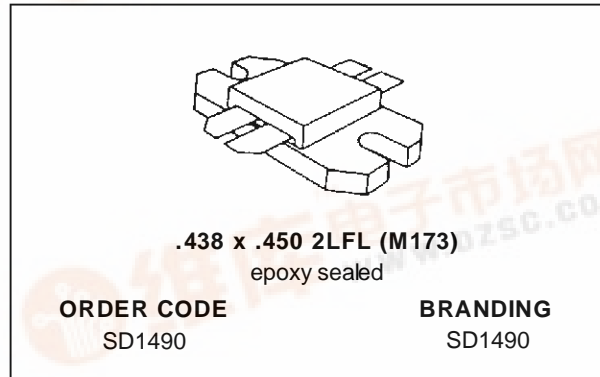




**SD1490**

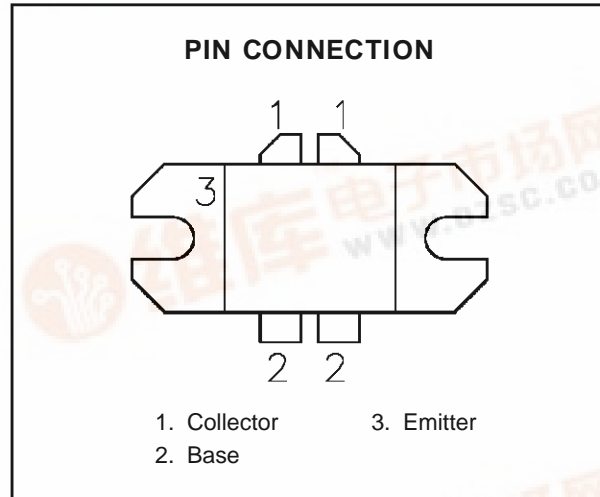
**RF & MICROWAVE TRANSISTORS  
TV/LINEAR APPLICATIONS**

- 470 - 860 MHz
- 28 VOLTS
- CLASS A PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- GOLD METALLIZATION
- DIFFUSED EMITTER BALLAST RESISTORS
- COMMON EMITTER CONFIGURATION
- INTERNAL INPUT MATCHING
- P<sub>OUT</sub> = 25 W MIN. WITH 9.0 dB GAIN



**DESCRIPTION**

The SD1490 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class A operation in UHF and Band IV, V television transmitters and transposers.



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

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	45	V
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.0	V
I <sub>c</sub>	Device Current	8	A
P <sub>DISS</sub>	Power Dissipation	135	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 50 to +150	°C

**THERMAL DATA**

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	1.3	°C/W
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## SD1490

