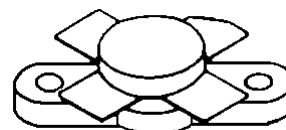


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 30 MHz
- 28 VOLTS
- IMD -28 dB
- COMMON EMITTER
- GOLD METALLIZATION
- $P_{OUT} = 30\text{ W MIN. WITH } 18\text{ dB GAIN}$



.380 4LFL (M113)
epoxy sealed

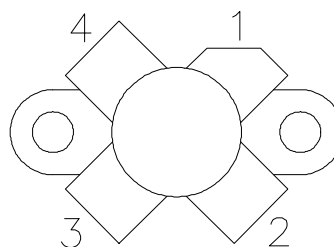
ORDER CODE
SD1224-10

BRANDING
1224-10

DESCRIPTION

The SD1224-10 is a 28 V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting for improved ruggedness and reliability.

PIN CONNECTION



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

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

| Symbol | Parameter | Value | Unit |
|------------|---------------------------|--------------|--------------------|
| V_{CBO} | Collector-Base Voltage | 65 | V |
| V_{CEO} | Collector-Emitter Voltage | 36 | V |
| V_{EBO} | Emitter-Base Voltage | 4.0 | V |
| I_C | Device Current | 4.5 | A |
| P_{DISS} | Power Dissipation | 80 | W |
| T_J | 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 | 2.2 | $^{\circ}\text{C/W}$ |
|---------------|----------------------------------|-----|----------------------|

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

| Symbol | Test Conditions | | Value | | | Unit |
|------------|-----------------|---------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV_{CBO} | $I_C = 200mA$ | $I_E = 0mA$ | 65 | — | — | V |
| BV_{CES} | $I_C = 200mA$ | $V_{BE} = 0V$ | 65 | — | — | V |
| BV_{CEO} | $I_C = 200mA$ | $I_B = 0mA$ | 35 | — | — | V |
| BV_{EBO} | $I_E = 10mA$ | $I_C = 0mA$ | 4.0 | — | — | V |
| I_{CBO} | $V_{CB} = 30V$ | $I_E = 0mA$ | — | — | 1 | mA |
| h_{FE} | $V_{CE} = 5V$ | $I_C = .5A$ | 5 | — | 200 | — |

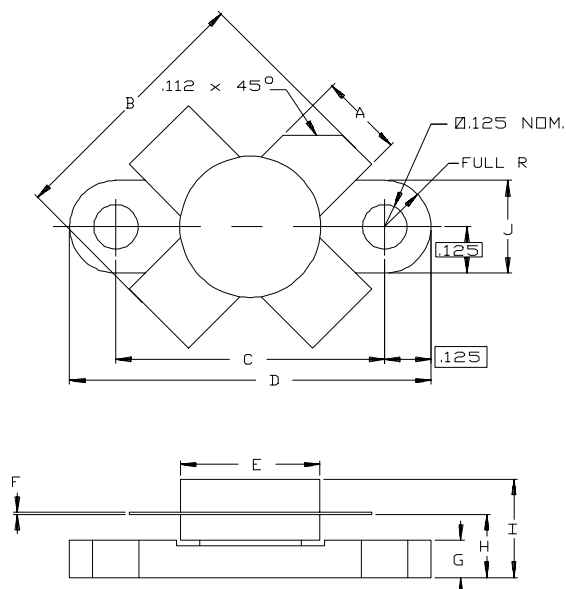
DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|-----------|---------------------|------------------------|-------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P_{OUT} | $f = 30\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_{CQ} = 25\text{ mA}$ | 30 | — | — | W |
| G_P | $f = 30\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_{CQ} = 25\text{ mA}$ | 18 | 20 | — | dB |
| IMD | $f = 30\text{ MHz}$ | $V_{CE} = 28\text{ V}$ | $I_{CQ} = 25\text{ mA}$ | — | – 32 | – 28 | dB |
| C_{OB} | $f = 1\text{ MHz}$ | $V_{CB} = 30\text{ V}$ | | — | — | 65 | pF |

Note: $P_{IN} = 0.48W$

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0



| SGS-THOMSON MICROELECTRONICS | | |
|------------------------------|----------------------|----------------------|
| | MINIMUM Inches/mm | MAXIMUM Inches/mm |
| A | .220/5,59 | .230/5,84 |
| B | .785/19,94 | |
| C | .720/18,29 | .730/18,54 |
| D | .970/24,64 | .980/24,89 |
| E | | .385/9,78 |
| F | .004/0,10 | .006/0,15 |
| G | .085/2,16 | .105/2,67 |
| H | .160/4,06 | .180/4,57 |
| I | | .280/7,11 |
| J | .240/6,10 | .255/6,48 |

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