

# LPB3443LT1G

## S-LPB3443LT1G

20V P-Channel Enhancement-Mode MOSFET

### 1. FEATURES

- $V_{DS} = -20V$
- $R_{DS(ON)}, V_{GS@-4.5V}, I_{DS@-4.7A} = 70m\Omega$
- $R_{DS(ON)}, V_{GS@-2.5V}, I_{DS@-1.0A} = 110m\Omega$
- 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.
- ESD rating of class 0 (<100V) per Human Body Model

### 2. APPLICATIONS

- Advanced trench process technology
- High density cell design for ultra low on-resistance.

### 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LPB3443LT1G	P34	3000/Tape&Reel
LPB3443LT3G	P34	10000/Tape&Reel

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

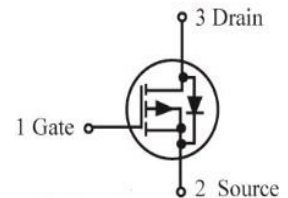
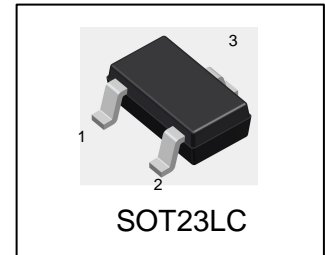
Parameter	Symbol	Limits	Unit
Drain-Source Voltage	$V_{DSS}$	-20	V
Gate-to-Source Voltage – Continuous	$V_{GS}$	$\pm 12$	V
Drain Current			A
– Continuous $T_a = 25^\circ C$	$I_D$	-4.7	
– Pulsed (Note 1)	$I_{DM}$	-20	
Continuous Source Current (Note 2)	$I_S$	-3	A
Pulsed Source Current (Note 2)	$I_{SM}$	-12	A

### 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Power Dissipation	PD	1.1	W
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	110	$^\circ C/W$
Junction and Storage temperature	$T_J, T_{stg}$	-55~+150	$^\circ C$

1. Repetitive Rating: Pulse width limited by the maximum junction temperature.

2. 1-in<sup>2</sup> 2oz Cu PCB board.



**6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**
**OFF CHARACTERISTICS**

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-20	-	-	V
Zero Gate Voltage Drain Current (VGS = 0, VDS = -20 V)	IDSS	-	-	-1	μA
Gate–Body Leakage Current, Forward (VGS = 12 V)	IGSSF	-	-	100	nA
Gate–Body Leakage Current, Reverse (VGS = -12 V)	IGSSR	-	-	-100	nA

**ON CHARACTERISTICS (Note 3)**

Forward Transconductance (VDS = -10V, ID = -4.7A)	gfs	-	8	-	S
Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-0.6	-0.85	-1.4	V
Static Drain–Source On–State Resistance (VGS = -4.5V, ID = -4.7A) (VGS = -2.7V, ID = -3.8A) (VGS = -2.5V, ID = -1.0A)	RDS(on)	-	58 63 75	70 90 110	mΩ

