



LET9006

RF POWER TRANSISTORS

Ldmos Enhanced Technology in Plastic Package

TARGET DATA

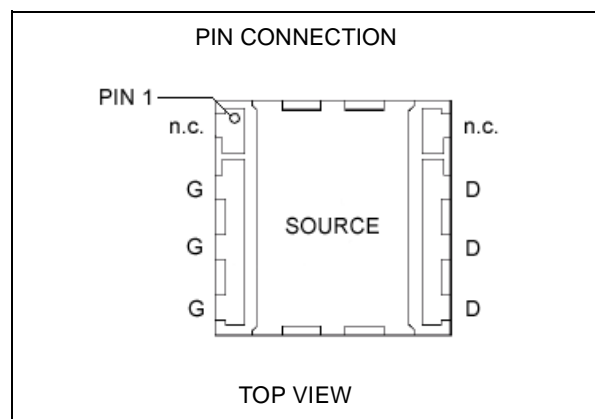
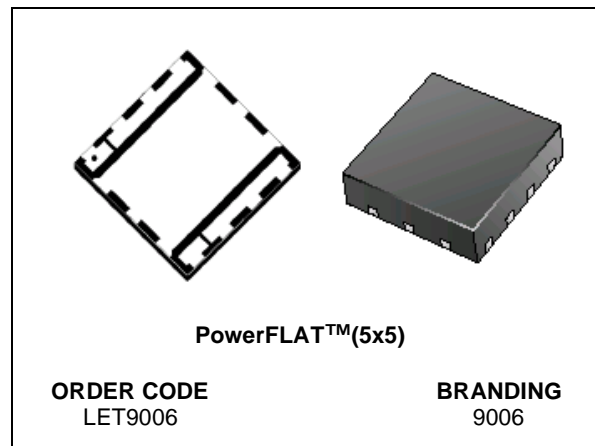
N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 6\text{ W}$ with 17 dB gain @ 960 MHz / 26V
- NEW LEADLESS PLASTIC PACKAGE
- ESD PROTECTION
- SUPPLIED IN TAPE & REEL OF 3K UNITS

DESCRIPTION

The LET9006 is a common source N-Channel, enhancement-mode lateral Field-Effect RF power transistor. It is designed for high gain, broad band commercial and industrial applications. It operates at 26 V in common source mode at frequencies up to 1 GHz. LET9006 boasts the excellent gain, linearity and reliability of ST's latest LDMOS technology mounted in the innovative leadless SMD plastic package, PowerFLAT™.

It is ideal for digital cellular BTS applications requiring high linearity.



ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25\text{ }^{\circ}\text{C}$)

| Symbol | Parameter | Value | Unit |
|---------------|---|-------------|--------------------|
| $V_{(BR)DSS}$ | Drain-Source Voltage | 65 | V |
| V_{GS} | Gate-Source Voltage | -0.5 to +15 | V |
| I_D | Drain Current | 1 | A |
| P_{DISS} | Power Dissipation (@ $T_c = 70^{\circ}\text{C}$) | 16 | W |
| T_j | Max. Operating Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{STG} | Storage Temperature | -65 to +150 | $^{\circ}\text{C}$ |

THERMAL DATA

| | | | |
|---------------|-----------------------------------|---|----------------------|
| $R_{th(j-c)}$ | Junction -Case Thermal Resistance | 5 | $^{\circ}\text{C/W}$ |
|---------------|-----------------------------------|---|----------------------|

ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

STATIC

| Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|----------------------|--|------|------|------|------|
| V _{(BR)DSS} | V _{GS} = 0 V I _D = 1 mA | 65 | | | |
| I _{DSS} | V _{GS} = 0 V V _{DS} = 26 V | | | 1 | μA |
| I _{GSS} | V _{GS} = 5 V V _{DS} = 0 V | | | 1 | μA |
| V _{GS(Q)} | V _{DS} = 26 V I _D = TBD | 2.0 | | 5.0 | V |
| V _{DS(ON)} | V _{GS} = 10 V I _D = 0.5 A | | | 0.9 | V |
| g _{FS} | V _{DS} = 10 V I _D = 800 mA | | TBD | | mho |
| C _{ISS} | V _{GS} = 0 V V _{DS} = 26 V f = 1 MHz | | TBD | | pF |
| C _{OSS} | V _{GS} = 0 V V _{DS} = 26 V f = 1 MHz | | TBD | | pF |
| C _{RSS} | V _{GS} = 0 V V _{DS} = 26 V f = 1 MHz | | TBD | | pF |

DYNAMIC (f = 960 MHz)

| Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|---|------|------|------|------|
| P _{OUT} ⁽¹⁾ | V _{DD} = 26 V I _{DQ} = TBD | 7 | 8 | | W |
| η _D ⁽¹⁾ | V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 6 W | 55 | 65 | | % |
| Load mismatch | V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 6 W ALL PHASE ANGLES | | | 10:1 | VSWR |