### ELECTRICAL SPECIFICATIONS ( $T_{\text{case}} = 25^{\circ}\text{C}$ )

#### STATIC

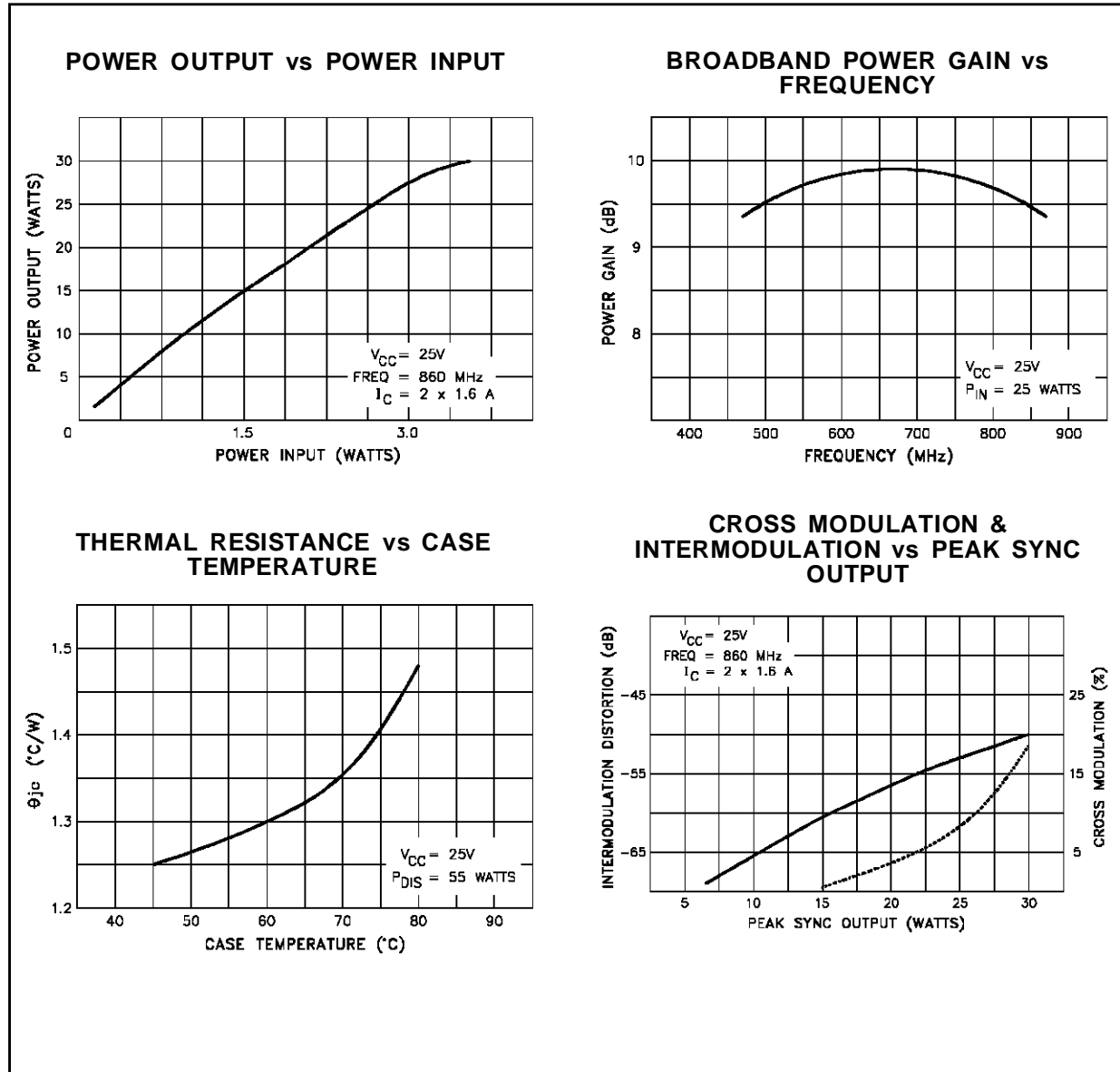
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 50\text{mA}$	$I_E = 0\text{mA}$	45	—	—	V	
$BV_{CEO}$	$I_C = 200\text{mA}$	$I_B = 0\text{mA}$	30	—	—	V	
$BV_{EBO}$	$I_E = 10\text{mA}$	$I_C = 0\text{mA}$	3.0	—	—	V	
$I_{CEO}$	$V_{CE} = 25\text{V}$	$I_E = 0\text{mA}$	—	—	5	mA	
$h_{FE}$	$V_{CE} = 5\text{V}$	$I_C = 3\text{A}$	10	—	80	—	

