

**GENERAL DESCRIPTION**

The S100-12 is designed for common emitter HF, SSB applications from a 12 volt supply. It may be operated Class A, AB or C. The device has emitter ballasting for ruggedness and reliability.

**S100-12**  
**100 WATTS - 12.5 VOLTS**  
**1.5-30 MHz**

**HF COMMUNICATIONS**

**ABSOLUTE MAXIMUM RATINGS**

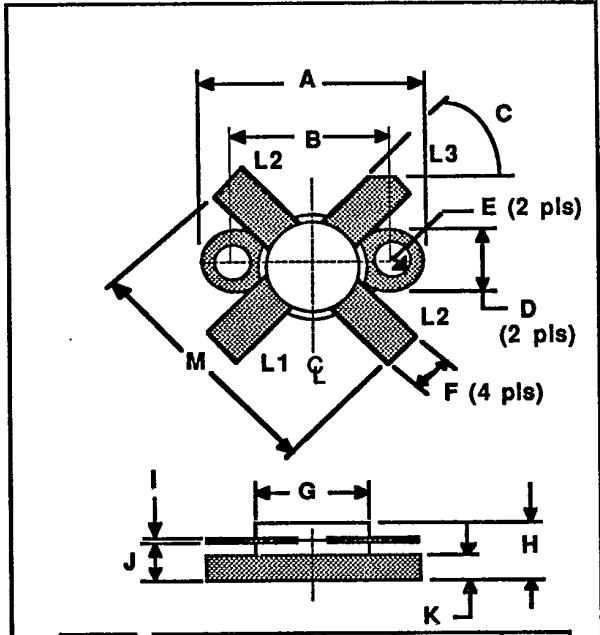
Maximum Power Dissipation @ 25 C Case Temperature 250 W

**Maximum Voltage and Current**

BVces Collector to Emitter Voltage 3.6 V  
 BVebo Emitter to Base Voltage 4.0 V  
 Ic Collector Current 50 A

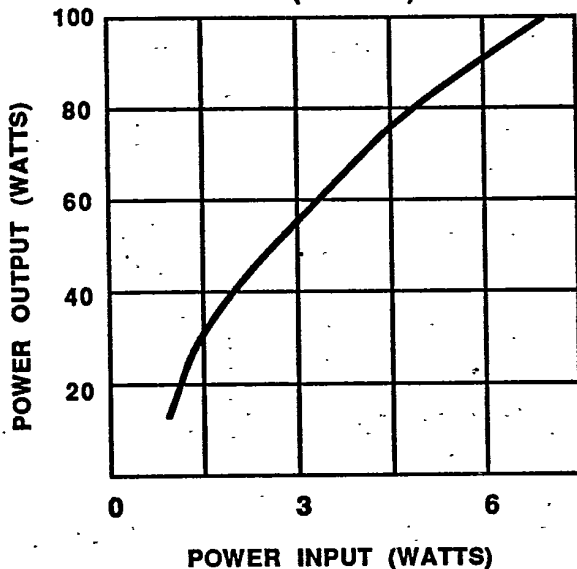
**Maximum Temperatures**

Storage Temperature -65 to +150 °C  
 Operating Temperature +200 °C



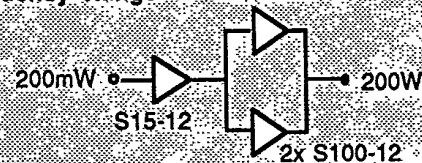
| DIM    | Millimeter | TOL      | Inches   | TOL  |
|--------|------------|----------|----------|------|
| L1 : B | A          | .13      | .975     | .005 |
| L2 : E | B          | .13      | .725     | .005 |
| L3 : C | C          | 5°       | 45°      | 5°   |
|        | D          | .13      | .250     | .005 |
|        | E          | 3.17 DIA | .125 DIA | .005 |
|        | F          | .13      | .225     | .005 |
|        | G          | .13      | .500 DIA | .005 |
|        | H          | REF      | .260     | REF  |
|        | I          | .02      | .005     | .001 |
|        | J          | .13      | .165     | .005 |
|        | K          | .13      | .102     | .005 |
|        | M          | .25      | 1.000    | .010 |

