

**SSM****SOLID STATE MICROWAVE****SD1430****THOMSON-CSF COMPONENTS CORPORATION**

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

**VHF COMMUNICATIONS TRANSISTOR****DESCRIPTION**

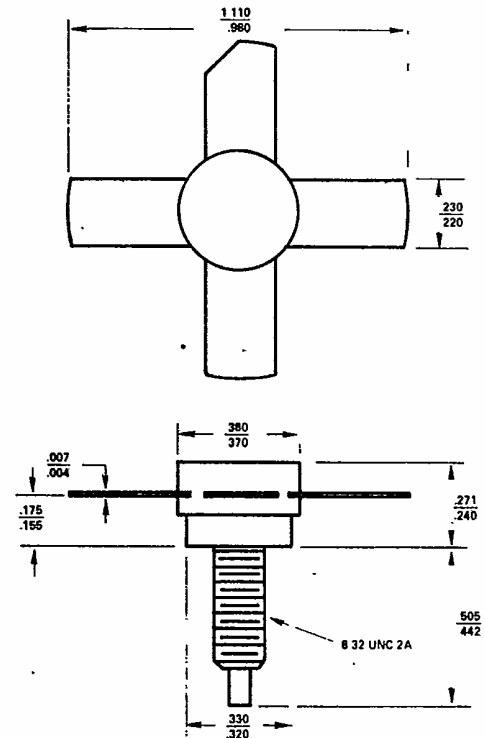
SSM device type SD1430 is a 12.5 volt epitaxial silicon NPN planar transistor designed primarily for VHF communications. This device utilizes improved metalization systems to achieve extreme ruggedness under severe operating conditions.

**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**

$V_{CBO}$	: Collector-Base Voltage	36.0 V
$V_{CEO}$	: Collector-Emitter Voltage	16.0 V
$V_{EBO}$	: Emitter-Base Voltage	4.0 V
$I_C$	: Collector Current (max.)	7.0 A
PT.	: Total Device Dissipation @ 25°C	87.0 W
$T_j$	: Junction Temperature	200°C
$T_s$	: Storage Temperature	-65°C to +200°C

**.380 4LS****ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage*	$BV_{CEO}$	$I_C = 50 \text{ mA}, I_b = 0,$	16.0	—	—	$V_{dc}$
Collector-Emitter Breakdown Voltage*	$BV_{CES}$	$I_C = 20 \text{ mA}, V_{be} = 0,$	36.0	—	—	$V_{dc}$
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_e = 5 \text{ mA}, I_C = 0,$	4.0	—	—	$V_{dc}$
Collector Cut-Off Current	$I_{CBO}$	$V_{cb} = 15 \text{ V}, I_e = 0$	—	—	5.0	mA
DC Current Gain	$h_{FE}$	$V_{ce} = 5 \text{ V}, I_C = 1.0 \text{ A}$	5	—	—	—

\*Pulsed through 25 MH Inductor

**RF CHARACTERISTICS: SMALL SIGNAL**

Output Capacitance — $F_o = 1.0 \text{ MHz}$	$C_{ob}$	$V_{cb} = 12.5 \text{ V}, I_C = 0$	—	—	100.0	pF
Input Capacitance — $F_o = 1.0 \text{ MHz}$	$C_{ib}$	$V_{eb} = 0.5 \text{ V}, I_C = 0$	—	—	360.0	pF

**RF CHARACTERISTICS: LARGE SIGNAL**

Amplifier Power Out	$P_o$	136 MHz/6.5 V	10.0	—	—	Watts
Amplifier Power Gain	$P_g$		5.2	—	—	dB
Amplifier Power Out	$P_o$	136 MHz/12.5 V	40.0	—	—	Watts
Amplifier Power Gain	$P_g$		7.5	—	—	dB

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Datasheets for electronic components.