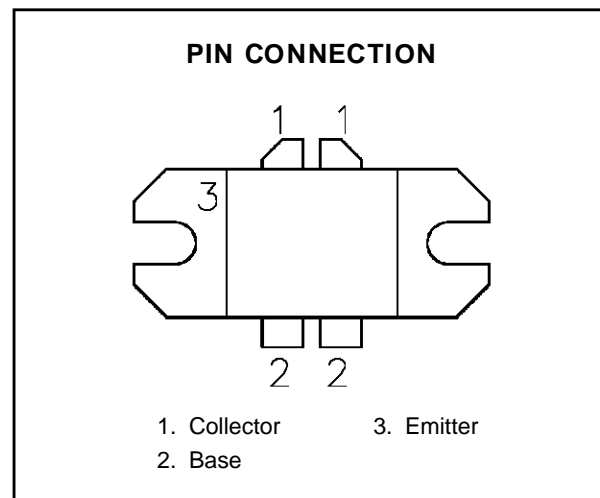
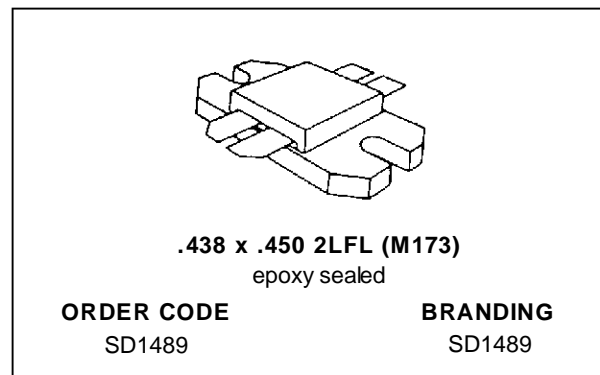


**RF & MICROWAVE TRANSISTORS  
TV/LINEAR APPLICATIONS**

- 470 - 860 MHz
- 28 VOLTS
- CLASS AB PUSH PULL
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- HIGH SATURATED POWER CAPABILITY
- GOLD METALLIZATION
- DIFFUSED EMITTER BALLAST RESISTORS
- COMMON EMITTER CONFIGURATION
- INTERNAL INPUT MATCHING
- $P_{OUT} = 50 \text{ W MIN. WITH } 6.5 \text{ dB GAIN}$


**DESCRIPTION**

The SD1489 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in UHF and Band IV, V television transmitters and transposers.

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	3.0	V
$I_C$	Device Current	8	A
$P_{DISS}$	Power Dissipation	175	W
$T_J$	Junction Temperature	+200	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.0	$^{\circ}\text{C/W}$
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**SD1489****ELECTRICAL SPECIFICATIONS** ( $T_{case} = 25^{\circ}C$ )

## STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CBO}$	$I_C = 50mA$	$I_E = 0mA$	45	—	—	V
$BV_{CER}$	$I_C = 20mA$	$R_{BE} = 10\Omega$	40	—	—	V
$BV_{CEO}$	$I_C = 200mA$	$I_B = 0mA$	30	—	—	V
$BV_{EBO}$	$I_E = 10mA$	$I_C = 0mA$	3.0	—	—	V
$I_{CEO}$	$V_{CE} = 28V$	$I_E = 0mA$	—	—	5	mA
$h_{FE}$	$V_{CE} = 5V$	$I_C = 3A$	10	—	80	—

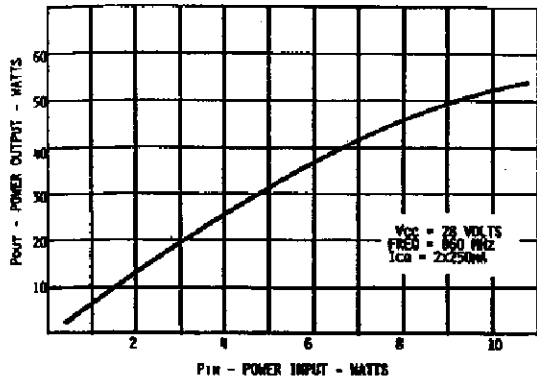
## DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 860\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 2 \times 250\text{ mA}$	50	—	—	W
$G_P$	$f = 860\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 2 \times 250\text{ mA}$	6.8	—	—	dB
$\eta_C$	$f = 860\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 2 \times 250\text{ mA}$	—	45	—	%
$C_{OB}$	$f = 1\text{ MHz}$	$V_{CB} = 28\text{ V}$		—	70	—	pF

