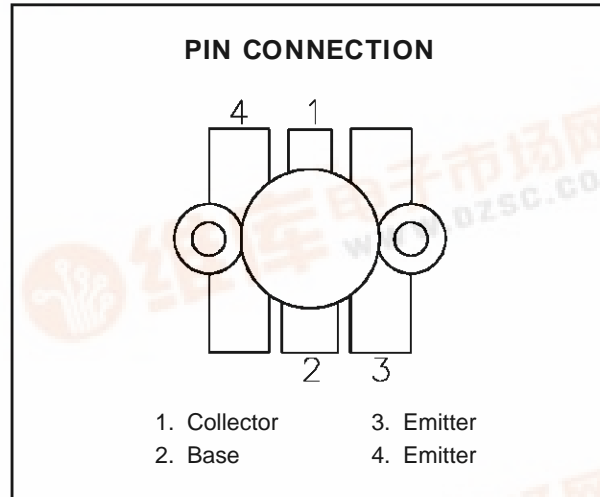
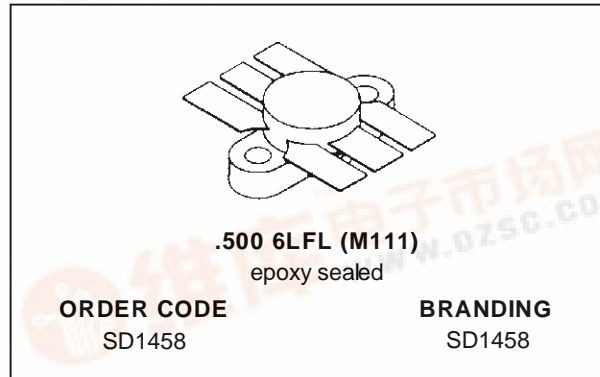




**SD1458**

**RF & MICROWAVE TRANSISTORS  
TVLINEAR APPLICATIONS**

- 170 - 230 MHz
- 28 VOLTS
- IMD -55 dB
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- HIGH SATURATED POWER CAPABILITY
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- P<sub>OUT</sub> = 14 W MIN. WITH 14.0 dB GAIN



**DESCRIPTION**

The SD1458 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class A operation in VHF and band III television transmitters and transposers.

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

| Symbol            | Parameter                 | Value        | Unit |
|-------------------|---------------------------|--------------|------|
| V <sub>CBO</sub>  | Collector-Base Voltage    | 60           | V    |
| V <sub>CEO</sub>  | Collector-Emitter Voltage | 35           | V    |
| V <sub>EBO</sub>  | Emitter-Base Voltage      | 4.0          | V    |
| I <sub>c</sub>    | Device Current            | 10           | A    |
| P <sub>DISS</sub> | Power Dissipation         | 140          | W    |
| T <sub>J</sub>    | Junction Temperature      | +200         | °C   |
| T <sub>STG</sub>  | Storage Temperature       | - 65 to +150 | °C   |

**THERMAL DATA**

|                      |                                  |     |      |
|----------------------|----------------------------------|-----|------|
| R <sub>TH(j-c)</sub> | Junction-Case Thermal Resistance | 1.5 | °C/W |
|----------------------|----------------------------------|-----|------|



## SD1458

### ELECTRICAL SPECIFICATIONS ( $T_{case} = 25^{\circ}C$ )

#### STATIC

| Symbol     | Test Conditions |                     |     | Value |      |      | Unit |
|------------|-----------------|---------------------|-----|-------|------|------|------|
|            |                 |                     |     | Min.  | Typ. | Max. |      |
| $BV_{CER}$ | $I_C = 50mA$    | $R_{BE} = 10\Omega$ | 60  | —     | —    | V    |      |
| $BV_{CEO}$ | $I_C = 50mA$    | $I_B = 0mA$         | 35  | —     | —    | V    |      |
| $BV_{EBO}$ | $I_E = 10mA$    | $I_C = 0mA$         | 4.0 | —     | —    | V    |      |
| $I_{CES}$  | $V_{CE} = 50V$  | $I_E = 0mA$         | —   | —     | 5    | mA   |      |
| $h_{FE}$   | $V_{CE} = 5V$   | $I_C = 1A$          | 10  | —     | 100  | —    |      |