(1) 1 dB Compression point

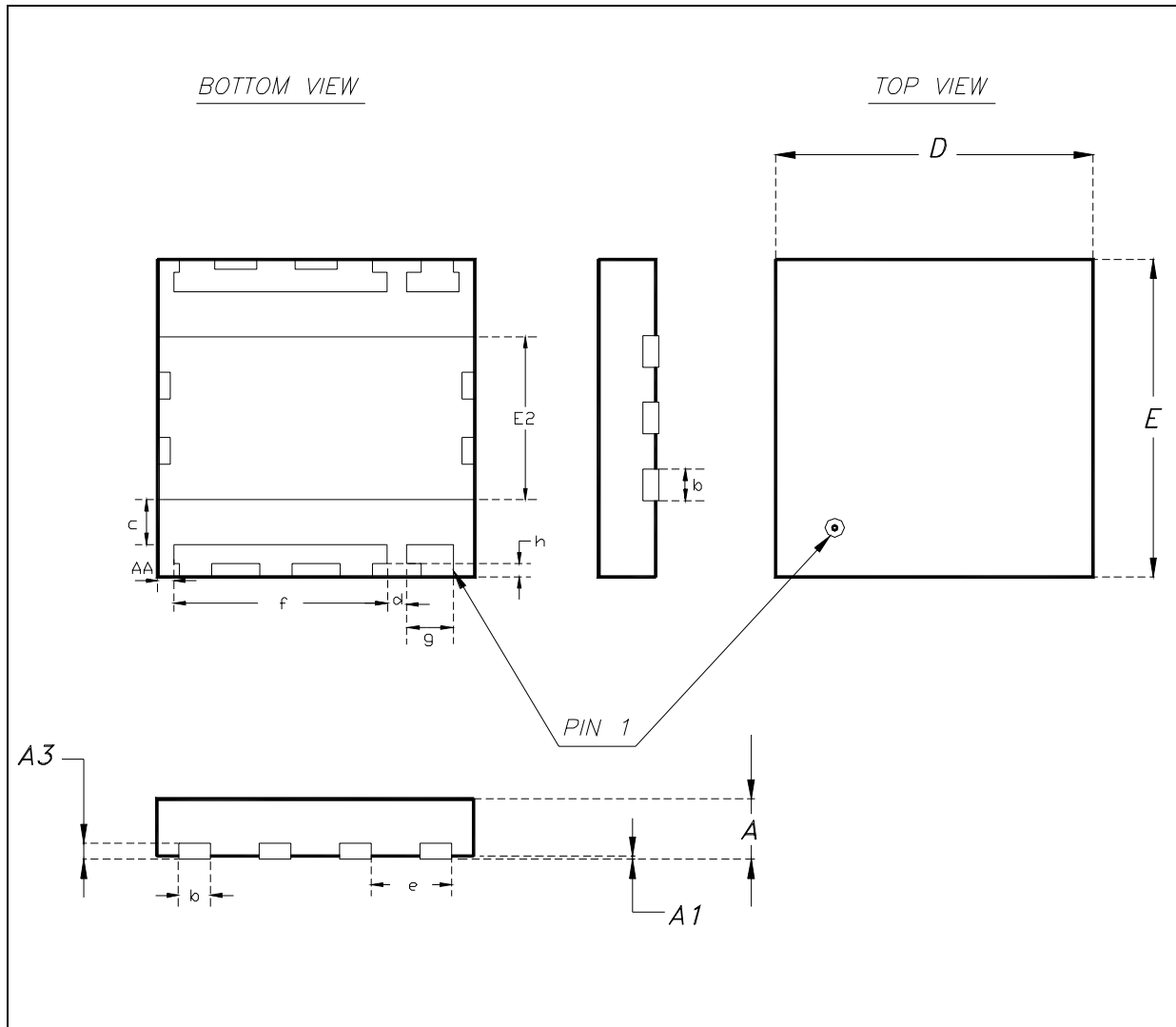
DYNAMIC (f = 920 - 960 MHz)

| Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|---|------|------|------|------|
| P _{out} ⁽¹⁾ | V _{DD} = 26 V I _{DQ} = TBD | 6 | 7 | | W |
| G _P | V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 6 W | 17 | | | dB |
| η _D ⁽¹⁾ | V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 6 W | 55 | 60 | | % |

(1) 1 dB Compression point

PowerFLAT™ MECHANICAL DATA

| DIM. | mm | | | Inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX | MIN. | TYP. | MAX |
| A | | 0.90 | 1.00 | | 0.035 | 0.039 |
| A1 | | 0.02 | 0.05 | | 0.001 | 0.002 |
| A3 | | 0.24 | | | 0.009 | |
| AA | 0.15 | 0.25 | 0.35 | 0.006 | 0.01 | 0.014 |
| b | 0.43 | 0.51 | 0.58 | 0.017 | 0.020 | 0.023 |
| c | 0.64 | 0.71 | 0.79 | 0.025 | 0.028 | 0.031 |
| D | | 5.00 | | | 0.197 | |
| d | | 0.30 | | | 0.011 | |
| E | | 5.00 | | | 0.197 | |
| E2 | 2.49 | 2.57 | 2.64 | 0.098 | 0.101 | 0.104 |
| e | | 1.27 | | | 0.050 | |
| f | | 3.37 | | | 0.132 | |
| g | | 0.74 | | | 0.03 | |
| h | | 0.21 | | | 0.008 | |



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