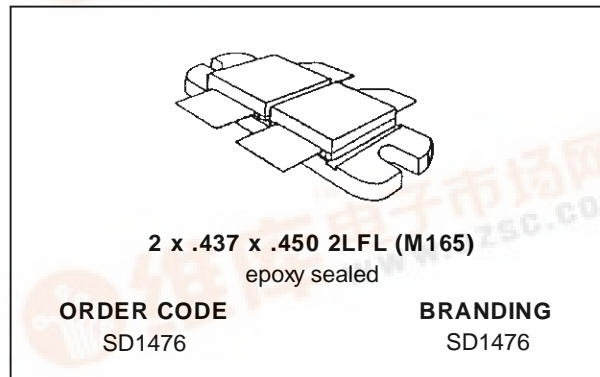




SD1476

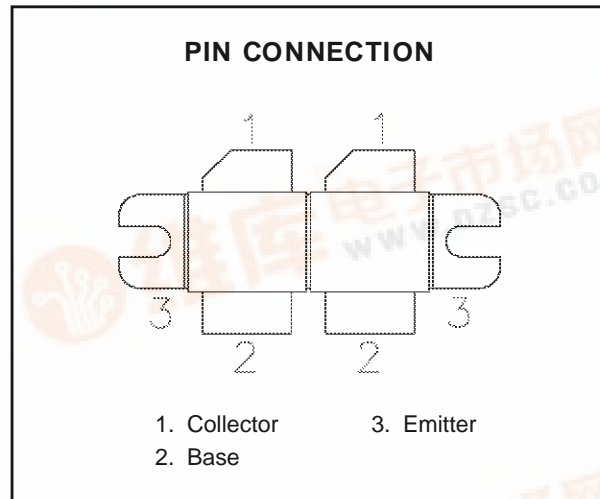
**RF & MICROWAVE TRANSISTORS
TV/LINEAR APPLICATIONS**

- 55 - 88 MHz
- 32 VOLTS
- COMMON EMITTER
- GOLD METALLIZATION
- INTERNAL INPUT MATCHING
- CLASS AB PUSH PULL
- HIGH SATURATED POWER CAPABILITY
- DIFFUSED EMITTER BALLAST RESISTORS
- DESIGNED FOR HIGH POWER LINEAR OPERATION
- P_{OUT} = 240 W MIN. WITH 12.0 dB GAIN



DESCRIPTION

The SD1476 is a gold metallized epitaxial silicon NPN planar transistor using diffused emitter ballast resistors for high linearity Class AB operation in VHF and Band I television transmitters and transposers.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	70	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _c	Device Current	25	A
P _{DISS}	Power Dissipation	430	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 50 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	0.4	°C/W
----------------------	----------------------------------	-----	------



SD1476

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 50\text{mA}$	$I_{\text{E}} = 0\text{mA}$	70	—	—	V
BV_{CER}	$I_{\text{C}} = 50\text{mA}$	$R_{\text{BE}} = 51\Omega$	68	—	—	V
BV_{CEO}	$I_{\text{C}} = 100\text{mA}$	$I_{\text{B}} = 0\text{mA}$	40	—	—	V
BV_{EBO}	$I_{\text{E}} = 20\text{mA}$	$I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CEO}	$V_{\text{CE}} = 30\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	10	mA
I_{CBO}	$V_{\text{CB}} = 30\text{V}$	$I_{\text{E}} = 0\text{mA}$	—	—	10	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 7\text{A}$	10	—	50	—

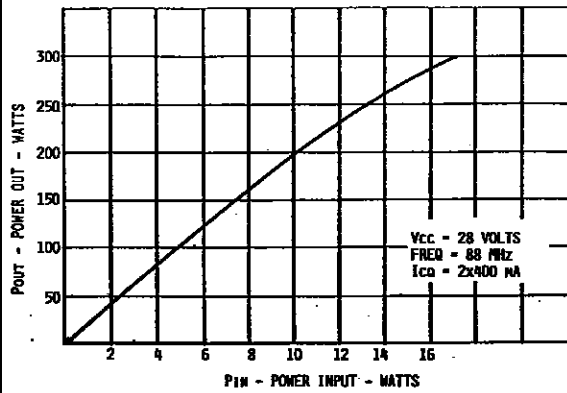
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}^*	$f = 88\text{ MHz}$	$V_{\text{CE}} = 32\text{ V}$	$I_{\text{CQ}} = 2 \times 400\text{mA}$	240	—	—	W
G_{P}	$f = 88\text{ MHz}$	$V_{\text{CE}} = 32\text{ V}$	$I_{\text{CQ}} = 2 \times 400\text{mA}$	12	—	—	dB
η_{C}	$f = 88\text{ MHz}$	$V_{\text{CE}} = 32\text{ V}$	$I_{\text{CQ}} = 2 \times 400\text{mA}$	50	—	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{\text{CB}} = 28\text{ V}$		—	—	220	pF