#### DYNAMIC

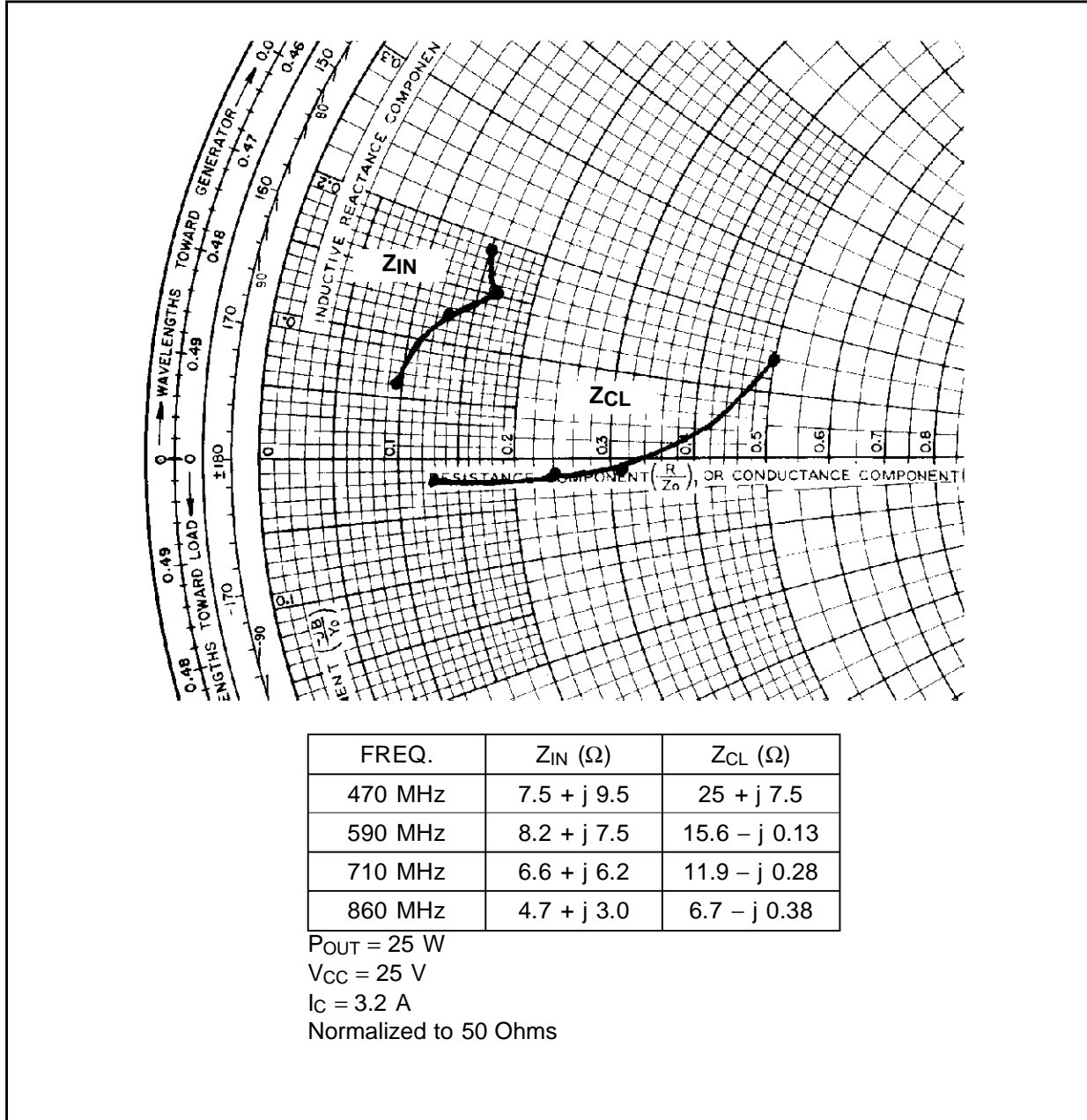
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 860\text{ MHz}$	$V_{CE} = 25\text{ V}$	$I_C = 3.2\text{ A}$	25	—	—	W
$G_P$	$f = 860\text{ MHz}$	$V_{CE} = 25\text{ V}$	$I_C = 3.2\text{ A}$	8.0	—	—	dB
$CMOD$	$f = 860\text{ MHz}$	$V_{CE} = 25\text{ V}$	$P_{REF} = 25\text{ W}$	—	—	20	%
$IMD_3^*$	$f = 860\text{ MHz}$	$V_{CE} = 25\text{ V}$	$P_{REF} = 25\text{ W}$	—	—	-45	dB
$C_{OB}$	$f = 1\text{ MHz}$	$V_{CB} = 28\text{ V}$		—	70	—	pF

