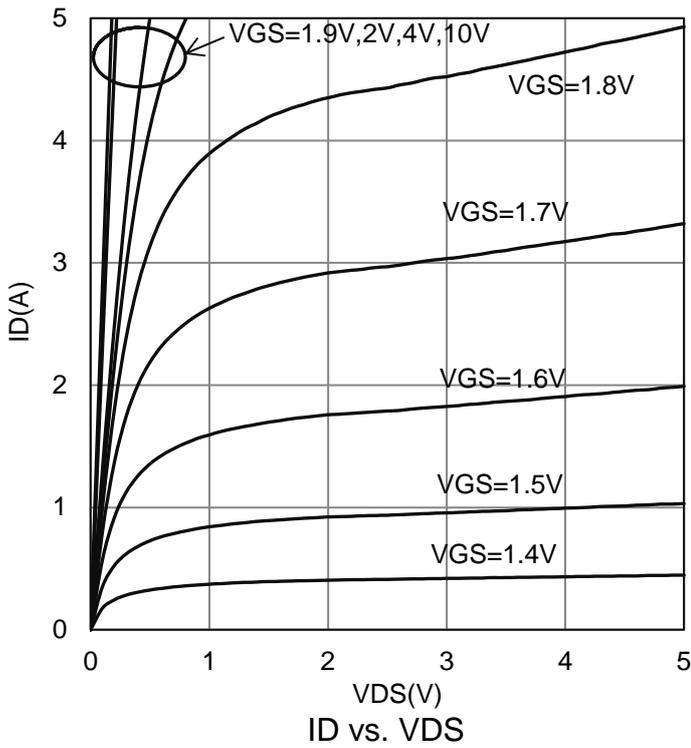
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-16	-	-	V
Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-0.6	-0.85	-1.4	V
Drain-Source Leakage Current (VDS = -16V, VGS = 0V)	IDSS	-	-	-1	μA
Gate-Source Leakage Current (VGS = ±8 V, VDS = 0V)	IGSS	-	-	100	nA
Static Drain-Source On-State Resistance(Note 2) (VGS = -4.5V, ID = -4.7A) (VGS = -2.7V, ID = -3.8A) (VGS = -2.5V, ID = -1.0A)	RDS(on)	-	48 63 65	70 100 110	mΩ
Forward Transconductance (VDS = -10V, ID = -4.7A)	gfs	-	10.8	-	S
Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Ciss	-	828	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Coss	-	75.2	-	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V)	Crss	-	67.4	-	
Total Gate Charge	(ID = -4.7A, VDS = -10V, VGS = -4.5V)	Qg	-	9.2	nC
Gate-Source Charge		Qgs	-	1.3	
Gate-Drain Charge		Qgd	-	3.3	
Turn-On Delay Time	(VDS = -10V, ID = -1A, RL = 10Ω, VGS = -4.5V, RG = 6.2Ω, tp = 10us)	td(on)	-	18.8	ns
Rise Time		tr	-	26	
Turn-Off Delay Time		td(off)	-	95.6	
Fall Time		tf	-	42	
Max Diode Forward Current	IS	-	-	-1.7	A
Forward Voltage (IS = -1.7A, VGS = 0V)	VSD	-	-	-1.2	V

