



# SOLID STATE MICROWAVE

## SD1430

THOMSON-CSF COMPONENTS CORPORATION

Montgomeryville, PA 18936 ■ (215) 362-8500 ■ TWX 510-661-7299

## VHF COMMUNICATIONS TRANSISTOR

### DESCRIPTION

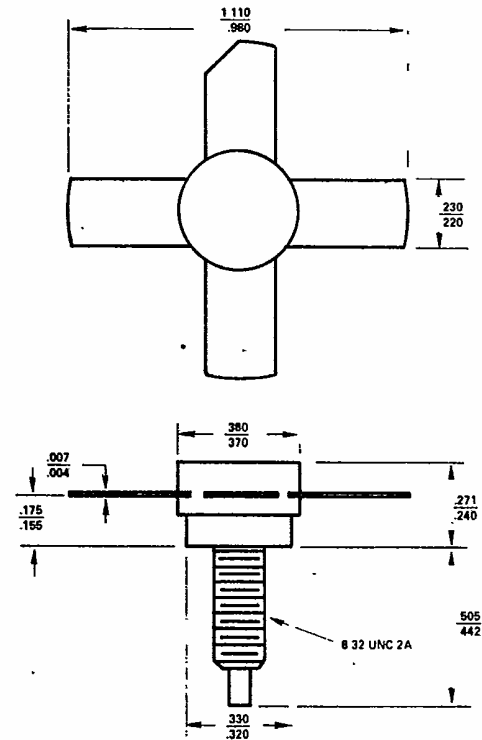
SSM device type SD1430 is a 12.5 volt epitaxial silicon NPN planar transistor designed primarily for VHF communications. This device utilizes improved metalization systems to achieve extreme ruggedness under severe operating conditions.

### FEATURES:

- Designed for VHF military & commercial equipment
- 10 Watts (min.) with greater than 5.2 dB gain @ 6.5 V
- Withstands severe mismatch under operating conditions
- Intended for A.M. avionics applications using the series modulator approach

### ABSOLUTE MAX. RATING

V <sub>CBO</sub>	: Collector-Base Voltage	36.0 V
V <sub>CEO</sub>	: Collector-Emitter Voltage	16.0 V
V <sub>EBO</sub>	: Emitter-Base Voltage	4.0 V
I <sub>C</sub>	: Collector Current (max.)	7.0 A
PT.	: Total Device Dissipation @ 25°C	87.0 W
T <sub>j</sub>	: Junction Temperature	200°C
T <sub>s</sub>	: Storage Temperature	-65°C to +200°C



.380 4LS

### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage*	V <sub>CEO</sub>	I <sub>C</sub> = 50 mA, I <sub>b</sub> = 0,	16.0	-	-	V <sub>dc</sub>
Collector-Emitter Breakdown Voltage*	V <sub>CES</sub>	I <sub>C</sub> = 20 mA, V <sub>be</sub> = 0,	36.0	-	-	V <sub>dc</sub>
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>e</sub> = 5 mA, I <sub>C</sub> = 0,	4.0	-	-	V <sub>dc</sub>
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>cb</sub> = 15 V, I <sub>e</sub> = 0	-	-	5.0	mA
DC Current Gain	h <sub>FE</sub>	V <sub>ce</sub> = 5 V, I <sub>C</sub> = 1.0 A	5	-	-	-

\*Pulsed through 25 MH Inductor

### RF CHARACTERISTICS: SMALL SIGNAL

Output Capacitance - F <sub>o</sub> = 1.0 MHz	C <sub>ob</sub>	V <sub>cb</sub> = 12.5 V, I <sub>C</sub> = 0	-	-	100.0	pF
Input Capacitance - F <sub>i</sub> = 1.0 MHz	C <sub>ib</sub>	V <sub>eb</sub> = 0.5 V, I <sub>C</sub> = 0	-	-	360.0	pF

### RF CHARACTERISTICS: LARGE SIGNAL

Amplifier Power Out	P <sub>O</sub>	136 MHz/6.5 V	10.0	-	-	Watts
Amplifier Power Gain	P <sub>g</sub>		5.2	-	-	dB
Amplifier Power Out	P <sub>O</sub>	136 MHz/12.5 V	40.0	-	-	Watts
Amplifier Power Gain	P <sub>g</sub>		7.5	-	-	dB