RF Products
Microsemi
Progress Powered by Technology

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SD1409

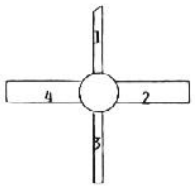
RF & MICROWAVE TRANSISTORS
806-866MHz CLASS C, MOBILE APPLICATIONS

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

X0 72 (M108)
epoxy sealed

ORDER CODE	BRANDING
SD1409	SD1409

PIN CONNECTION



S88SD1409-01

1 collector
2 base
3 emitter
4 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°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_{stg}	Storage Temperature	– 65 to + 150	°C
T_j	Junction Temperature	+ 200	°C

THERMAL DATA

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

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C)

STATIC

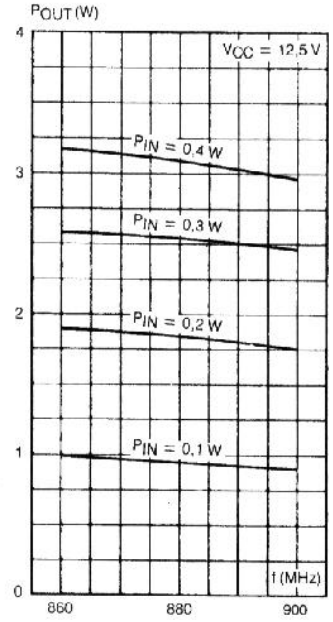
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 10mA	V_{BE} = 0	36.0			V
BV_{CEO}	I_E = 10mA	I_B = 0	16.0			V
BV_{EBO}	I_E = 5mA	I_C = 0	4.0			V
I_{CBO}	V_{CB} = ?V	I_E = 0				mA
h_{FE}	V_{CE} = 5.0V	I_C = 100mA	10.0			

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	I_E = 0		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.

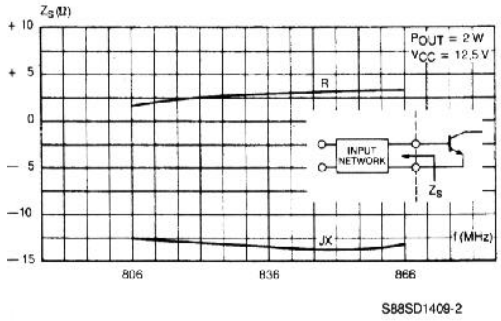
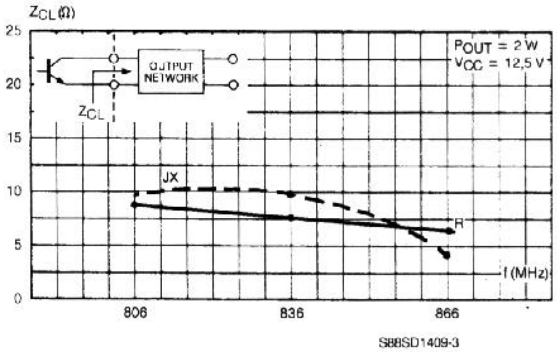


Figure 3 : Collector Load Impedance versus Frequency.

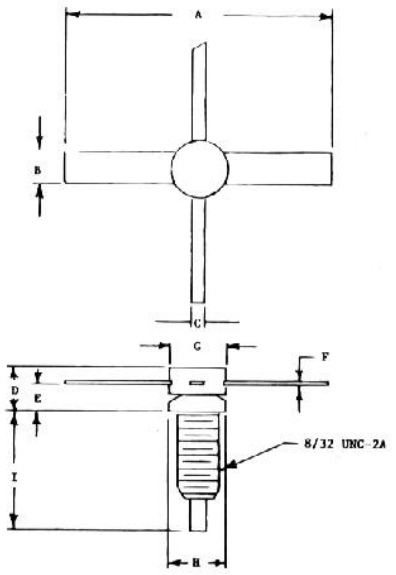


Frequency	Z_S (Ω)	Z_{CL} (Ω)
806MHz	2.8 – j13	8.8 + j9
836MHz	3.0 – j13	8.0 + j9.9
866MHz	3.0 – j14	6.6 + j4.3

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

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