

## SD1429-03

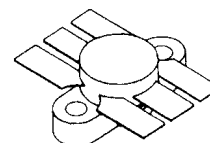
### RF & MICROWAVE TRANSISTORS UHF MOBILE APPLICATIONS

#### Features

- 470 MHz
- 12.5 VOLTS
- $P_{OUT} = 15.0$  WATTS
- $G_P = 7.5$  dB MINIMUM
- COMMON EMITTER CONFIGURATION

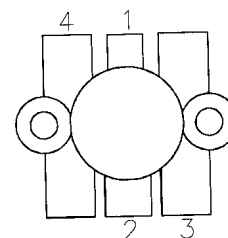
#### DESCRIPTION:

The SD1429-03 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for UHF communications. It withstands infinite VSWR at rated operating conditions.



.500 6LFL (M111)  
epoxy sealed

#### PIN CONNECTION



- |              |            |
|--------------|------------|
| 1. Collector | 3. Emitter |
| 2. Base      | 4. Emitter |

#### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

| Symbol    | Parameter                 | Value       | Unit |
|-----------|---------------------------|-------------|------|
| $V_{CBO}$ | Collector-Base Voltage    | 36          | V    |
| $V_{CEO}$ | Collector-Emitter Voltage | 16          | V    |
| $V_{CES}$ | Collector-Emitter Voltage | 36          | V    |
| $V_{EBO}$ | Emitter-Base Voltage      | 4.0         | V    |
| $I_C$     | Collector Current         | 3.4         | W    |
| $P_{tot}$ | Total Power Dissipation   | 37.5        | A    |
| $T_J$     | Junction Temperature      | +200        | °C   |
| $T_{STG}$ | Storage Temperature       | -65 to +150 | °C   |

#### Thermal Data

|               |                                  |     |      |
|---------------|----------------------------------|-----|------|
| $R_{TH(J-C)}$ | Thermal Resistance Junction-case | 4.6 | °C/W |
|---------------|----------------------------------|-----|------|

## ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

### STATIC

| Symbol     | Test Conditions          |                         | Value |      |      | Unit |
|------------|--------------------------|-------------------------|-------|------|------|------|
|            |                          |                         | Min.  | Typ. | Max. |      |
| $BV_{CES}$ | $I_C = 50 \text{ mA}$    | $V_{BE} = 0 \text{ mA}$ | 36    | ---  | ---  | V    |
| $BV_{CEO}$ | $I_C = 50 \text{ mA}$    | $I_B = 0 \text{ V}$     | 16    | ---  | ---  | V    |
| $BV_{EBO}$ | $I_C = 10 \text{ mA}$    | $I_C = 0 \text{ mA}$    | 4.0   | ---  | ---  | V    |
| $I_{CES}$  | $V_{CE} = 15 \text{ V}$  | $V_{BE} = 0 \text{ mA}$ | ---   | ---  | 5    | mA   |
| HFE        | $V_{CE} = 5.0 \text{ V}$ | $I_C = 500 \text{ A}$   | 20    | ---  | 200  | ---  |

### DYNAMIC

| Symbol    | Test Conditions       |                           |                           | Value |      |      | Unit |
|-----------|-----------------------|---------------------------|---------------------------|-------|------|------|------|
|           |                       |                           |                           | Min.  | Typ. | Max. |      |
| $P_{OUT}$ | $f = 470 \text{ MHz}$ | $P_{IN} = 2.65 \text{ W}$ | $V_{CE} = 12.5 \text{ V}$ | 15    | ---  | ---  | W    |
| $G_p$     | $f = 470 \text{ MHz}$ | $P_{IN} = 2.65 \text{ W}$ | $V_{CE} = 12.5 \text{ V}$ | 7.5   | ---  | ---  | dB   |
| $C_{OB}$  | $f = 1 \text{ MHz}$   | $V_{CB} = 12.0 \text{ V}$ |                           | ---   | ---  | 50.0 | pf   |

### IMPEDANCE DATA

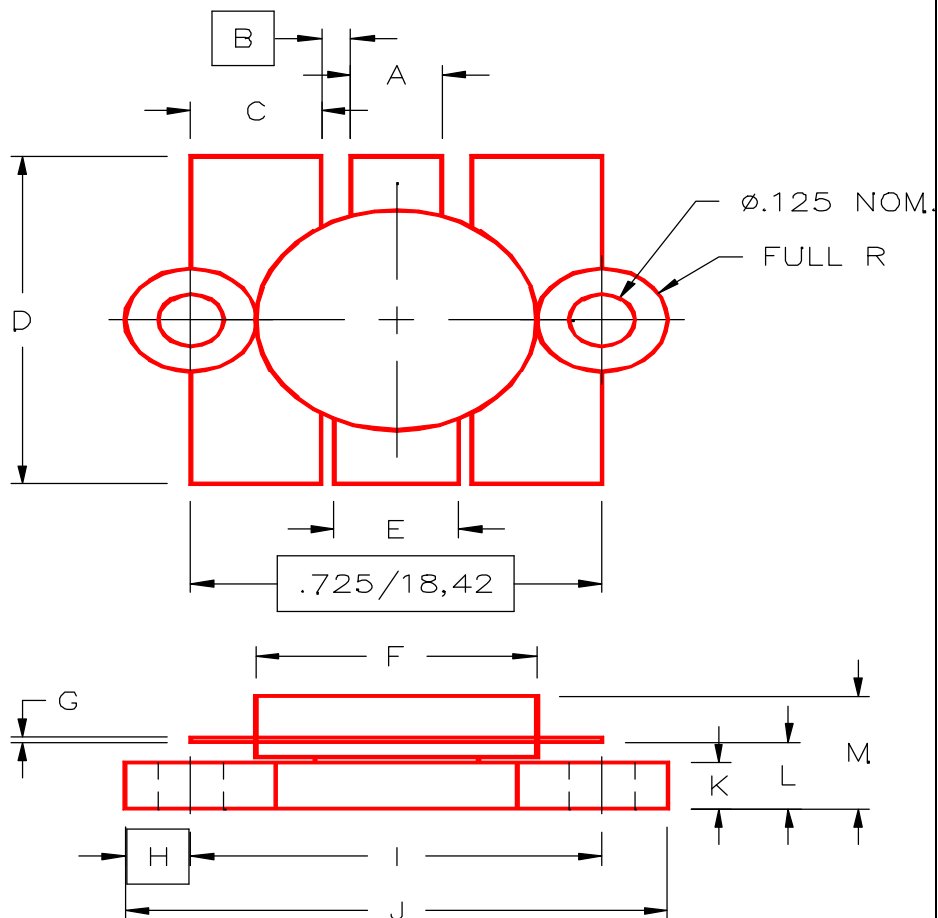
| FREQ    | $Z_{IN}(\Omega)$ | $Z_{CL}(\Omega)$ |
|---------|------------------|------------------|
| 450 MHz | $2.9 - j 0.2$    | $1.0 + j 1.9$    |
| 470 MHz | $2.4 - j 0.9$    | $0.90 + j 2.3$   |
| 512 MHz | $0.3 + j 0.4$    | $0.90 + j 2.3$   |

$P_{OUT} = 15 \text{ W}$

$V_{CE} = 12.5 \text{ V}$

## PACKAGE MECHANICAL DATA

### PACKAGE STYLE M111



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