**SWITCHING CHARACTERISTICS**

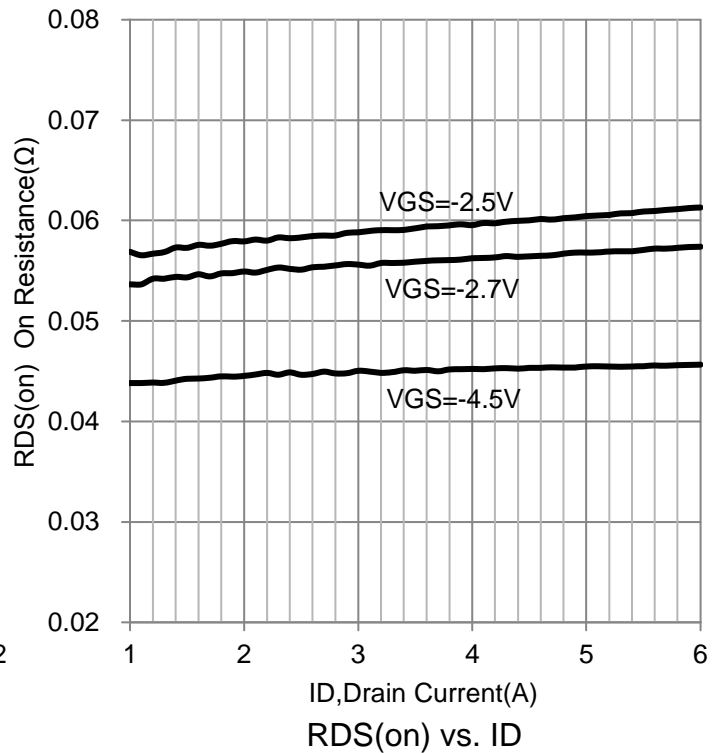
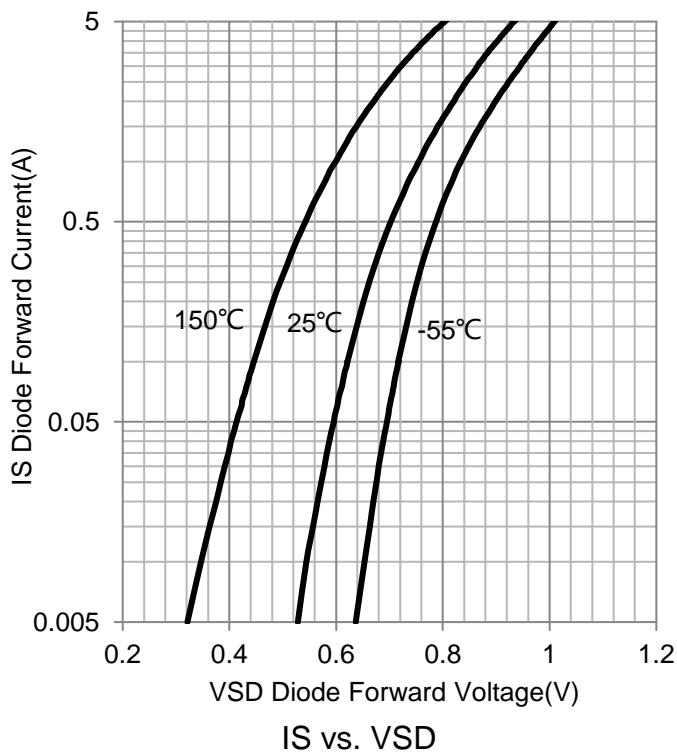
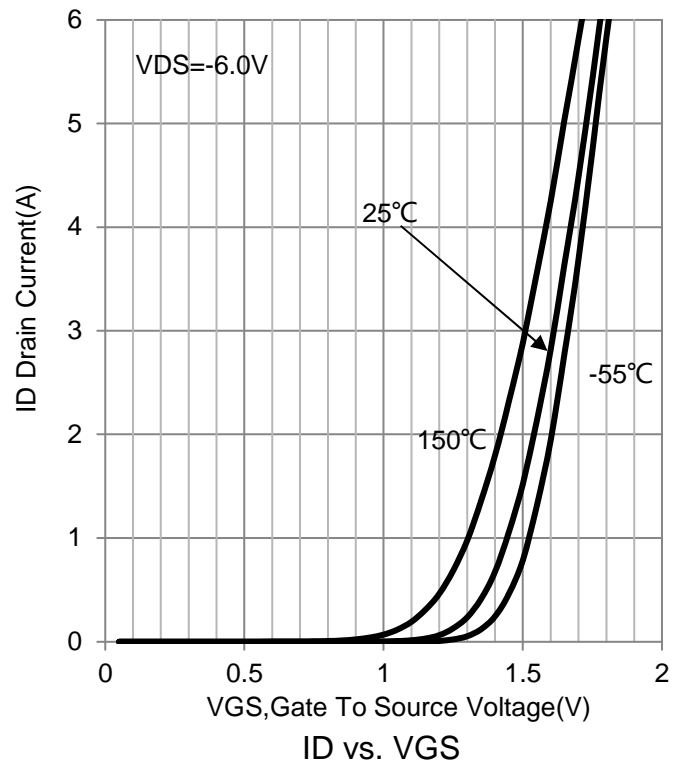
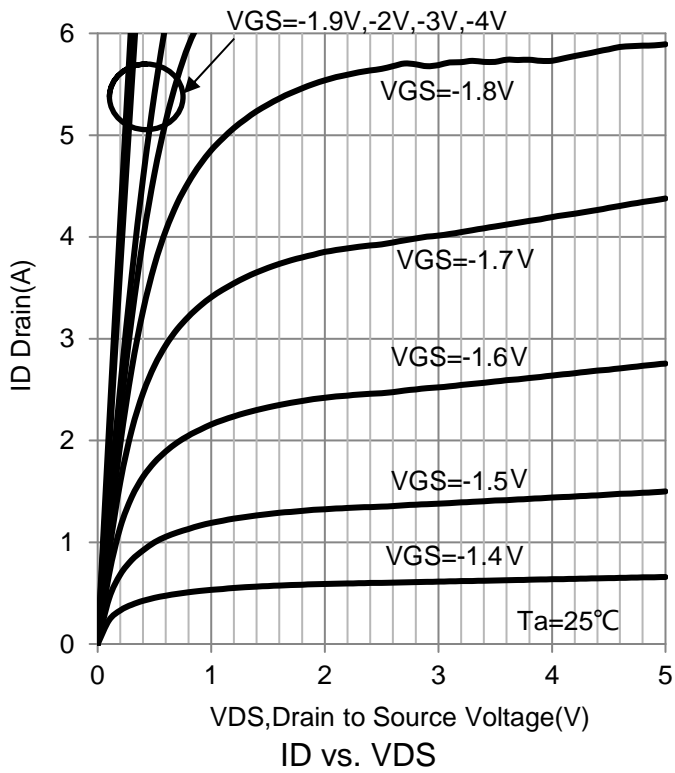
Turn-On Delay Time	(VDD = -10V, RD=10Ω ID = -1A, VGS = -4.5V, RG = 6Ω)	td(on)	-	22	35	ns
Rise Time		tr	-	35	55	
Turn-Off Delay Time		td(off)	-	45	70	
Fall Time		tf	-	25	40	