1. Pulse width limited by Max. junction temperature.

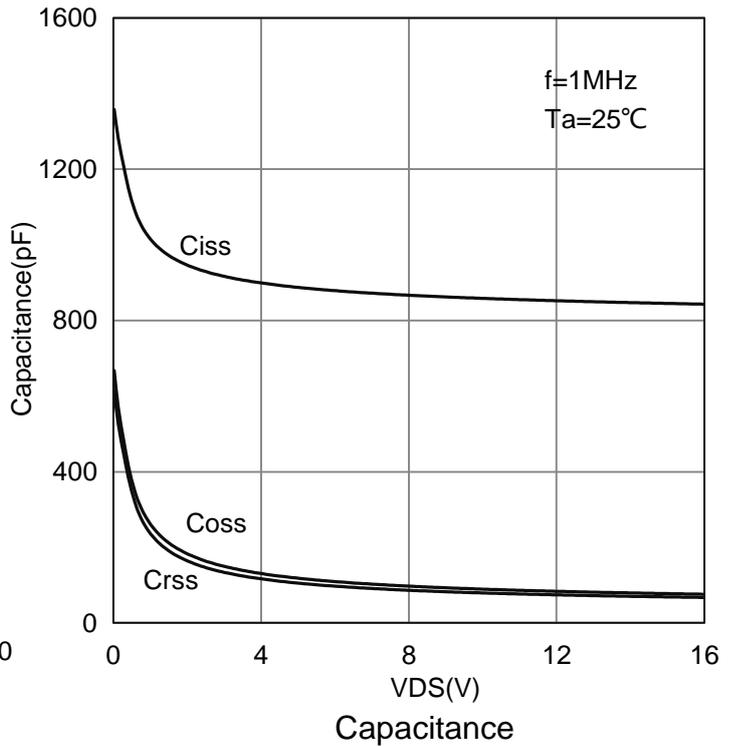
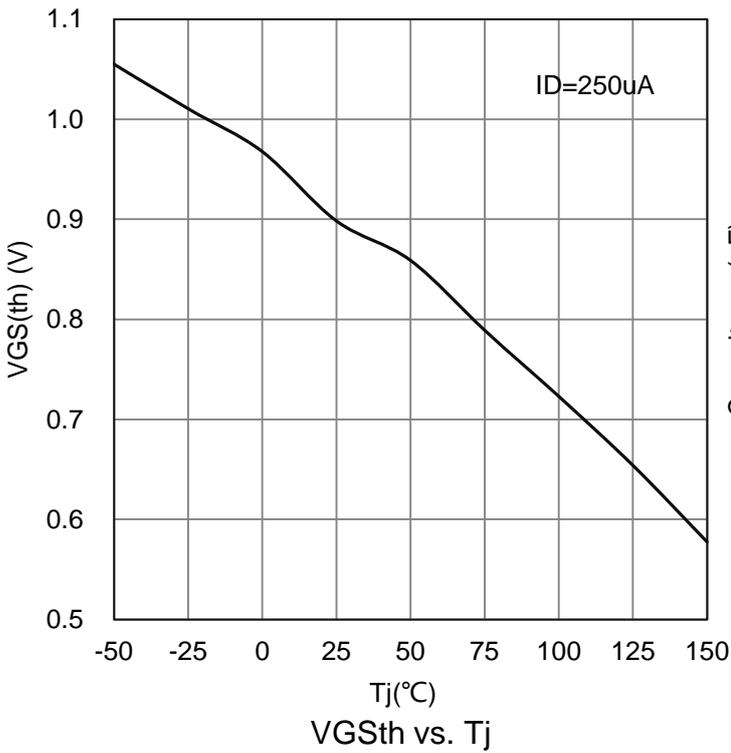
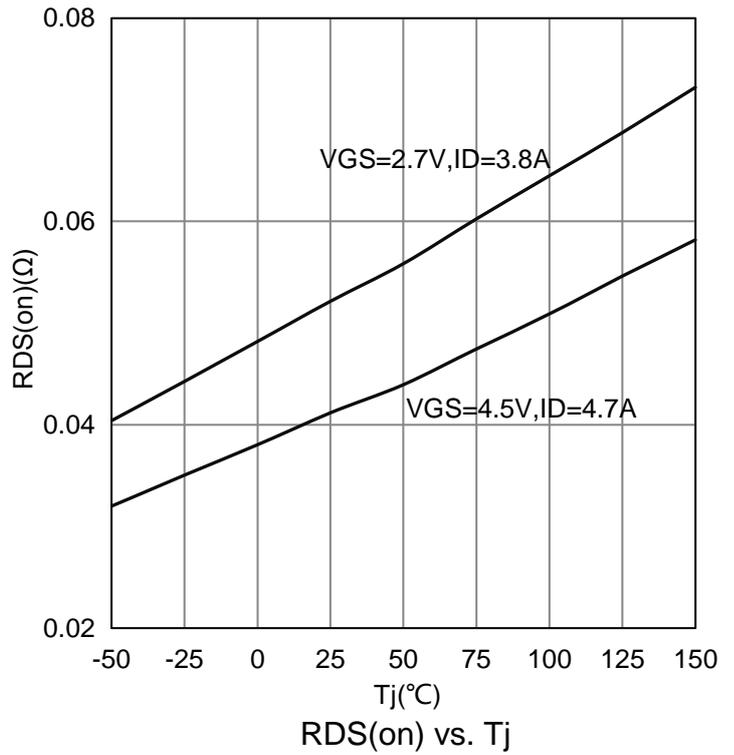
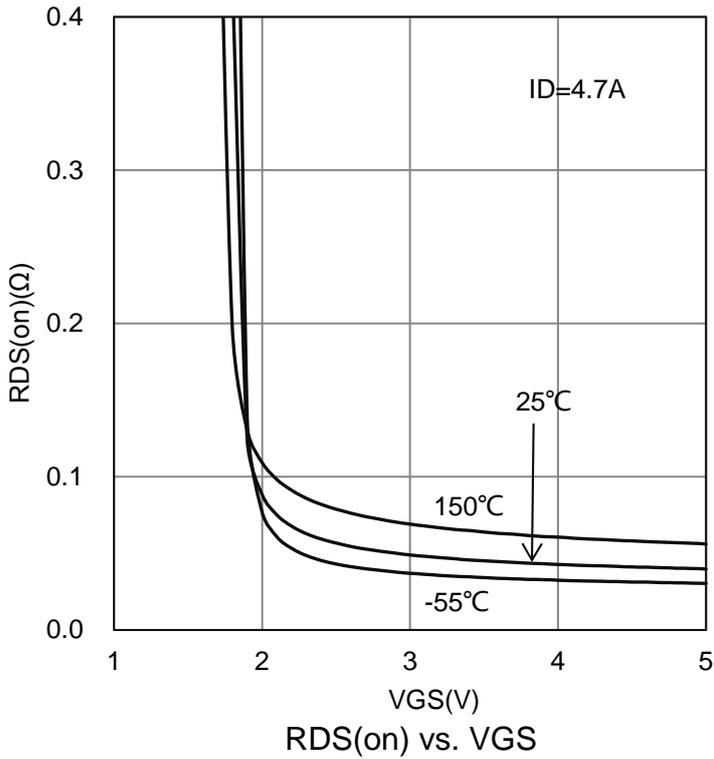
2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

3. Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board ; 270°C/W when mounted on min. copper pad.

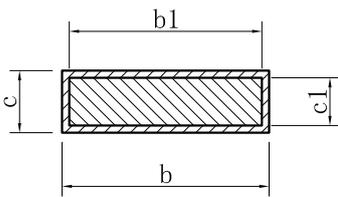
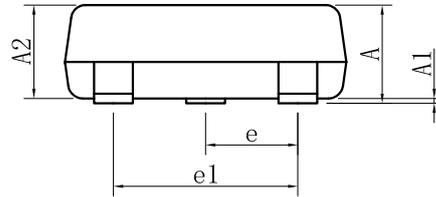
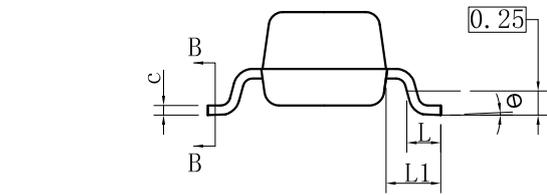
**7. ELECTRICAL CHARACTERISTICS CURVES**



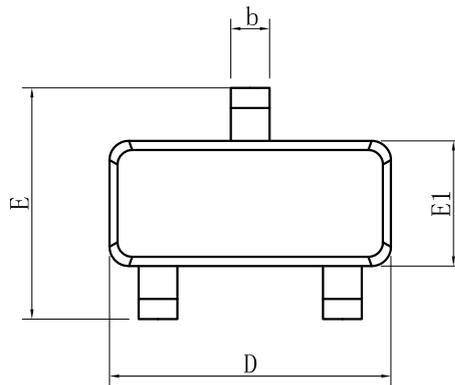
**7.ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8. OUTLINE AND DIMENSIONS



SECTION B-B

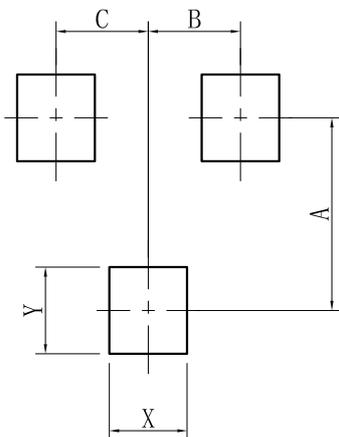


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

#### GENERAL NOTES

1. Top package surface finish  $Ra0.4 \pm 0.2\mu m$
2. Bottom package surface finish  $Ra0.7 \pm 0.2\mu m$
3. Side package surface finish  $Ra0.4 \pm 0.2\mu m$

### 9. SOLDERING FOOTPRINT



SOT23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

## **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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