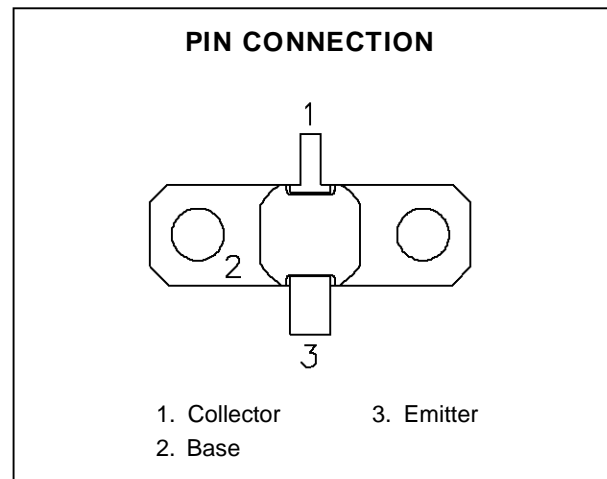
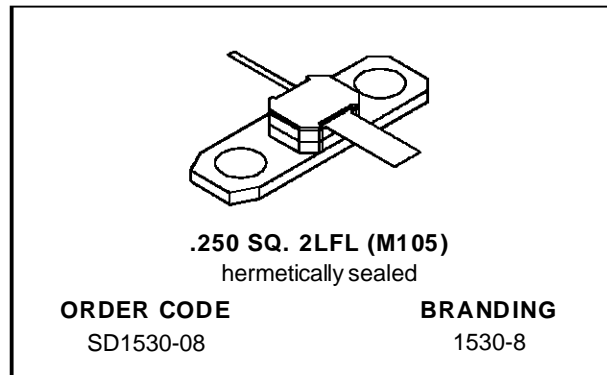


## RF & MICROWAVE TRANSISTORS AVIONICS APPLICATIONS

- DESIGNED FOR HIGH POWER PULSED IFF, DME, TACAN APPLICATIONS
- 40 WATTS (typ.) IFF 1030 - 1090 MHz
- 35 WATTS (min.) DME 1025 - 1150 MHz
- 25 WATTS (typ.) TACAN 960 - 1215 MHz
- 9.0 dB MIN. GAIN
- REFRACTORY GOLD METALLIZATION
- EMITTER BALLASTING AND LOW THERMAL RESISTANCE FOR RELIABILITY AND RUGGEDNESS
- INFINITE LOAD VSWR CAPABILITY AT SPECIFIED OPERATING CONDITIONS
- INPUT MATCHED, COMMON BASE CONFIGURATION



### DESCRIPTION

The SD1530-08 is a gold metallized silicon, NPN power transistor designed for applications requiring high peak power and low duty cycles such as IFF, DME and TACAN. The SD1530-08 is packaged in the .250" input matched hermetic stripline flange package resulting in improved broadband performance and a low thermal resistance.

### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	65	V
V <sub>CEO</sub>	Collector-Emitter Voltage	65	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
I <sub>c</sub>	Device Current	2.6	A
P <sub>DISS</sub>	Power Dissipation	87.5	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	2.0	°C/W
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# SD1530-08

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

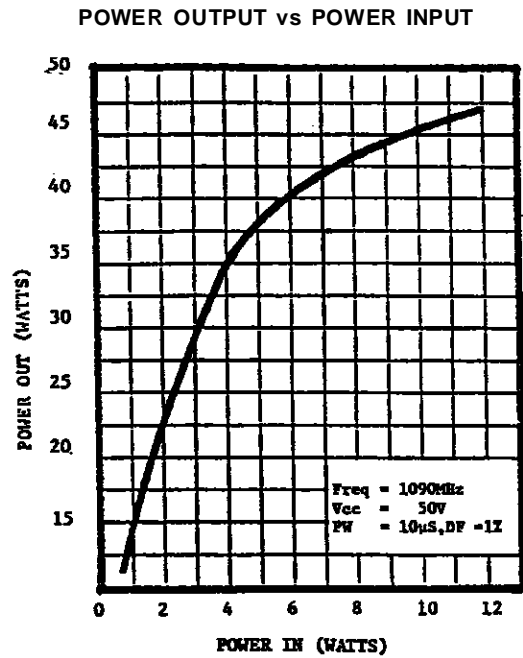
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CBO</sub>	I <sub>C</sub> = 10 mA	I <sub>E</sub> = 0 mA	65	—	—	V
BV <sub>CES</sub>	I <sub>C</sub> = 25 mA	V <sub>BE</sub> = 0 V	65	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1 mA	I <sub>C</sub> = 0 mA	3.5	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 50 V	I <sub>E</sub> = 0 mA	—	—	5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 500 mA	10	—	200	