**POWER OUTPUT VS POWER INPUT (TYPICAL)**



**TYPICAL AMPLIFIER LINE UP**

Vcc = 12.5 Volts  
 Frequency Range = 1.5-30 MHz

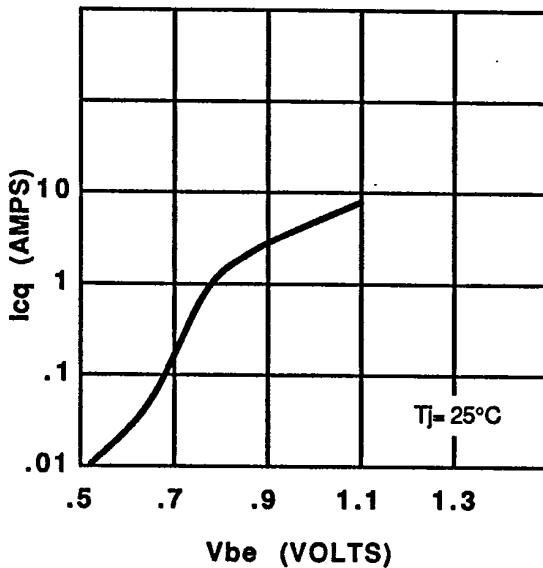


**S100-12-2**

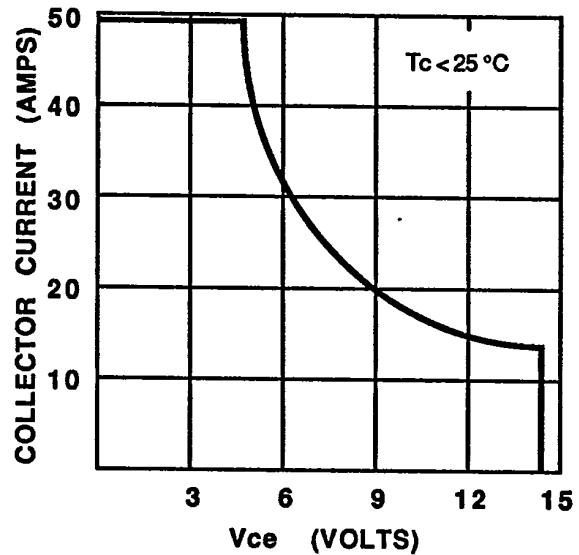
**ELECTRICAL CHARACTERISTICS**

| SYMBOL            | CHARACTERISTICS                  | TEST CONDITIONS                           | MIN. | TYP. | MAX. | UNITS |
|-------------------|----------------------------------|---|------|------|------|-------|
| P <sub>out</sub>  | Power Output                     | f= 1.5 - 30MHz                            | 100  |      |      | Watts |
| P <sub>in</sub>   | Power Input                      | At Rated Power Out, V <sub>c</sub> =12.5V |      |      | 8.5  | Watts |
| P <sub>g</sub>    | Power Gain                       |   | 10.7 |      |      | dB    |
| V <sub>Vebo</sub> | Voltage - Emitter to Base        | I <sub>e</sub> = 10mA                     | 3.5  |      |      | Volts |
| V <sub>Vces</sub> | Voltage - Collector to Base      | I <sub>c</sub> = 100mA                    | 36   |      |      | Volts |
| V <sub>Vceo</sub> | Voltage - Collector to Emitter   | I <sub>c</sub> = 100mA                    | 16   |      |      | Volts |
| IMD               | Intermodulation Distortion Level |   |      |      | -30  | dBc   |
| VSWR              | Load Mismatch Tolerance          |   |      |      | 30:1 |       |
| η <sub>c</sub>    | Collector Efficiency             | At Rated Power Out                        |      | 65   |      | %     |
| I <sub>ces</sub>  | Collector to Base Cutoff Current | V <sub>cb</sub> =15V                      |      |      | 50   | mA    |
| C <sub>cb</sub>   | Capacitance-Collector to Base    | V <sub>cb</sub> =12.5V, f=1MHz            |      | 400  |      | pF    |
| h <sub>FE</sub>   | DC-Current Gain                  | V <sub>ce</sub> =5V, I <sub>c</sub> =1A   | 10   |      |      |       |
| θ <sub>jc</sub>   | Thermal Resistance               |   |      |      | 0.7  | °C/W  |

**I<sub>cq</sub> VS V<sub>be</sub> (TYPICAL)**



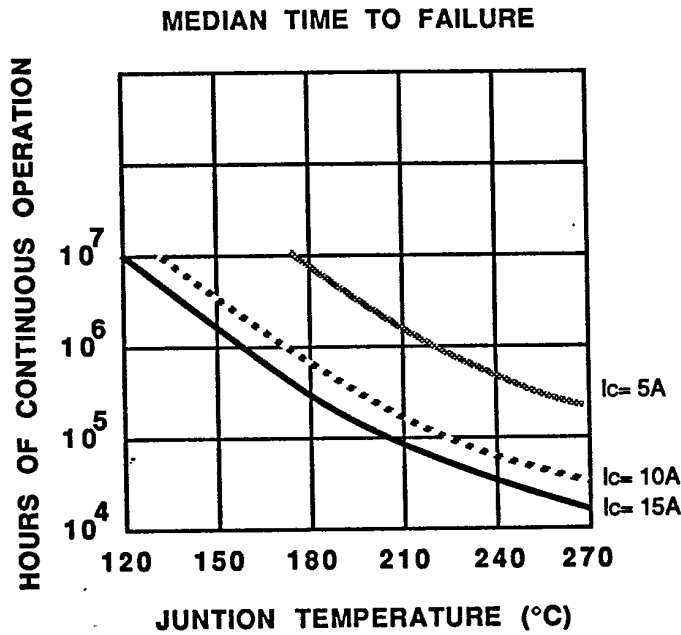
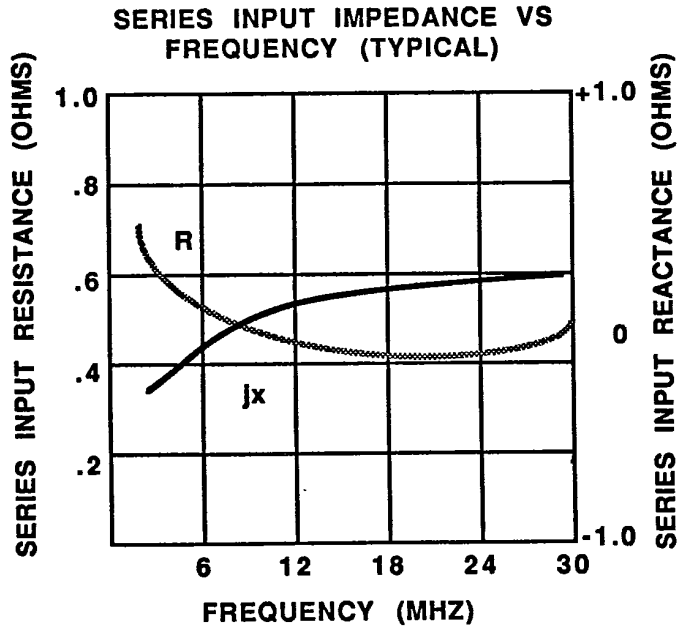
**DC SAFE OPERATING AREA (TYPICAL)**



SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE

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