



LET9060C

RF POWER TRANSISTORS *Ldmos Enhanced Technology*

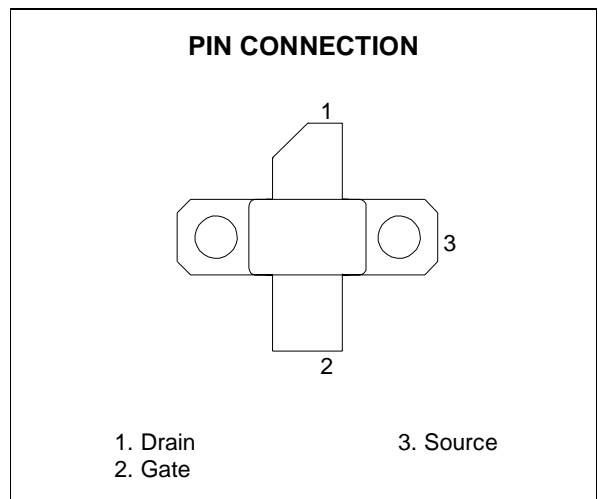
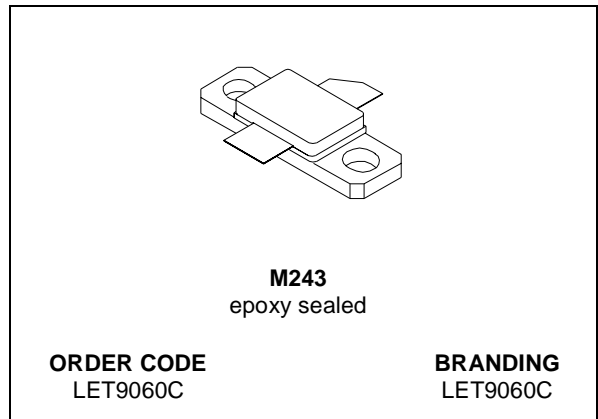
PRELIMINARY DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 60\text{ W}$ WITH 17.3 dB gain @ 945 MHz
- BeO FREE PACKAGE
- HIGH GAIN
- ESD PROTECTION

DESCRIPTION

The LET9060C is an N-Channel enhancement-mode lateral Field-Effect RF power transistor, designed for high gain broadband, commercial and industrial applications. It operates at 28 V in common source mode at frequencies up to 1.0 GHz. LET9060C boasts the excellent gain, linearity and reliability of the ST latest LDMOS technology. Its superior performances make it an ideal solution for base station applications.



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

| 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 | 7 | A |
| P_{DISS} | Power Dissipation (@ $T_c = 70^{\circ}\text{C}$) | 118 | W |
| T_j | Max. Operating Junction Temperature | 200 | $^{\circ}\text{C}$ |
| T_{STG} | Storage Temperature | -65 to +150 | $^{\circ}\text{C}$ |

THERMAL DATA

| | | | |
|---------------|-----------------------------------|-----|----------------------|
| $R_{th(j-c)}$ | Junction -Case Thermal Resistance | 1.1 | $^{\circ}\text{C/W}$ |
|---------------|-----------------------------------|-----|----------------------|