Note: Pulse Width = 10 $\mu$ Sec, Duty Cycle = 1%

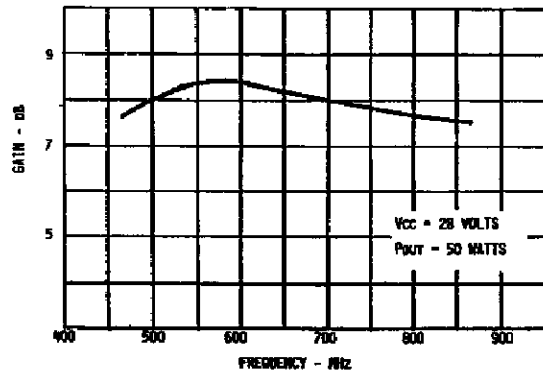
TYPICAL PERFORMANCE

OUTPUT POWER vs POWER INPUT



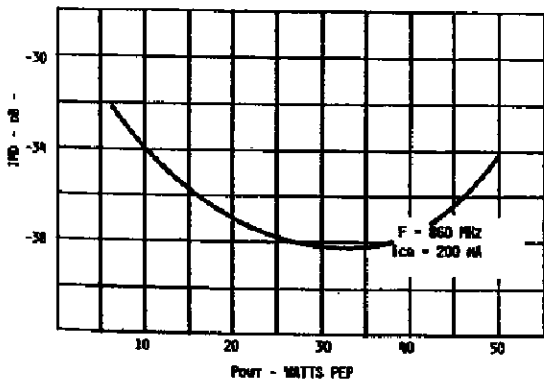
S88-SD1489-02

BROADBAND POWER GAIN vs FREQUENCY



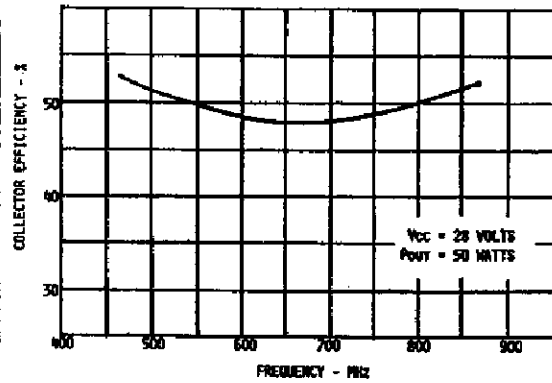
S88-SD1489-03

INTERMODULATION DISTORTION vs OUTPUT POWER



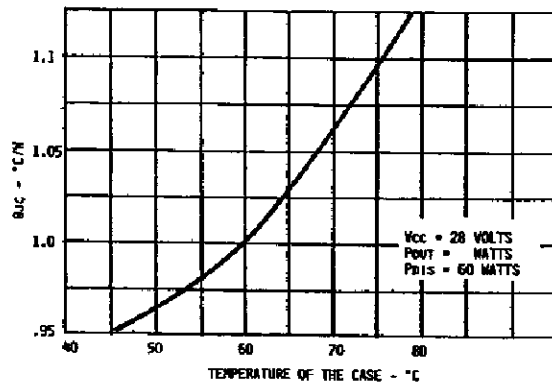
S88-SD1489-04