**SOURCE–DRAIN DIODE CHARACTERISTICS**

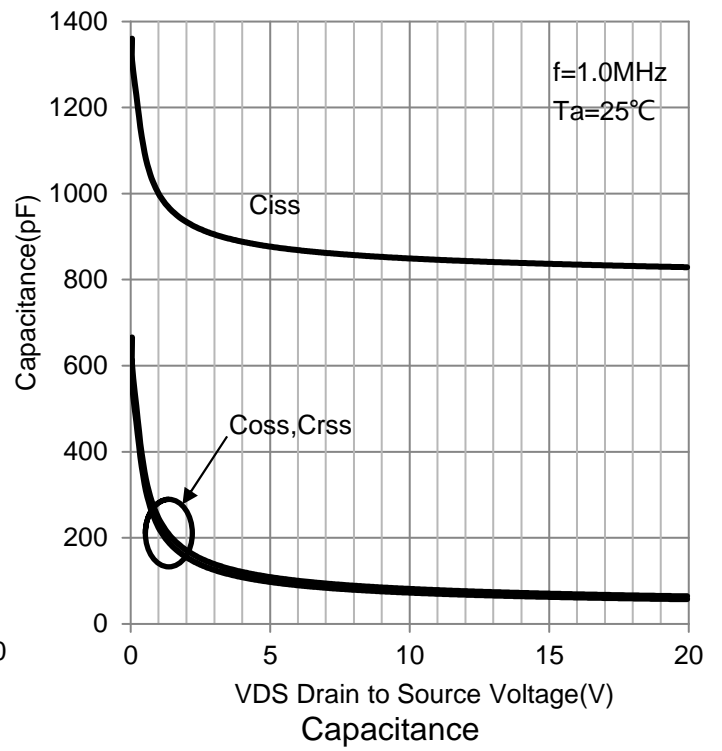
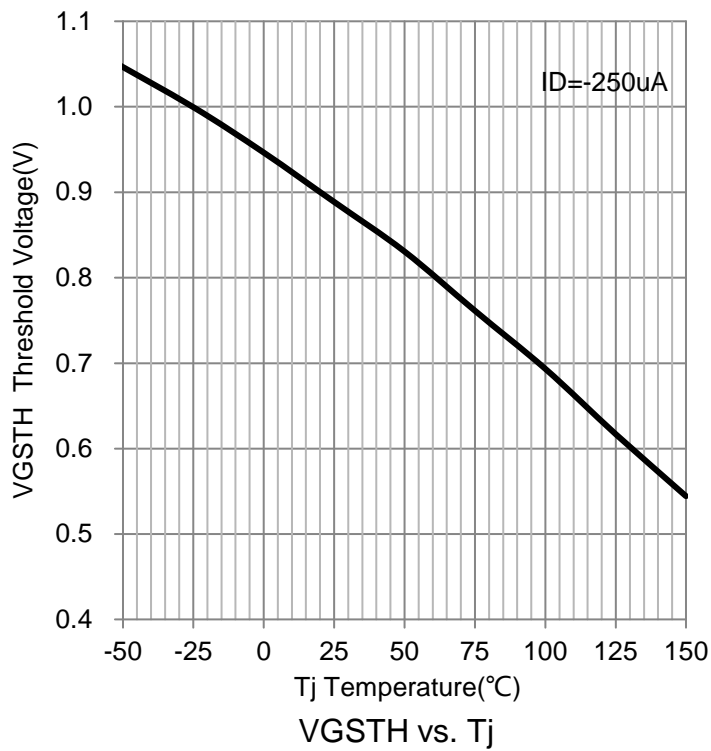
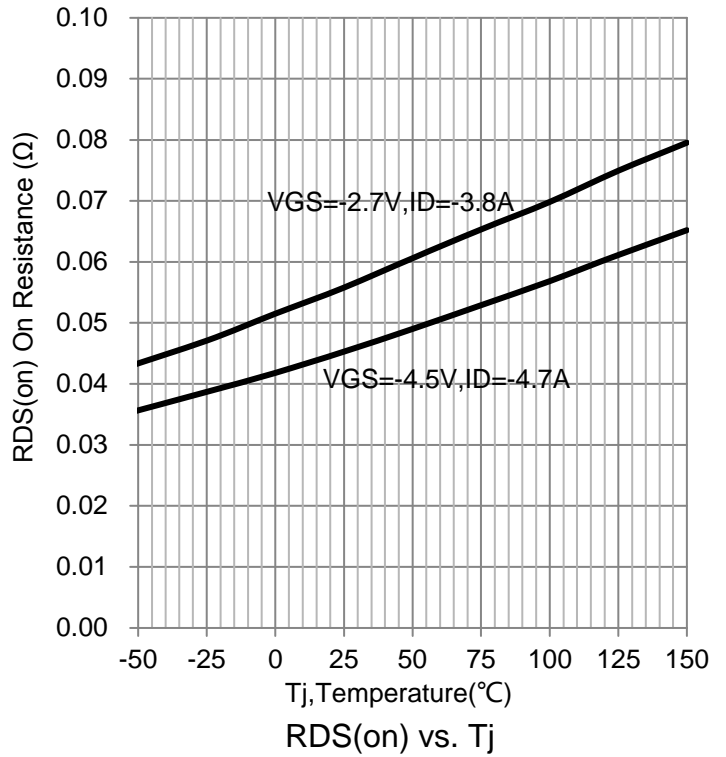
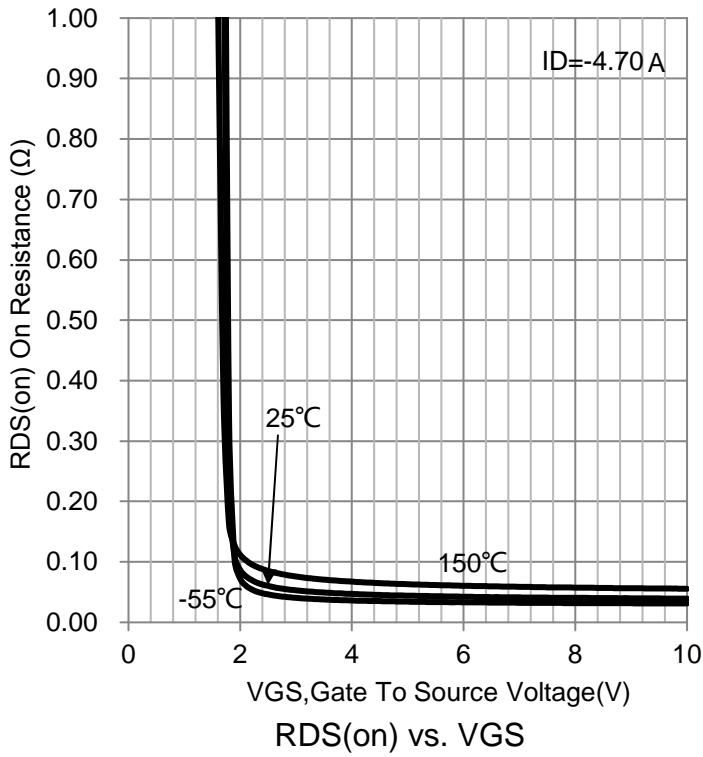
Forward Voltage (VGS = 0 V, ISD = -1.7 A)	VSD	-	-	-1.2	V
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3.Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

