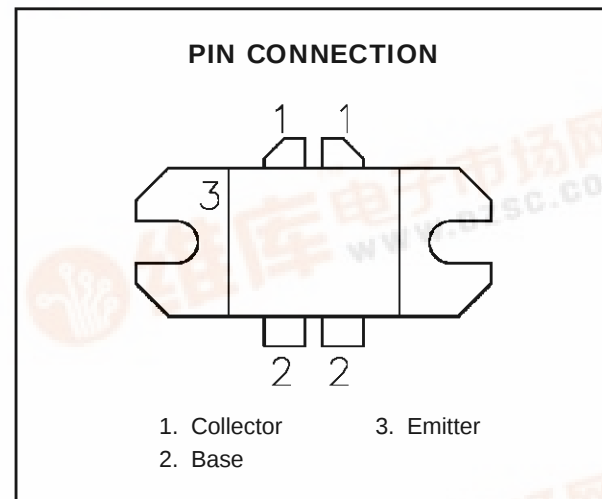
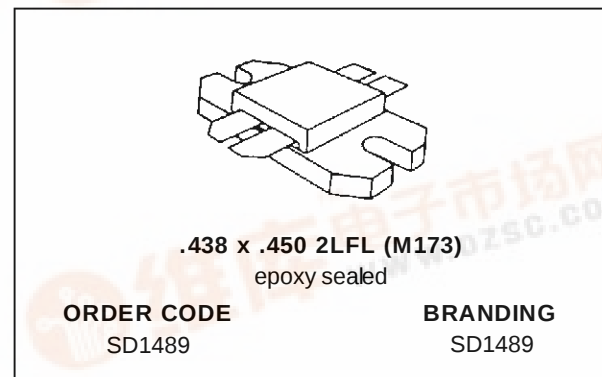




SD1489

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

$R_{\theta(j-c)}$	Junction-Case Thermal Resistance	1.0	$^{\circ}\text{C/W}$
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SD1489