LET9060C

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

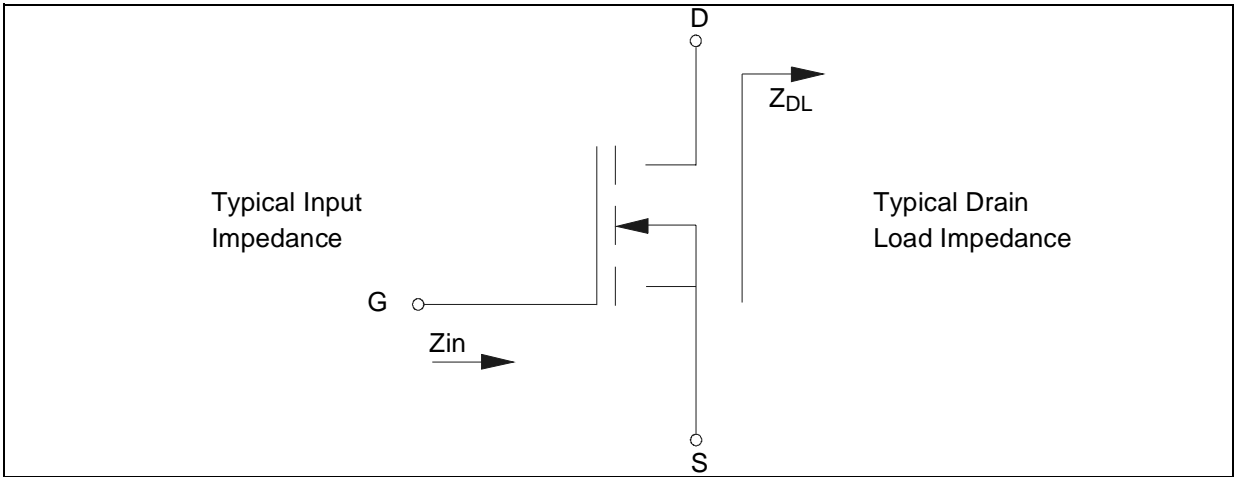
STATIC

| Symbol | Test Conditions | | Min. | Typ. | Max. | Unit |
|----------------------|------------------------|-------------------------|------|------|------|------|
| V _{(BR)DSS} | V _{GS} = 0 V | I _{DS} = 1 mA | 65 | | | V |
| I _{DSS} | V _{GS} = 0 V | V _{DS} = 28 V | | | 1 | μA |
| I _{GSS} | V _{GS} = 5 V | V _{DS} = 0 V | | | 1 | μA |
| V _{GS(Q)} | V _{DS} = 28 V | I _D = 100 mA | 2.0 | | 5.0 | V |
| V _{DS(ON)} | V _{GS} = 10 V | I _D = 3 A | | 0.7 | 0.8 | V |
| G _{FS} | V _{DS} = 10 V | I _D = 3 A | | 2.3 | | mho |
| C _{ISS} | V _{GS} = 0 V | V _{DS} = 28 V | | 69.5 | | pF |
| C _{OSS} | V _{GS} = 0 V | V _{DS} = 28 V | | 38 | | pF |
| C _{RSS} | V _{GS} = 0 V | V _{DS} = 28 V | | 1.6 | | pF |

DYNAMIC

| Symbol | Test Conditions | | Min. | Typ. | Max. | Unit |
|------------------|--|--|------|------|------|------|
| P _{1dB} | V _{DD} = 26 V | I _{DQ} = 250 mA f = 945 MHz | 60 | 65 | | W |
| G _P | V _{DD} = 26 V | I _{DQ} = 250 mA P _{OUT} = 60 W f = 945 MHz | | 17.3 | | dB |
| η _D | V _{DD} = 26 V | I _{DQ} = 250 mA P _{OUT} = 60 W f = 945 MHz | | 60 | | % |
| Load mismatch | V _{DD} = 26 V I _{DQ} = 250 mA P _{OUT} = 60 W f = 945 MHz ALL PHASE ANGLES | | 5:1 | | | VSWR |

