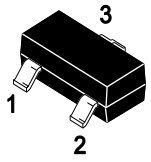
# LP3443LT1G
# S-LP3443LT1G

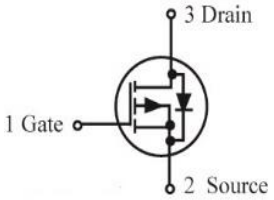
20V P-Channel Enhancement-Mode MOSFET

## 1. FEATURES

- VDS = -20V
- RDS(ON),VGS@-4.5V,IDS@-4.7A=70mΩ
- RDS(ON),VGS@-2.5V,IDS@-1.0A=110mΩ
- 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




SOT23(TO-236)




## 2. APPLICATIONS

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

## 3. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|---|---|---|
| LP3443LT1G | P34 | 3000/Tape&Reel |
| LP3443LT3G | P34 | 10000/Tape&Reel |

## 4. MAXIMUM RATINGS(Ta = 25ºC)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Drain–Source Voltage | VDSS | -20 | V |
| Gate–to–Source Voltage – Continuous | VGS | ±12 | V |
| Drain Current<br>– Continuous TA = 25°C<br>– Pulsed (Note 1) | <br>ID<br>IDM | <br>-4.7<br>-20 | A |

## 5. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Power Dissipation | PD | 1.1 | W |
| Thermal Resistance, Junction–to–Ambient(Note 2) | RΘJA | 110 | ºC/W |
| Junction and Storage temperature | TJ,Tstg | −55~+150 | ° C |

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

2.1-in² 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 = -250μAdc) | VBRDSS | -20 | - | - | Vdc |
| Zero Gate Voltage Drain Current (VGS = 0, VDS = -20 Vdc) | IDSS | - | - | -1 | μAdc |
| Gate–Body Leakage Current, Forward (VGS = 12 Vdc) | IGSSF | - | - | 100 | nAdc |
| Gate–Body Leakage Current, Reverse (VGS = - 12 Vdc) | IGSSR | - | - | -100 | nAdc |

ON CHARACTERISTICS (Note 3)

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

DYNAMIC CHARACTERISTICS

| | | | | | |
|---|---|---|---|---|---|
| Input Capacitance (VGS = 0 V, f = 200kHz,VDS= -10 V) | Ciss | - | 797.3 | - | pF |
| Output Capacitance (VGS = 0 V, f = 200kHz,VDS= -10 V) | Coss | - | 88.5 | - | pF |
| Reverse Transfer Capacitance (VGS = 0 V, f = 200kHz,VDS= -10 V) | Crss | - | 74.8 | - | pF |

SWITCHING CHARACTERISTICS

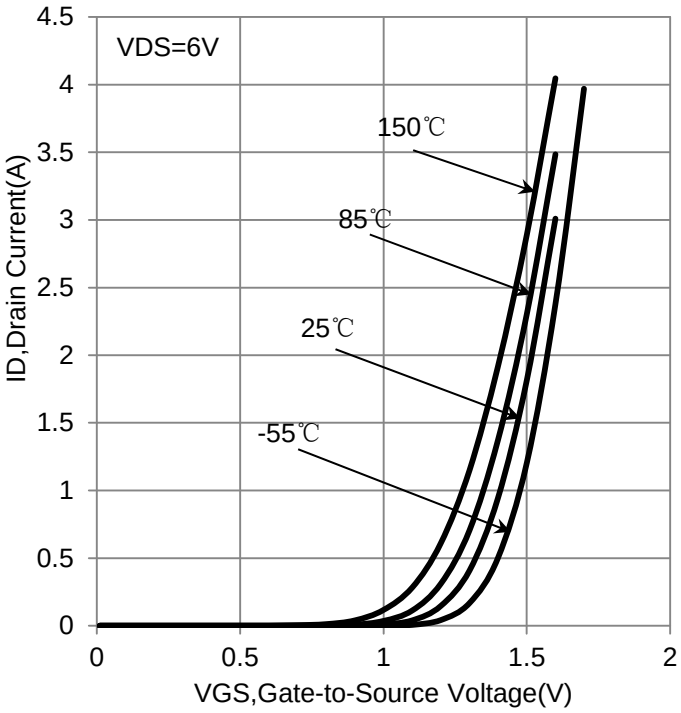
| | | | | | | |
|---|---|---|---|---|---|---|
| Turn-On Delay Time | (VDD = -10V, RD=10Ω ID = -1A, VGS = -4.5V, RG = 6Ω) | td(on) | - | 22 | 35 | ns |
| Rise Time | | tr | - | 35 | 55 | |
| Turn-Off Delay Time | | td(off) | - | 45 | 70 | |
| Fall Time | | tf | - | 25 | 40 | |

SOURCE–DRAIN DIODE CHARACTERISTICS

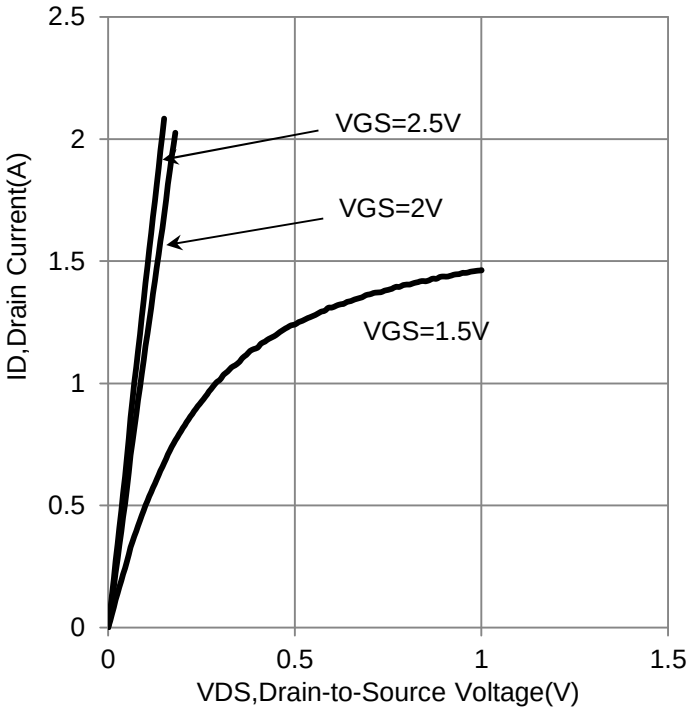
| | | | | | |
|---|---|---|---|---|---|
| Forward Voltage (VGS = 0 Vdc, ISD = -1.7 Adc) | VSD | - | - | -1.2 | V |