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

STATIC

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

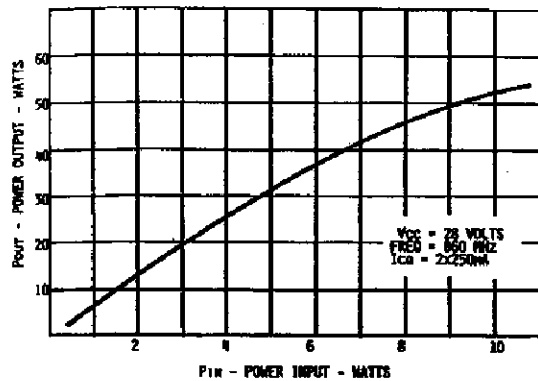
DYNAMIC

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

Note: Pulse Width = 10 μ Sec, Duty Cycle = 1%

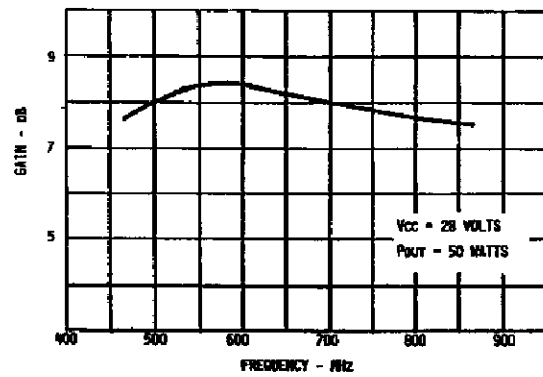
TYPICAL PERFORMANCE

OUTPUT POWER vs POWER INPUT

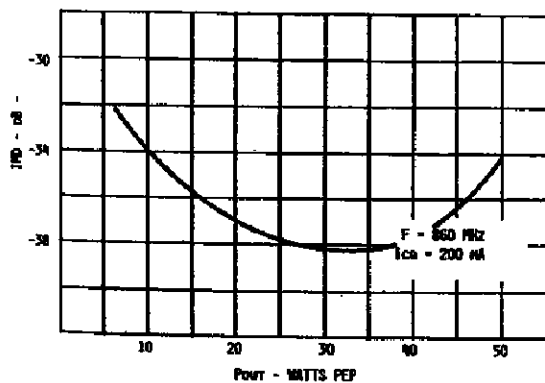


S88-SD1489-02

BROADBAND POWER GAIN vs FREQUENCY

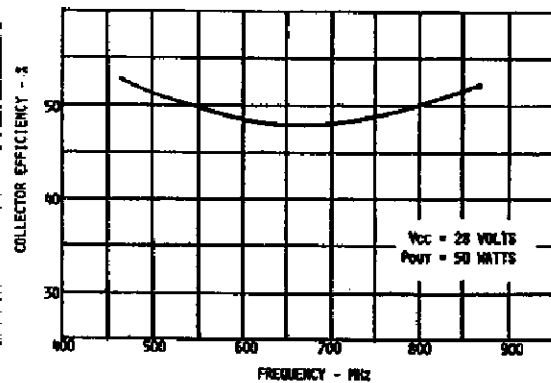


S88-SD1489-03

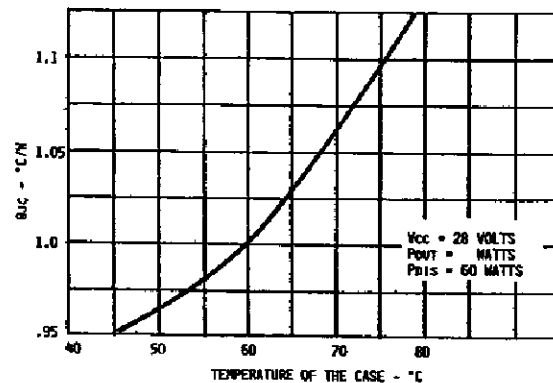
INTERMODULATION DISTORTION
vs OUTPUT POWER

