

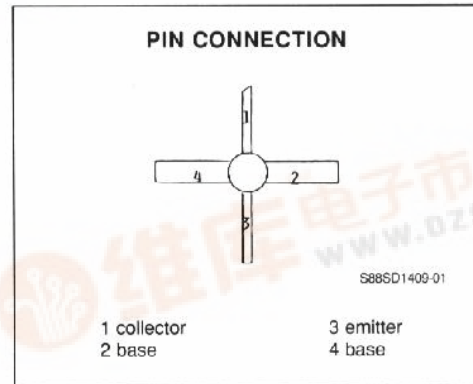
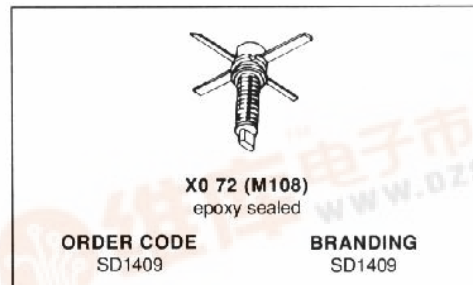


140 Commerce Drive
Montgomeryville, PA 18936-1013
Tel: (215) 631-9840

SD1409

RF & MICROWAVE TRANSISTORS
806-866MHz CLASS C, MOBILE APPLICATIONS

- CLASS C TRANSISTOR 870MHz
- FREQUENCY 870MHz
- VOLTAGE 12.5V
- POWER OUT 2.0W
- POWER GAIN 8.0dB
- COMMON BASE



DESCRIPTION

The SD1409 transistor is a common base silicon epitaxial planar transistor, that was specifically designed for amplifier applications in the 800-870MHz Mobile Frequency Band. This device offers optimum gain over the entire frequency band, and achieves infinite VSWR at rated operating condi-

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector - Base Voltage	36.0	V
V_{CEO}	Collector - Emitter Voltage	16.0	V
V_{CES}	Collector - Emitter Voltage	36.0	V
V_{EBO}	Emitter - Base Voltage	4.0	V
I_C	Collector Current	0.6	A
P_{tot}	Total Power Dissipation	8.75	W
T_{sig}	Storage Temperature	- 65 to + 150	$^{\circ}C$
T_j	Junction Temperature	+ 200	$^{\circ}C$

THERMAL DATA

$R_{th(j-c)}$	Junction-case Thermal Resistance	20.0	$^{\circ}C/W$
---------------	----------------------------------	------	---------------

February 1989

1/4

375



SD1409

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$)

STATIC

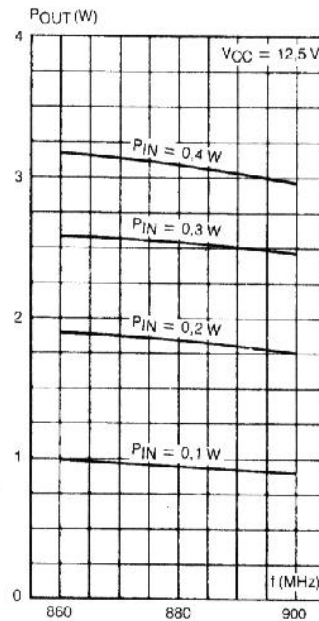
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 10mA$	$V_{BE} = 0$	36.0			V
BV_{CED}	$I_E = 10mA$	$I_B = 0$	16.0			V
BV_{EBO}	$I_E = 5mA$	$I_C = 0$	4.0			V
I_{CBO}	$V_{CB} = ?V$	$I_E = 0$				mA
h_{FE}	$V_{CE} = 5.0V$	$I_C = 100mA$	10.0			

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_O	$f = 870MHz$	$V_{CE} = 12.5V$	2.0				W
G_P	$f = 870MHz$	$V_{CE} = 12.5V$	8.0				dB
C_{OB}	$f = 1MHz$	$V_{CB} = 12.5V$		7.5			pF

APPLICATION INFORMATION (typical curves)

Figure 1 : Output Power versus Frequency (typical values).



S88SD1409-02

IMPEDANCE DATA (typical)

Figure 2 : Source Impedance versus Frequency.