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

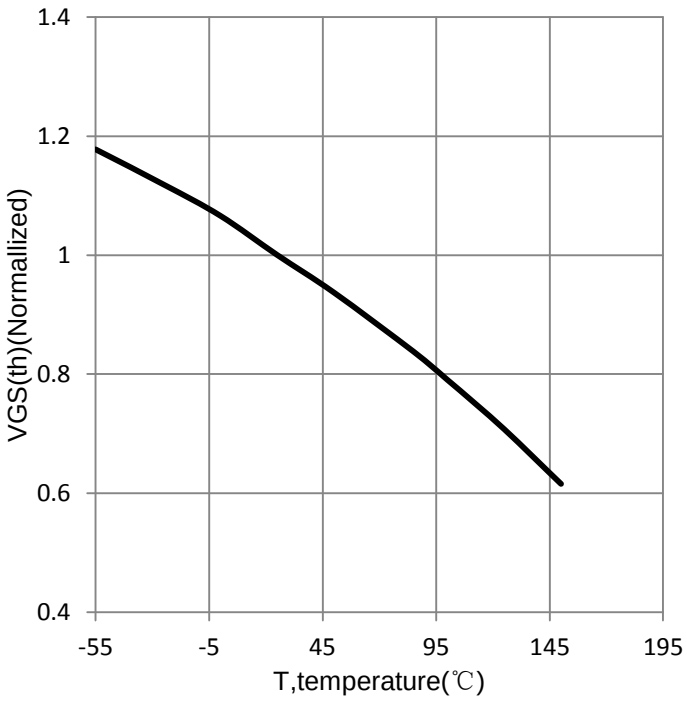
## 7. ELECTRICAL CHARACTERISTICS CURVES



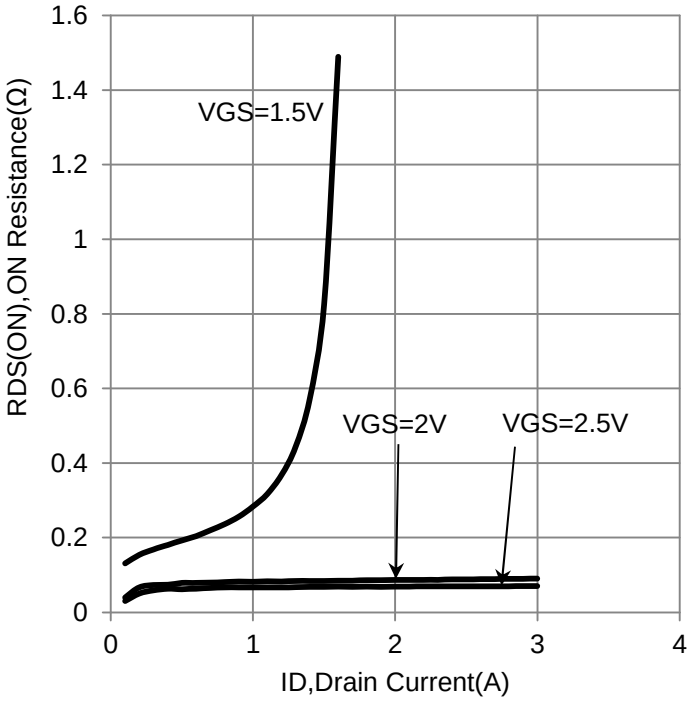

Transfer Characteristics




On-Region Characteristics

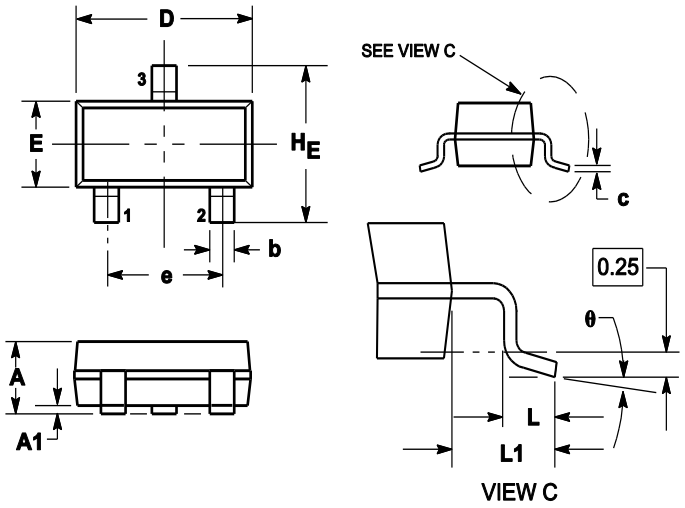



VGS(th) vs. Temperature




RDS(on) vs. ID

## 8.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.

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | 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 |
| $H_E$ | 2.10 | 2.4 | 2.64 | 0.083 | 0.094 | 0.104 |
| θ | 0° | --- | 10° | 0° | --- | 10° |

## 9.SOLDERING FOOTPRINT