

SSM**SOLID STATE MICROWAVE****SD1219**

THOMSON-CSF COMPONENTS CORPORATION

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VHF COMMUNICATIONS TRANSISTOR**DESCRIPTION**

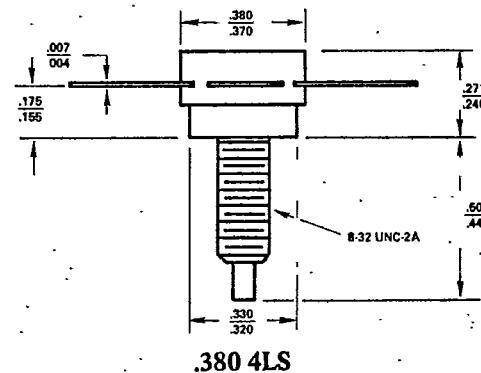
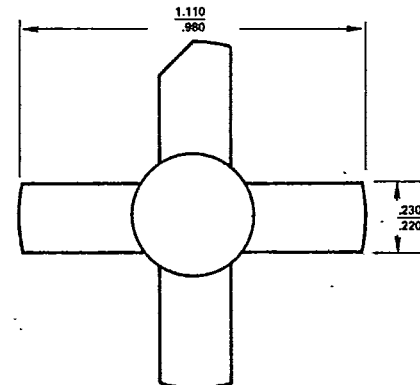
SSM device type SD1219 is an epitaxial silicon NPN-planar transistor designed primarily for 12.5 volt AM class C rf amplifiers functional in the aviation band 118-136 MHz and for 28V FM class C rf amplifiers utilized in ground station transmitters. This device utilizes emitter ballasting resistors and improved metalization systems to achieve optimum load mismatch capability.

FEATURES

- Designed for VHF 12.5 V AM and 28 V FM transmitters
- 60 Watts (min.) with greater than 6 dB gain at 28 volts
- Withstands severe mismatch under operating conditions
- Low inductance stripline package
- All leads electrically isolated from stud

ABSOLUTE MAX. RATING

V _{CB0}	: 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.)	6.5 A
PT.	: Total Device Dissipation at +25°C	75.0 W
ϕ _{jc}	: Thermal Resistance to Stud	2.3° C/W
T _j	: Junction Temperature (Operating)	+200°C
T _s	: Storage Temperature	-65°C to +200°C

**ELECTRICAL CHARACTERISTICS**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage*	BV _{CEO}	I _c = 200 mA, I _b = 0	35.0	—	—	V _{dc}
Collector-Emitter Breakdown Voltage*	BV _{CES}	I _c = 200 mA, V _{be} = 0	65.0	—	—	V _{dc}
Emitter-Base Breakdown Voltage	BV _{EBO}	I _e = 10.0 mA, I _c = 0	4.0	—	—	V _{dc}
Collector Cut-Off Current	I _{CB0}	V _{cb} = 30 V, I _e = 0	—	—	2.0	mA
DC Current Gain	h _{FE}	V _{ce} = 5 V, I _c = 0.5 A	5.0	—	—	—
Collector Cut-Off Current	I _{CES}	V _{ce} = 30 V, V _{be} = 0, T _A = +125°C	—	—	10.0	mA

*Pulsed through 25 MH Inductor

RF CHARACTERISTICS: SMALL SIGNAL

Gain Bandwidth Product (100 MHz)	f(t)	V _{ce} = 10 V, I _c = 0.5 A	200.0	—	—	MHz
Output Capacitance	C _{ob}	V _{cb} = 30 V, I _e = 0, F _o = 1.0 MHz	—	—	80.0	pF
Input Capacitance	C _{ib}	V _{eb} = 0.5 V, I _c = 0, F _o = 1.0 MHz	—	450.0	—	pF

RF CHARACTERISTICS: LARGE SIGNAL

150 MHz Operation:

13.5 V

28 V

Amplifier Power Out	P _o	17.5	60.0	—	Watts
Amplifier Power Gain	P _g	5.0	7.0	—	dB
Collector Efficiency	η	—	60	—	%
Impedance—Input	Z _{in}	—	1.0 + J 2 (typ)	—	ohms
Impedance—Output	Z _{out}	—	4.0 - J 3.9 (typ)	—	ohms

@ 60 Watts



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