### DYNAMIC

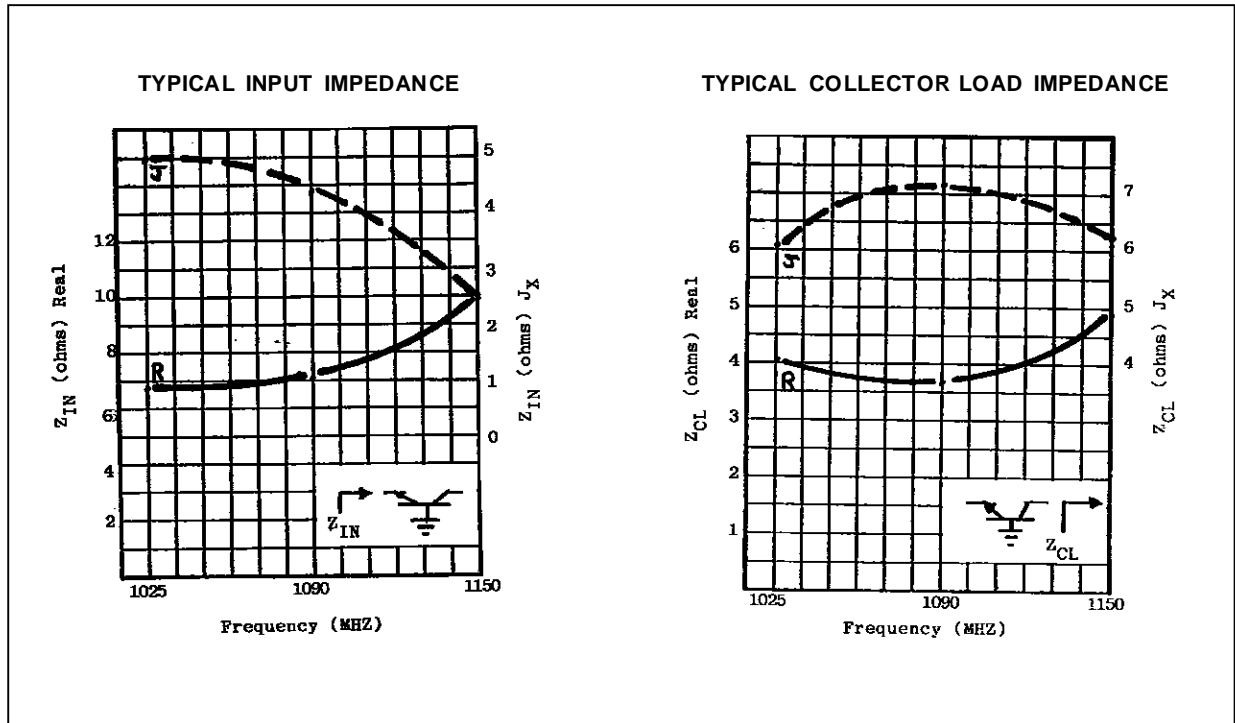
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 1025 – 1150 MHz	P <sub>IN</sub> = 5.0 W	V <sub>CE</sub> = 50 V	35	—	—	W
P <sub>G</sub>	f = 1025 – 1150 MHz	P <sub>IN</sub> = 5.0 W	V <sub>CE</sub> = 50 V	8.5	—	—	dB
η <sub>C</sub>	f = 1025 – 1150 MHz	P <sub>IN</sub> = 5.0 W	V <sub>CE</sub> = 50 V	30	—	—	%

Note: Pulse Width = 10μSec, Duty Cycle = 1%  
 This device is suitable for use under other pulse width/duty cycle conditions.  
 Please contact the factory for specific applications assistance.