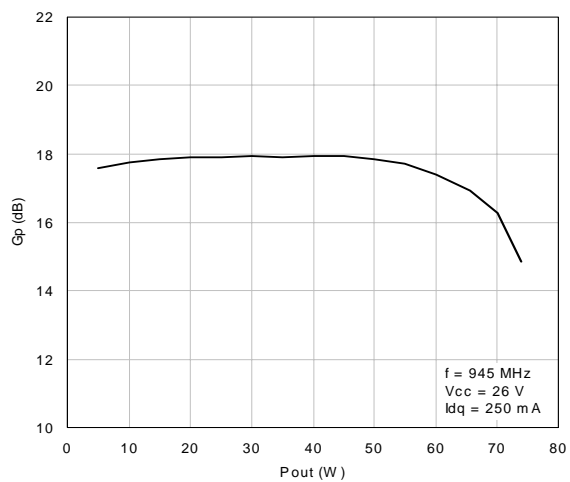
IMPEDANCE DATA



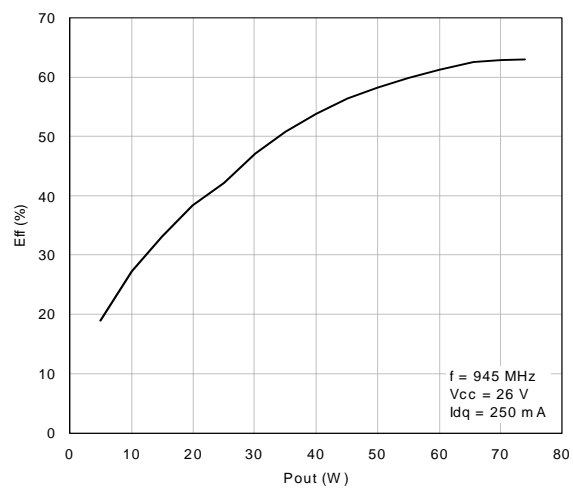
| FREQ. | Z _{IN} (Ω) | Z _{DL} (Ω) |
|---------|---------------------|---------------------|
| 925 MHz | TBD | TBD |
| 945 MHz | TBD | TBD |
| 960 MHz | TBD | TBD |

TYPICAL PERFORMANCE

Power Gain vs. Output Power

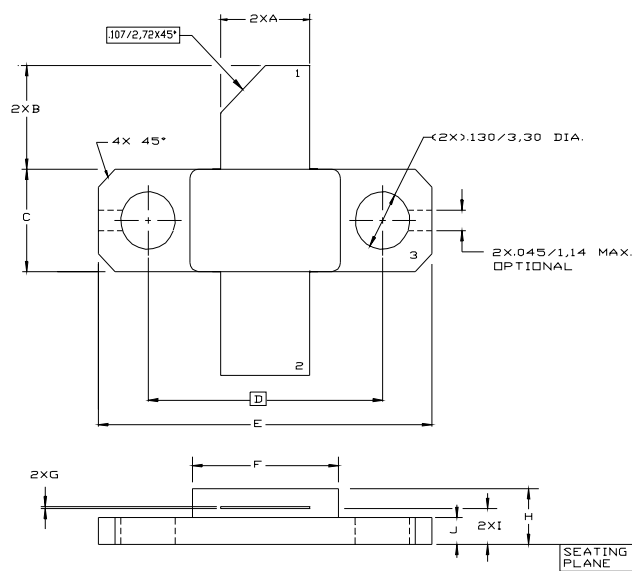


Efficiency vs. Output Power



M243 (.230 x .360 2L N/HERM W/FLG) MECHANICAL DATA

| DIM. | mm | | | Inch | | |
|------|-------|-------|-------|-------|-------|-------|
| | MIN. | TYP. | MAX | MIN. | TYP. | MAX |
| A | 5.21 | | 5.72 | 0.205 | | 0.225 |
| B | 5.46 | | 6.48 | 0.215 | | 0.255 |
| C | 5.59 | | 6.10 | 0.220 | | 0.240 |
| D | | 14.27 | | | 0.562 | |
| E | 20.07 | | 20.57 | 0.790 | | 0.810 |
| F | 8.89 | | 9.40 | 0.350 | | 0.370 |
| G | 0.10 | | 0.15 | 0.004 | | 0.006 |
| H | 3.18 | | 4.45 | 0.125 | | 0.175 |
| I | 1.83 | | 2.24 | 0.072 | | 0.088 |
| J | 1.27 | | 1.78 | 0.050 | | 0.070 |



Controlling dimension: Inches

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