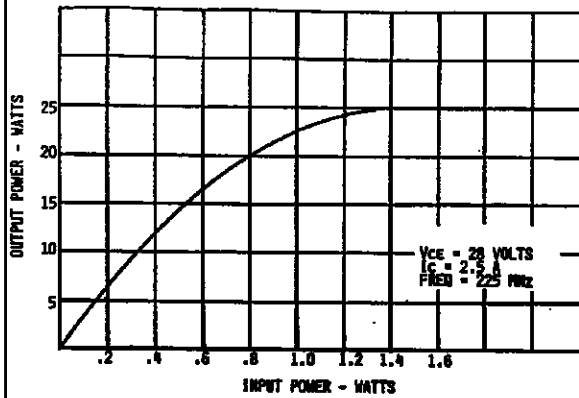
#### DYNAMIC

| Symbol    | Test Conditions      |                        |                      | Value |      |      | Unit |
|-----------|----------------------|------------------------|----------------------|-------|------|------|------|
|           |                      |                        |                      | Min.  | Typ. | Max. |      |
| $P_{OUT}$ | $f = 225\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_C = 2.5\text{ A}$ | 14    | —    | —    | W    |
| $G_P$     | $f = 225\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_C = 2.5\text{ A}$ | 14    | —    | —    | dB   |
| $IMD_3$   | $f = 225\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_C = 2.5\text{ A}$ | —     | —    | -55  | dBc  |
| $C_{OB}$  | $f = 1\text{ MHz}$   | $V_{CB} = 28\text{ V}$ |                      | —     | —    | 80   | pF   |

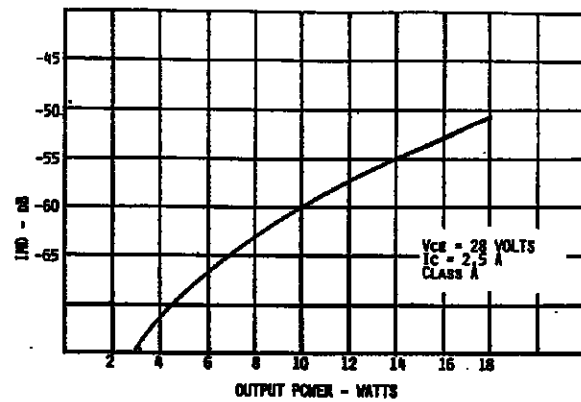
Note:  $IMD_3$   
- Vision Carrier - 8dB  
- Sound Carrier - 7dB  
- Sideband Carrier - 16dB

## TYPICAL PERFORMANCE

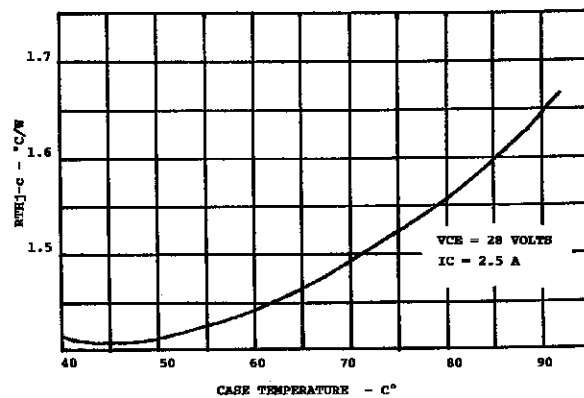
POWER OUTPUT vs POWER INPUT



IMD vs POWER OUTPUT



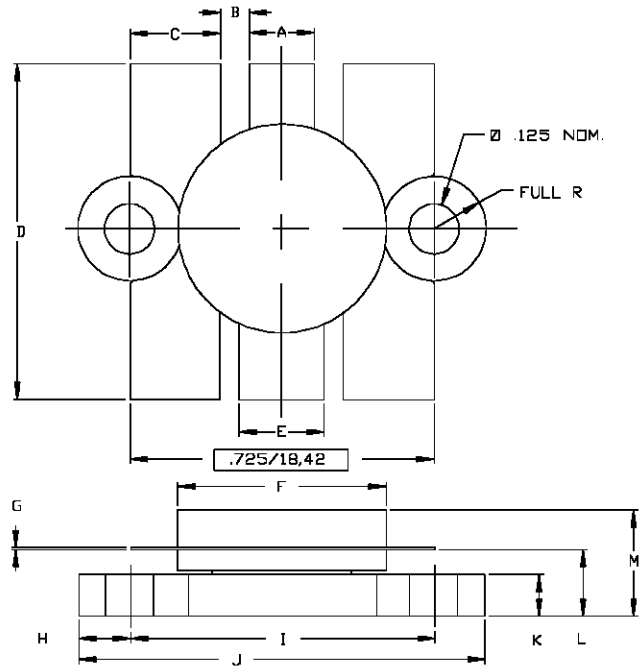
THERMAL RESISTANCE vs CASE TEMPERATURE



**SD1458**

**PACKAGE MECHANICAL DATA**

Ref.: Dwg. No.12-0111



| SGS-THOMSON MICROELECTRONICS |                      |                      | CONT'D |                      |                      |
|------------------------------|----------------------|----------------------|--------|----------------------|----------------------|
|                              | MINIMUM<br>Inches/mm | MAXIMUM<br>Inches/mm |        | MINIMUM<br>Inches/mm | MAXIMUM<br>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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