COLLECTOR EFFICIENCY vs FREQUENCY



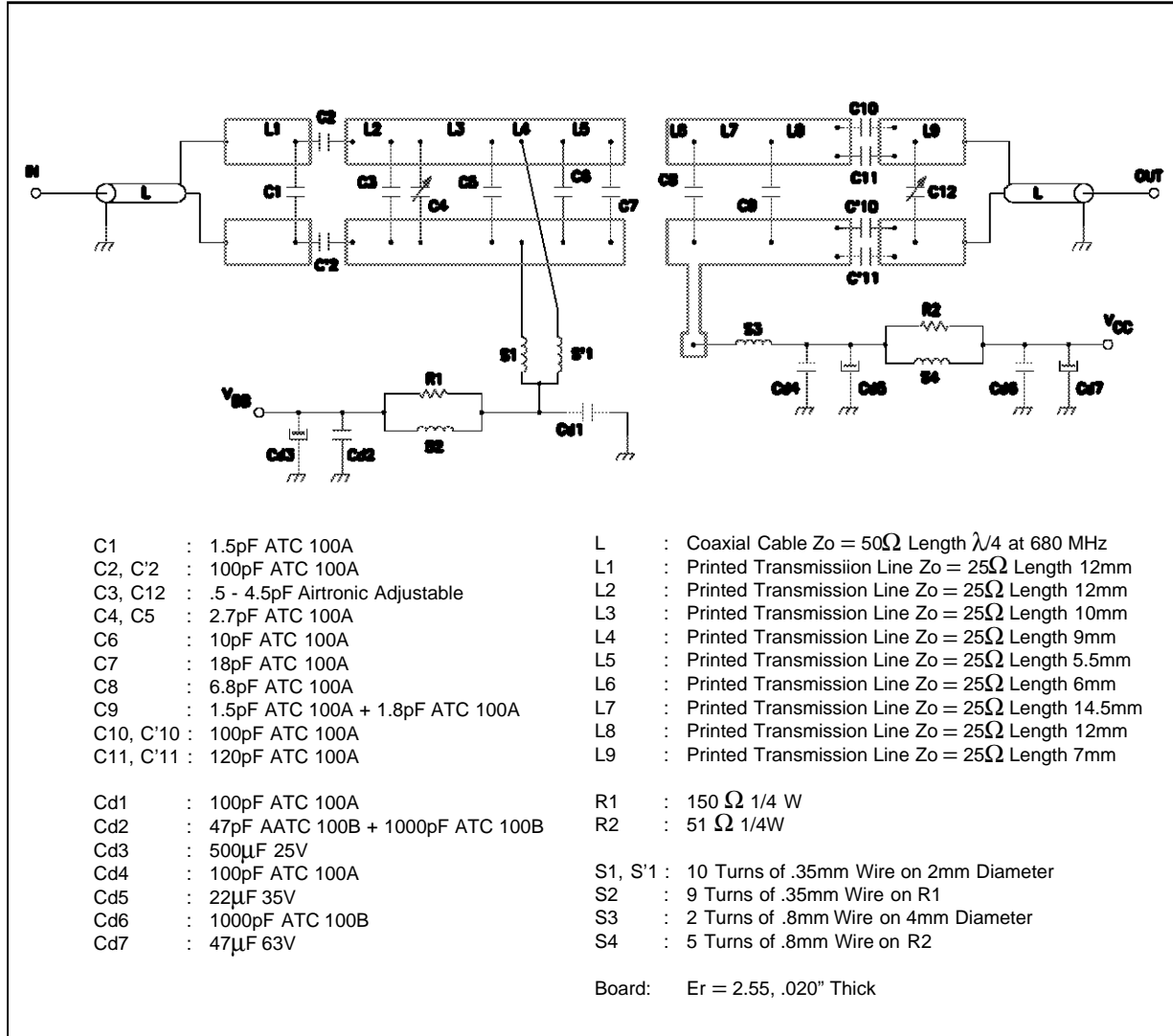
S88-SD1489-05

THERMAL RESISTANCE vs CASE TEMPERATURE

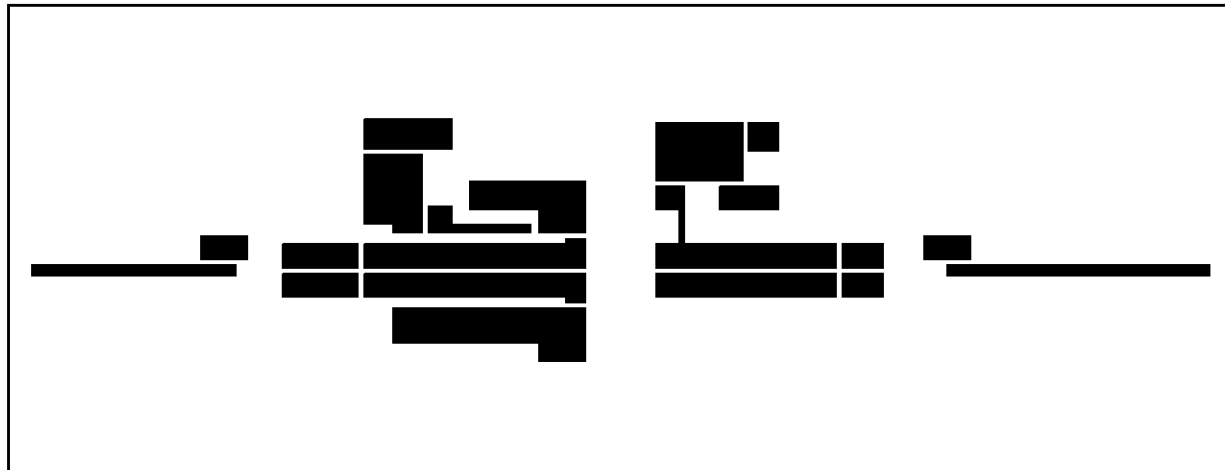


S88-SD1489-06

## TEST CIRCUIT

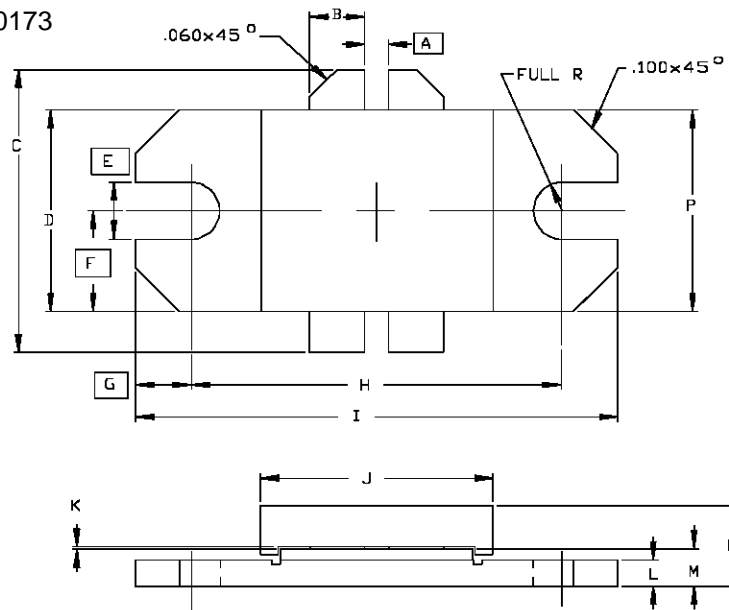


## TEST CIRCUIT LAYOUT



## 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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