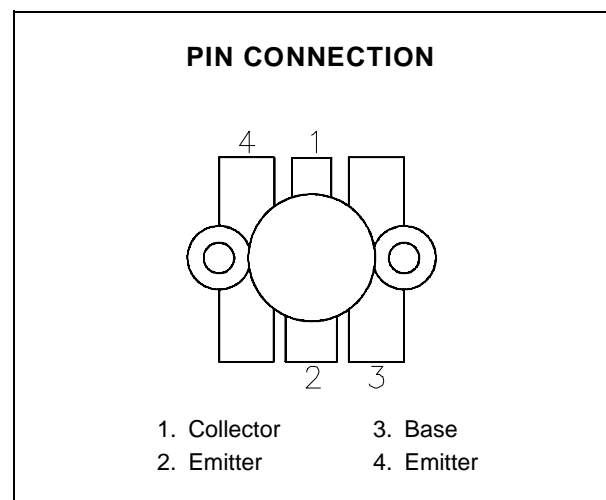
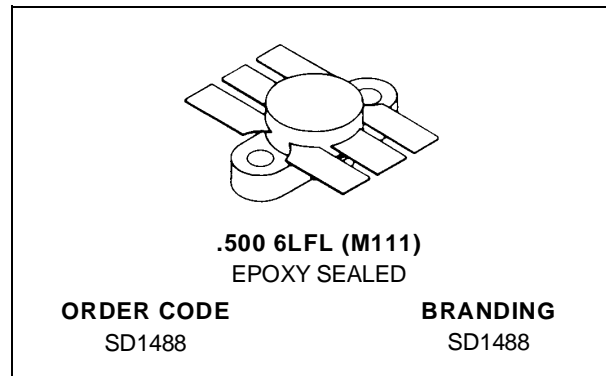


**RF & MICROWAVE TRANSISTORS
UHF MOBILE APPLICATIONS**

- 470 MHz
- 12.5 VOLTS
- EFFICIENCY 50%
- COMMON EMITTER
- P_{OUT} = 38 W MIN. WITH 5.8 dB GAIN


DESCRIPTION

The SD1488 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed primarily for broad-band applications in the 450 - 512 MHz land mobile radio band. This device utilizes diffused emitter resistors to withstand infinite VSWR at rated operating conditions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

| Symbol | Parameter | Value | Unit |
|-------------------|---------------------------|--------------|------|
| V _{CBO} | Collector-Base Voltage | 36 | V |
| V _{CEO} | Collector-Emitter Voltage | 16 | V |
| V _{EBO} | Emitter-Base Voltage | 4.0 | V |
| I _C | Device Current | 8.0 | A |
| P _{DISS} | Power Dissipation | 117 | W |
| T _J | Junction Temperature | +200 | °C |
| T _{STG} | Storage Temperature | - 65 to +150 | °C |

THERMAL DATA

| | | | |
|----------------------|----------------------------------|-----|------|
| R _{TH(j-c)} | Junction-Case Thermal Resistance | 1.5 | °C/W |
|----------------------|----------------------------------|-----|------|

SD1488

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

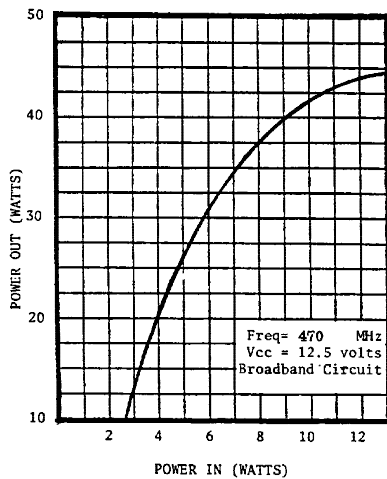
| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|--------------------------|-----------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV _{CES} | I _C = 15 mA | V _{BE} = 0 V | 36 | — | — | V |
| BV _{CEO} | I _C = 50 mA | I _B = 0 mA | 16 | — | — | V |
| BV _{EBO} | I _E = 5 mA | I _C = 0 mA | 4.0 | — | — | V |
| I _{CES} | V _{CE} = 12.5 V | I _E = 0 mA | — | — | 5 | mA |
| h _{FE} | V _{CE} = 5 V | I _C = 1 A | 20 | — | 300 | — |

DYNAMIC

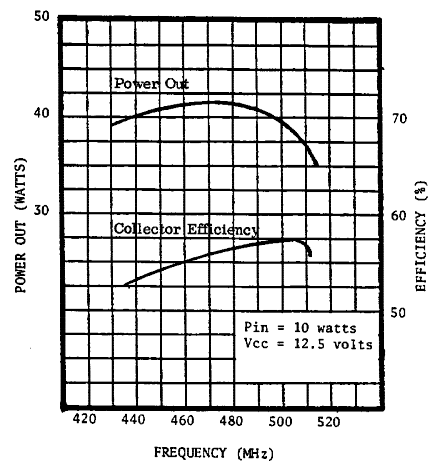
| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|-----------------|--------------------------|--------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 470 MHz | P _{IN} = 10.0 W | V _{CC} = 12.5 V | 38 | — | — | W |
| G _P | f = 470 MHz | P _{IN} = 10.0 W | V _{CC} = 12.5 V | 5.8 | — | — | dB |
| η _C | f = 470 MHz | P _{OUT} = 38 W | V _{CC} = 12.5 V | 50 | — | — | % |
| C _{OB} | f = 1 MHz | V _{CB} = 12.5 V | | — | 95 | — | pF |