**7. ELECTRICAL CHARACTERISTICS CURVES**

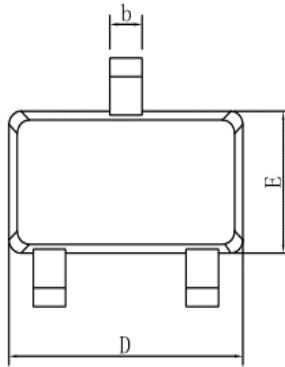
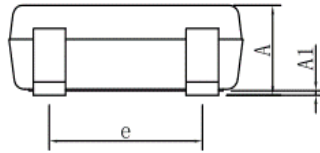
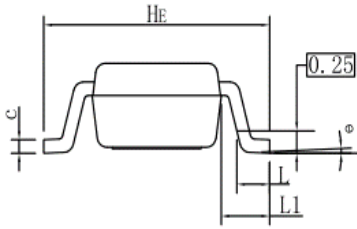


**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8. OUTLINE AND DIMENSIONS

SOT23LC

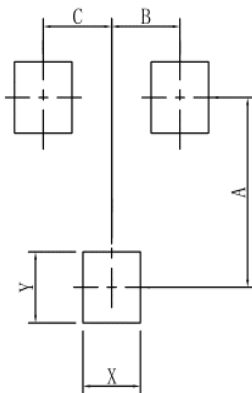


SOT23-LC			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.01	0.06	0.10
b	0.30	0.40	0.50
c	0.10	0.17	0.20
D	2.80	2.90	3.00
E	1.50	1.60	1.70
e	1.80	1.90	2.00
L	0.20	0.40	0.60
L1	0.60REF		
HE	2.60	2.80	3.00
θ	0°	-	10°
All Dimensions in mm			

#### 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

### 9. SOLDERING FOOTPRINT



SOT23-LC	
DIM	(mm)
X	0.80
Y	0.90
A	2.40
B	0.95
C	0.95