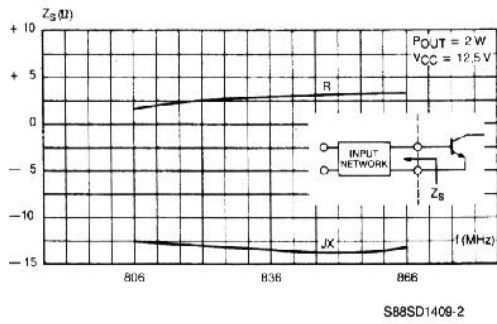
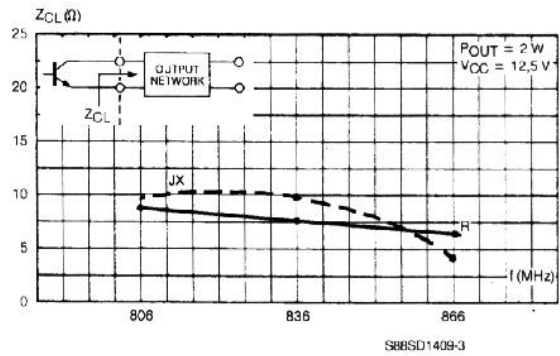


Figure 3 : Collector Load Impedance versus Frequency.



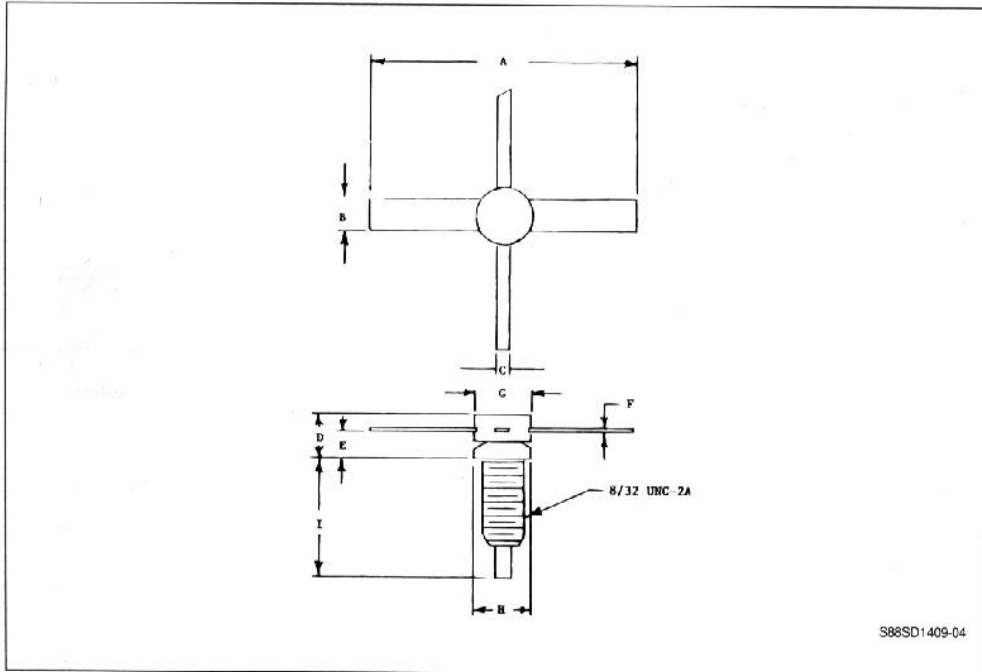
Frequency	Z_s (Ω)	Z_{CL} (Ω)
806MHz	$2.8 - j13$	$8.8 + j9$
836MHz	$3.0 - j13$	$8.0 + j9.9$
866MHz	$3.0 - j14$	$6.6 + j4.3$

$V_{CC} = 12.5V$
Power out = 2.0W

SD1409

PACKAGE MECHANICAL DATA

X0 72



S88SD1409-04

	Minimum Inches	Maximum Inches
A	.890	
B	.120	.130
C	.027	.033
D		.195
E	.098	.112
F	.003	.007
G	.201	.207
H	.201	.207
I	.425	.465