



SD57060-01

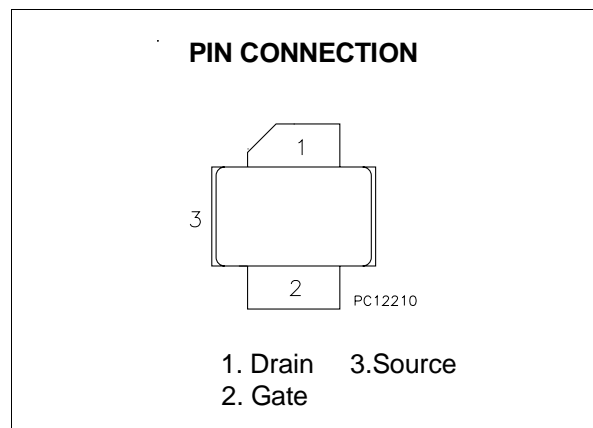
RF & MICROWAVE TRANSISTORS N-Channel Enhancement-Mode Lateral MOSFETs

TARGET DATA

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 60\text{ W}$ with 11.5 dB gain @ 945 MHz
- BeO FREE PACKAGE

DESCRIPTION

The SD57060-01 is a common source N-Channel enhancement-mode lateral Field-Effect RF power transistor designed for broadband commercial and industrial applications at frequencies up to 1.0 GHz. The SD57060-01 is designed for high gain and broadband performance operating in common source mode at 28V. It is ideal for base stations 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 | ± 20 | V |
| I_D | Drain Current | 7 | A |
| P_{DISS} | Power Dissipation (@ $T_c = 70^{\circ}\text{C}$) | TBD | 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 | TBD | $^{\circ}\text{C}/\text{W}$ |
|---------------|----------------------------------|-----|-----------------------------|

ELECTRICAL SPECIFICATION ($T_{\text{case}} = 25\text{ }^{\circ}\text{C}$)

STATIC

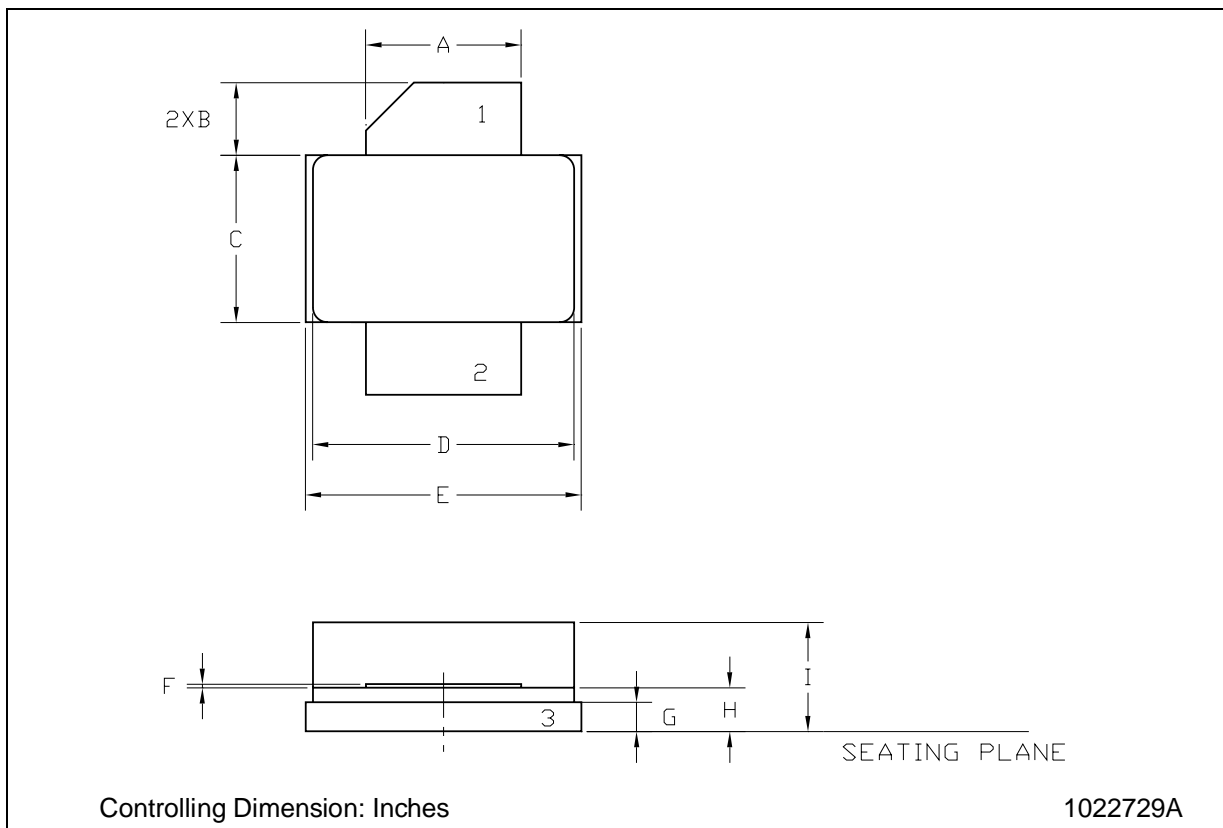
| Symbol | Parameter | | | Min. | Typ. | Max. | Unit |
|-----------------------------|------------------------------|--------------------------------|--------------------|------|------|------|---------------|
| $V_{(\text{BR})\text{DSS}}$ | $V_{\text{GS}} = 0\text{V}$ | $I_{\text{DS}} = 1\text{ mA}$ | | 65 | | | V |
| I_{DSS} | $V_{\text{GS}} = 0\text{V}$ | $V_{\text{DS}} = 28\text{ V}$ | | | | 1 | μA |
| I_{GSS} | $V_{\text{GS}} = 20\text{V}$ | $V_{\text{DS}} = 0\text{ V}$ | | | | 1 | μA |
| $V_{\text{GS(Q)}}$ | $V_{\text{DS}} = 28\text{V}$ | $I_{\text{D}} = 100\text{ mA}$ | | 2.5 | | 5.0 | V |
| $V_{\text{DS(ON)}}$ | $V_{\text{GS}} = 10\text{V}$ | $I_{\text{D}} = 3\text{ A}$ | | | 0.7 | | V |
| G_{FS} | $V_{\text{DS}} = 10\text{V}$ | $I_{\text{D}} = 3\text{ A}$ | | 2.2 | 3 | | mho |
| C_{ISS} | $V_{\text{GS}} = 0\text{V}$ | $V_{\text{DS}} = 28\text{ V}$ | $f = 1\text{ MHz}$ | | 83 | | pF |
| C_{OSS} | $V_{\text{GS}} = 0\text{V}$ | $V_{\text{DS}} = 28\text{ V}$ | $f = 1\text{ MHz}$ | | 44 | | pF |
| C_{RSS} | $V_{\text{GS}} = 0\text{V}$ | $V_{\text{DS}} = 28\text{ V}$ | $f = 1\text{ MHz}$ | | 4.0 | | pF |