TYPICAL PERFORMANCE

POWER OUTPUT vs POWER INPUT

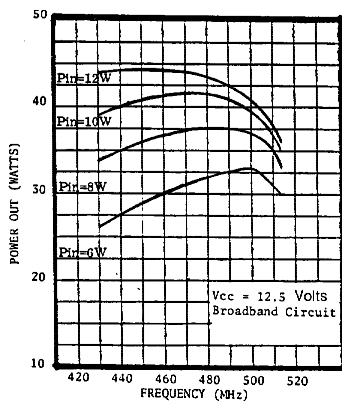


POWER OUTPUT & COLLECTOR EFFICIENCY vs FREQUENCY

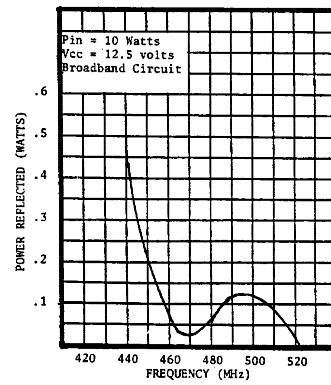


TYPICAL PERFORMANCE (cont'd)

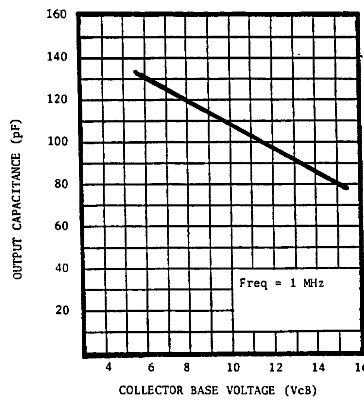
POWER OUTPUT vs FREQUENCY



POWER REFLECTED vs FREQUENCY

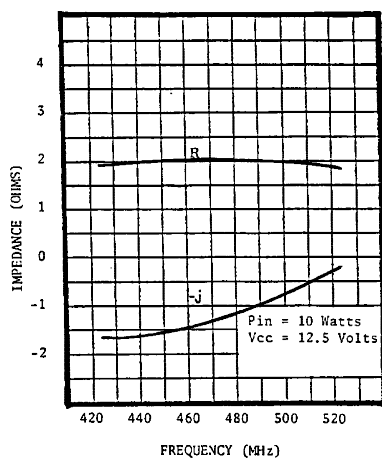


OUTPUT CAPACITANCE vs COLLECTOR BASE VOLTAGE

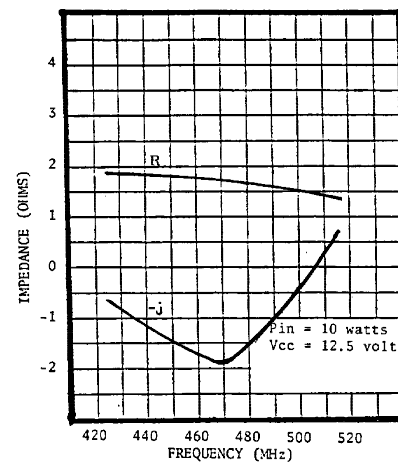


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE

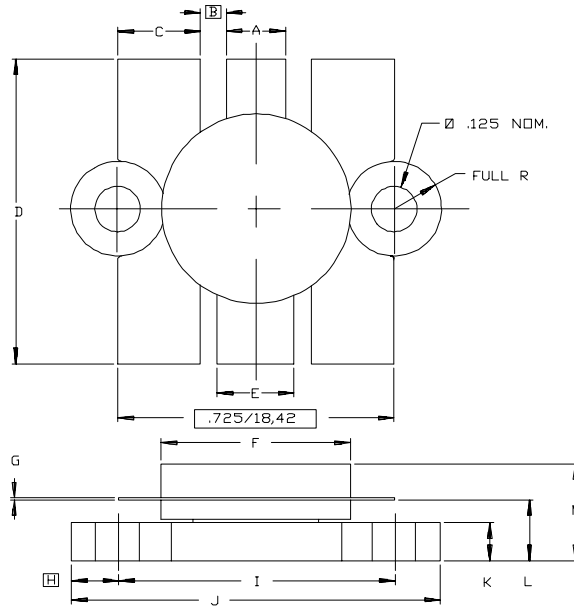


TYPICAL COLLECTOR LOAD IMPEDANCE



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0111



| SGS-THOMSON MICROELECTRONICS | | | CONT'D | | |
|------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm | | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .150/3,43 | .160/4,06 | K | .095/2,41 | .105/2,67 |
| B | .045/1,14 | | L | .150/3,81 | .170/4,32 |
| C | .210/5,33 | .220/5,59 | M | | .280/7,11 |
| D | .835/21,21 | .865/21,97 | | | |
| E | .200/5,08 | .210/5,33 | | | |
| F | .490/12,45 | .510/12,95 | | | |
| G | .003/0,08 | .007/0,18 | | | |
| H | .125/3,18 | | | | |
| I | .720/18,29 | .730/18,54 | | | |
| J | .970/24,64 | .980/24,89 | | | |

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