S88-SD1489-04

COLLECTOR EFFICIENCY vs FREQUENCY



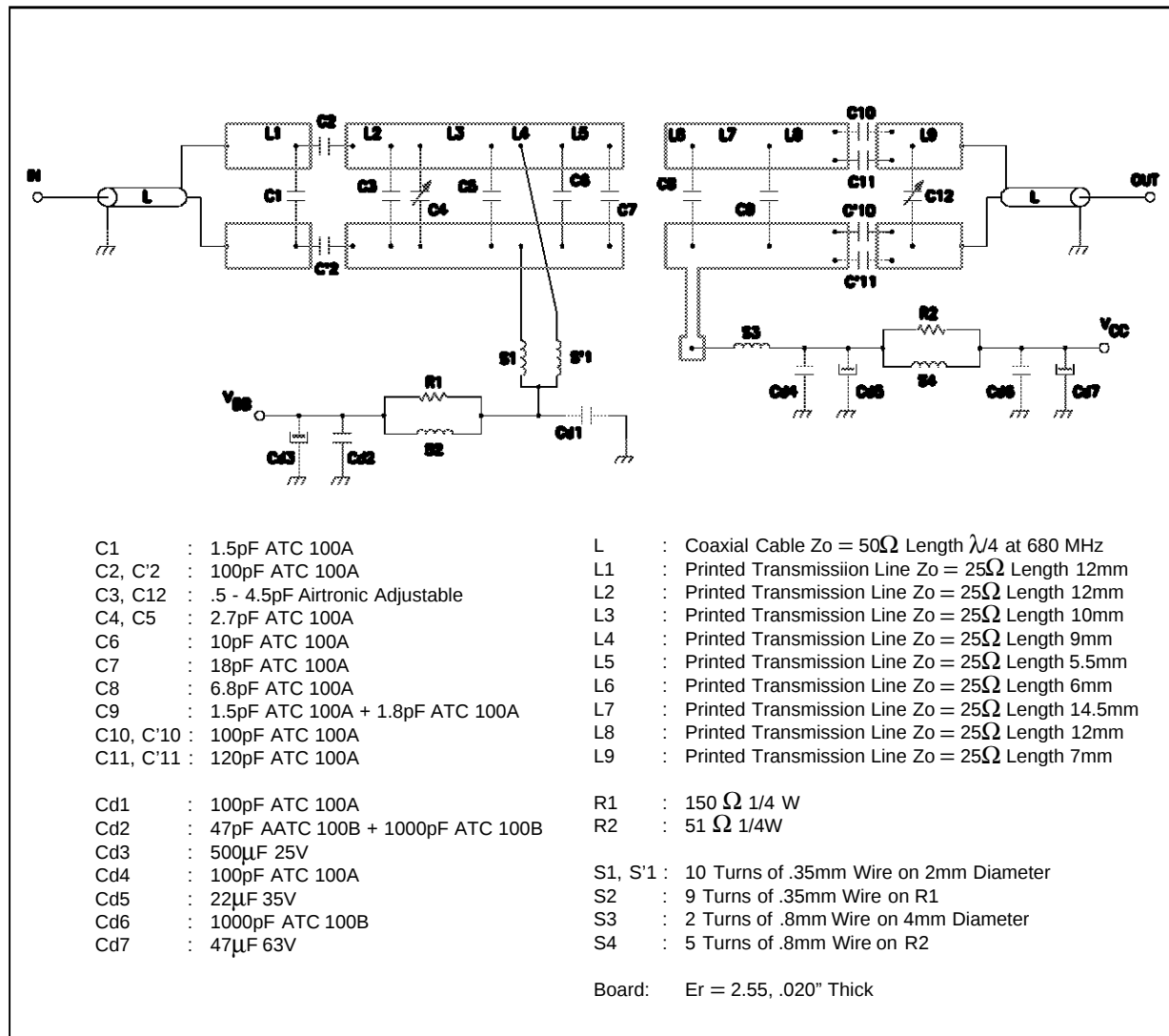
S88-SD1489-05

THERMAL RESISTANCE vs CASE
TEMPERATURE

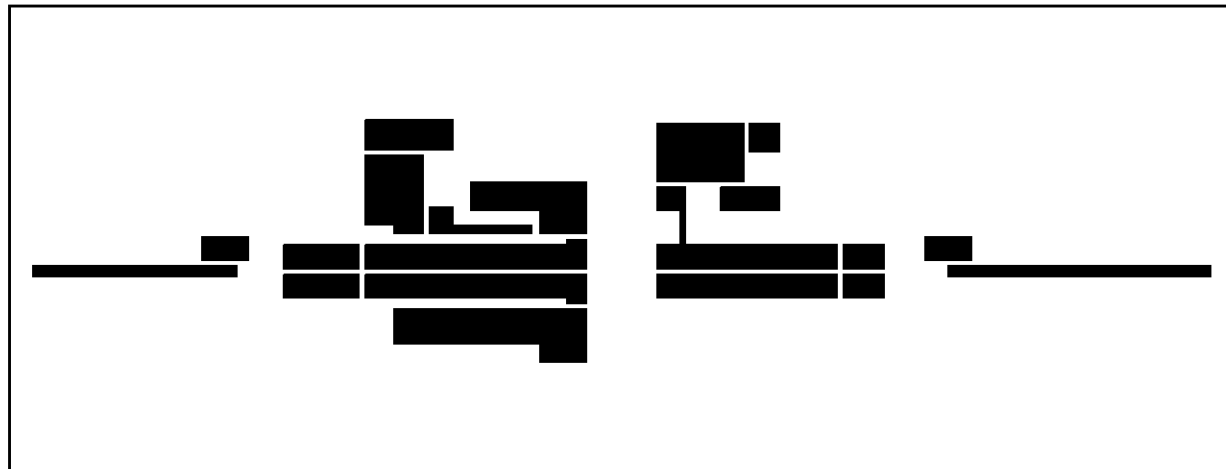
S88-SD1489-06

SD1489

TEST CIRCUIT

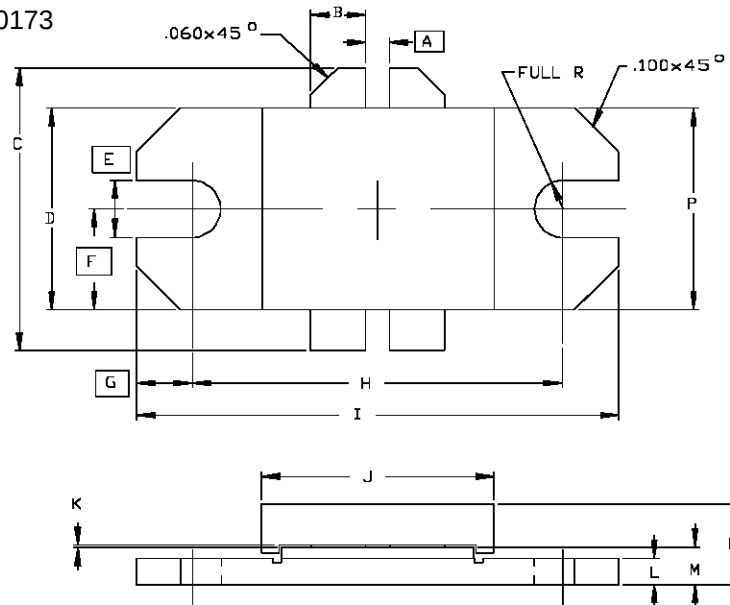


TEST CIRCUIT LAYOUT



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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