Note: \* 3 Tone Testing ( - 8, - 10, - 16 dB Relative to  $P_{REF}$ )

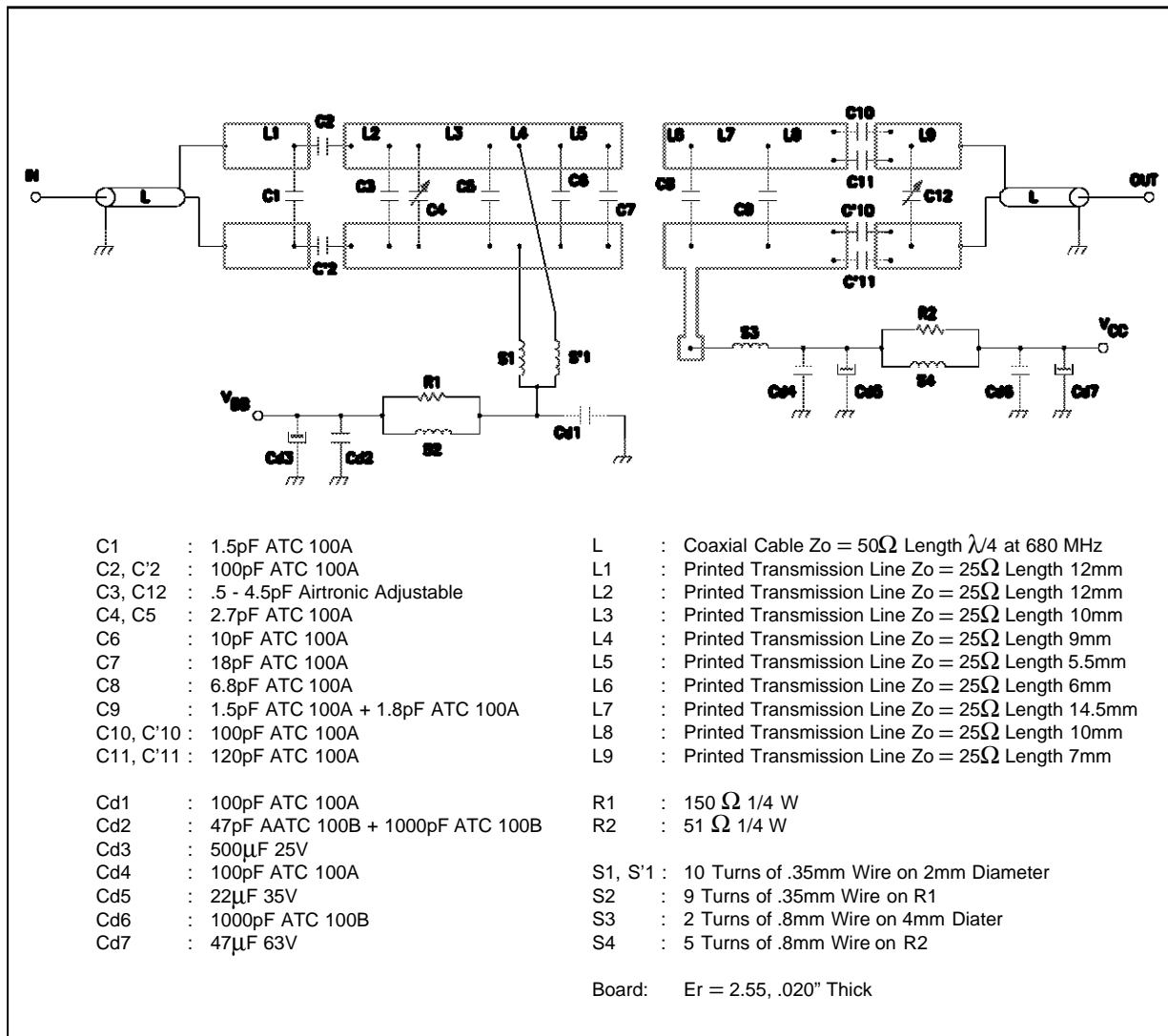
## TYPICAL PERFORMANCE



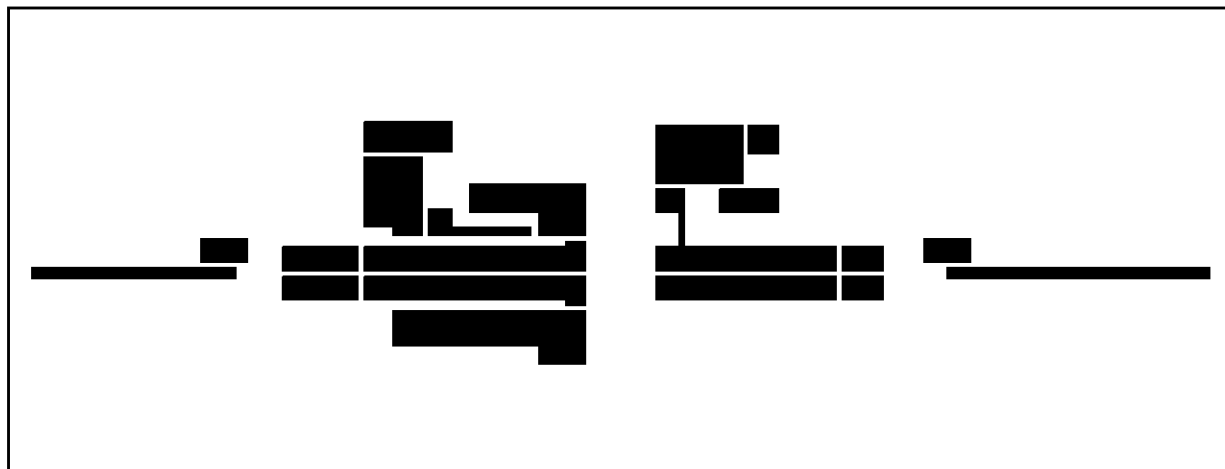
IMPEDANCE DATA



## TEST CIRCUIT



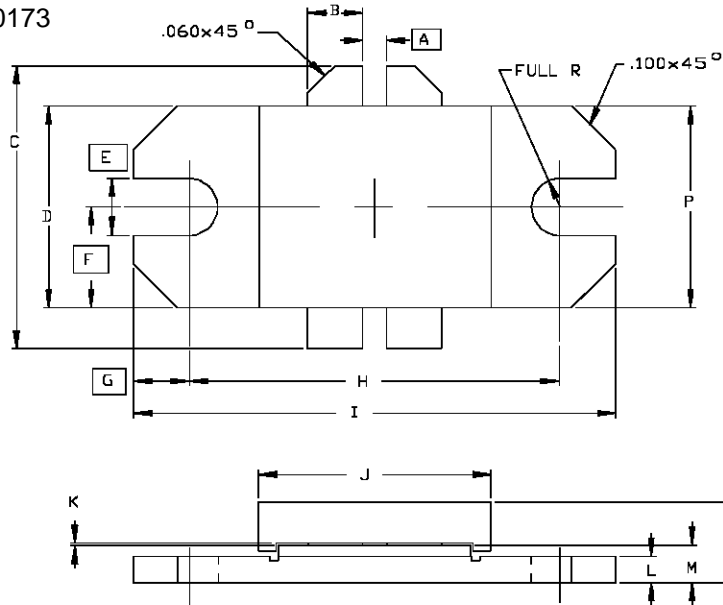
## TEST CIRCUIT LAYOUT



# SD1490

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0173



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.055/1,40		K	.002/0,05	.006/0,15
B	.120/3,05	.130/3,30	L	.055/1,40	.065/1,65
C	.785/19,94		M	.080/2,03	.095/2,41
D	.455/11,56	.465/11,81	N	.195/4,95	
E	.125/3,18		P	.455/11,56	.465/11,81
F	.230/5,84				
G	.128/3,25				
H	.838/21,28	.850/21,59			
I	1.095/27,81	1.105/28,07			
J	.525/13,34	.535/13,59			

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