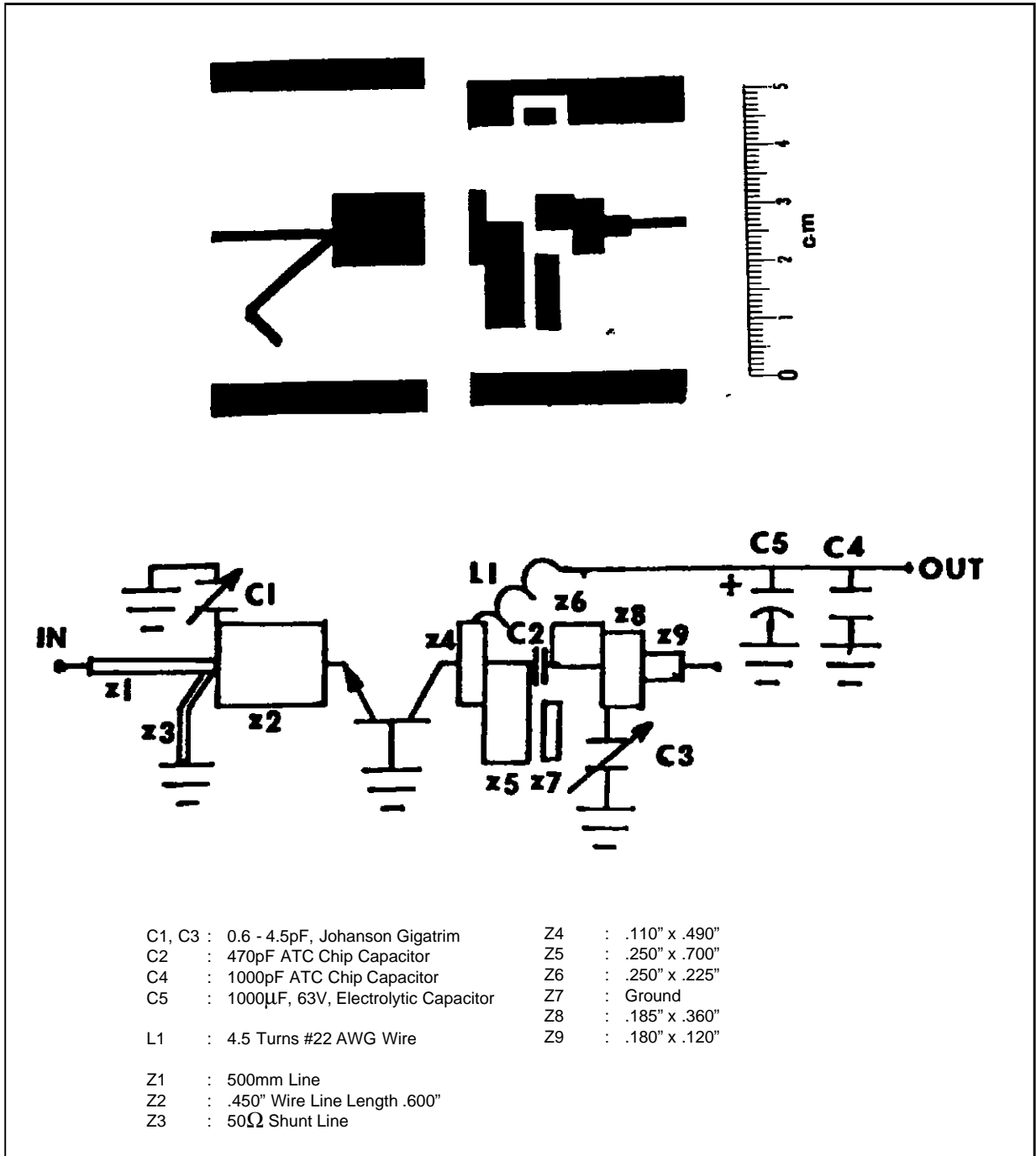
## TYPICAL PERFORMANCE



## IMPEDANCE DATA

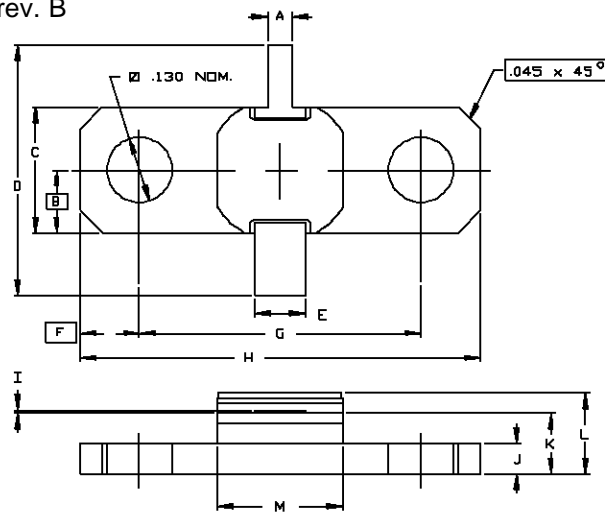


TEST CIRCUIT AND PC BOARD LAYOUT



## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0105 rev. B



SGS-THOMSON MICROELECTRONIC		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.045/1,14	.055/1,40	K	.112/2,84	.132/3,35
B	.125/3,18		L		.175/4,45
C	.245/6,22	.255/6,48	M	.245/6,22	.257/6,53
D	1.235/31,37				
E	.095/2,41	.105/2,67			
F	.120/3,05				
G	.557/14,15	.567/14,40			
H	.795/20,19	.805/20,45			
I	.002/0,05	.006/0,15			
J	.057/1,45	.067/1,70			

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