

SSM**SOLID STATE MICROWAVE****SD1220-1****THOMSON-CSF COMPONENTS CORPORATION**

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VHF COMMUNICATIONS TRANSISTOR**DESCRIPTION**

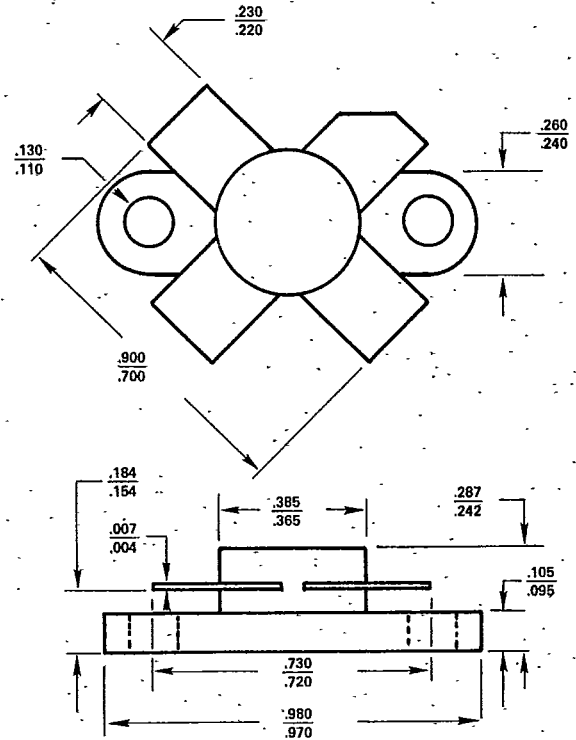
The SD1220-1 is an epitaxial silicon NPN-planar transistor designed primarily for 12.5 volt AM class C rf amplifiers functional in the aviation band 118-136 MHz and for 28V FM class C rf amplifiers utilized in ground station transmitters. This device utilizes emitter ballasting resistors and improved metalization systems to achieve optimum load mismatch capability.

FEATURES

- Designed for VHF 12.5 V AM and 28 V FM transmitters
- 7.0 Watts (min.) with greater than 8.4 dB gain at 28 volts
- Withstands severe mismatch under operating conditions
- Low inductance stripline package
- All leads electrically isolated from flange

ABSOLUTE MAX. RATING

V_{CBO}	: Collector-Base Voltage	65.0 V
V_{CEO}	: Collector-Emitter Voltage	35.0 V
V_{EBO}	: Emitter-Base Voltage	4.0 V
I_C	: Collector Current (max.)	1.0 A
PT.	: Total Device Dissipation @ +25°C	15.0 W
θ_{jc}	: Thermal Resistance	11.7° C/W
T_j	: Junction Temperature (operating)	+200°C
T_s	: Storage Temperature	-65°C to +200°C

**.380 4LFL****ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage*	BV_{CEO}	$I_C = 200 \text{ mA}, I_b = 0$	35.0	—	—	V_{dc}
Collector-Emitter Breakdown Voltage*	BV_{CES}	$I_C = 200 \text{ mA}, V_{be} = 0$	65.0	—	—	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}	$V_{cb} = 30 \text{ V}, I_e = 0$	—	—	1.0	mA
DC Current Gain	h_{FE}	$V_{ce} = 5 \text{ V}, I_C = 100 \text{ mA}$	5.0	—	—	—
Collector Cut Off Current	I_{CES}	$V_{ce} = 30 \text{ V}$	—	—	10.0	mA

*Pulsed through 25 MH Inductor

RF CHARACTERISTICS: LARGE SIGNAL

Amplifier Power Out	P_o	$F_o = 175 \text{ MHz}, V_{ce} = 28 \text{ V}$	7.0	—	—	Watts
Amplifier Power Gain	P_g	$P_o = 7.0 \text{ W}, I_C = 0.42 \text{ A}$	8.4	—	—	dB
Collector Efficiency	η	$P_o = 7.0 \text{ W}, V_{ce} = 28 \text{ V}$	60.0	—	—	%
Impedances—Input	Z_{in}		—	—	—	ohms
Impedances—Output	Z_{out}		—	—	—	ohms

RF CHARACTERISTICS: LARGE SIGNAL

Amplifier Power Out	P_o	$F_o = 175 \text{ MHz}, V_{ce} = 13.6 \text{ V}$	—	3.0	—	Watts
Amplifier Power Gain	P_g	$P_o = 3.0 \text{ W}, I_C = 0.44 \text{ A}$	8.2	—	—	dB
Collector Efficiency	η_c	$P_o = 3.0 \text{ W}, V_{ce} = 13.6 \text{ V}$	50.0	—	—	%

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