DYNAMIC

| Symbol | Parameter | | | | Min. | Typ. | Max. | Unit |
|-------------------|----------------------|-------------------------------|---------------------------------|---------------------------------|------|------|------|------|
| P_{OUT} | $f = 945\text{ MHz}$ | $V_{\text{DD}} = 28\text{V}$ | $I_{\text{DQ}} = 100\text{ mA}$ | | 60 | | | W |
| G_{PS} | $f = 945\text{ MHz}$ | $V_{\text{DD}} = 28\text{ V}$ | $P_{\text{out}} = 60\text{ W}$ | $I_{\text{DQ}} = 100\text{ mA}$ | 11.5 | 15 | | dB |
| η_{D} | $f = 945\text{ MHz}$ | $V_{\text{DD}} = 28\text{ V}$ | $P_{\text{out}} = 60\text{ W}$ | $I_{\text{DQ}} = 100\text{ mA}$ | 53 | 60 | | % |
| Load Mismatch | $f = 945\text{ MHz}$ | $V_{\text{DD}} = 28\text{ V}$ | $P_{\text{out}} = 60\text{ W}$ | $I_{\text{DQ}} = 100\text{ mA}$ | 5:1 | | | VSWR |
| | ALL PHASE ANGLES | | | | | | | |

M250 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 5.21 | | 5.71 | 0.205 | | 0.225 |
| B | 2.16 | | 2.92 | 0.085 | | 0.115 |
| C | 5.59 | | 6.09 | 0.220 | | 0.240 |
| D | 8.89 | | 9.40 | 0.350 | | 0.370 |
| E | 9.40 | | 9.91 | 0.370 | | 0.390 |
| F | 0.11 | | 0.15 | 0.004 | | 0.006 |
| G | 0.89 | | 1.14 | 0.035 | | 0.045 |
| H | 1.45 | | 1.70 | 0.057 | | 0.067 |
| I | 2.67 | | 3.94 | 0.105 | | 0.155 |



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