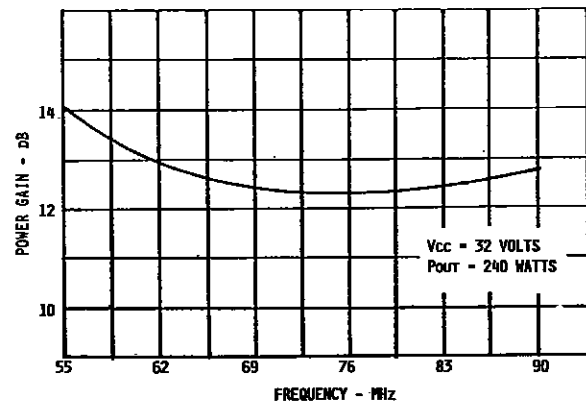
Note: *1 dB Compression

TYPICAL PERFORMANCE

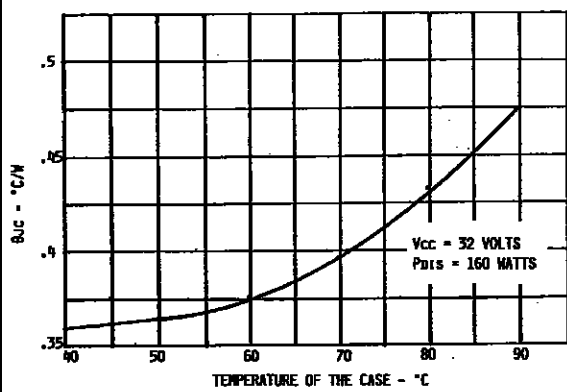
POWER OUTPUT vs POWER INPUT



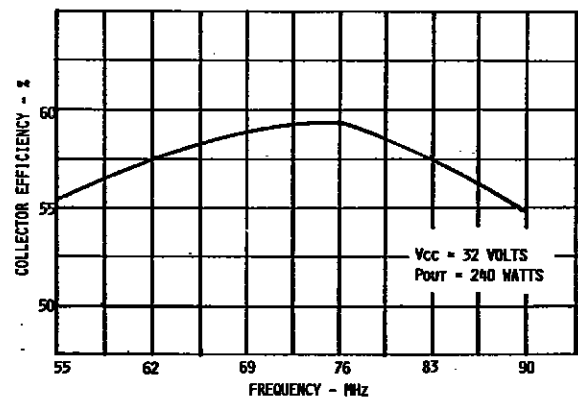
POWER GAIN vs FREQUENCY



THERMAL RESISTANCE vs CASE TEMPERATURE



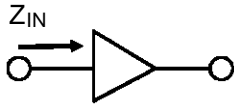
COLLECTOR EFFICIENCY vs FREQUENCY



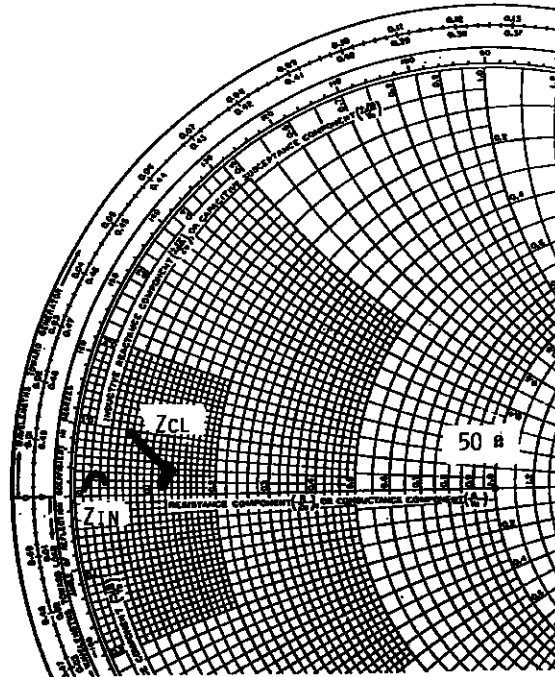
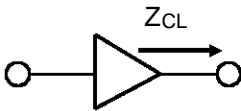
SD1476

IMPEDANCE DATA

**TYPICAL INPUT
IMPEDANCE**



**TYPICAL COLLECTOR
LOAD IMPEDANCE**

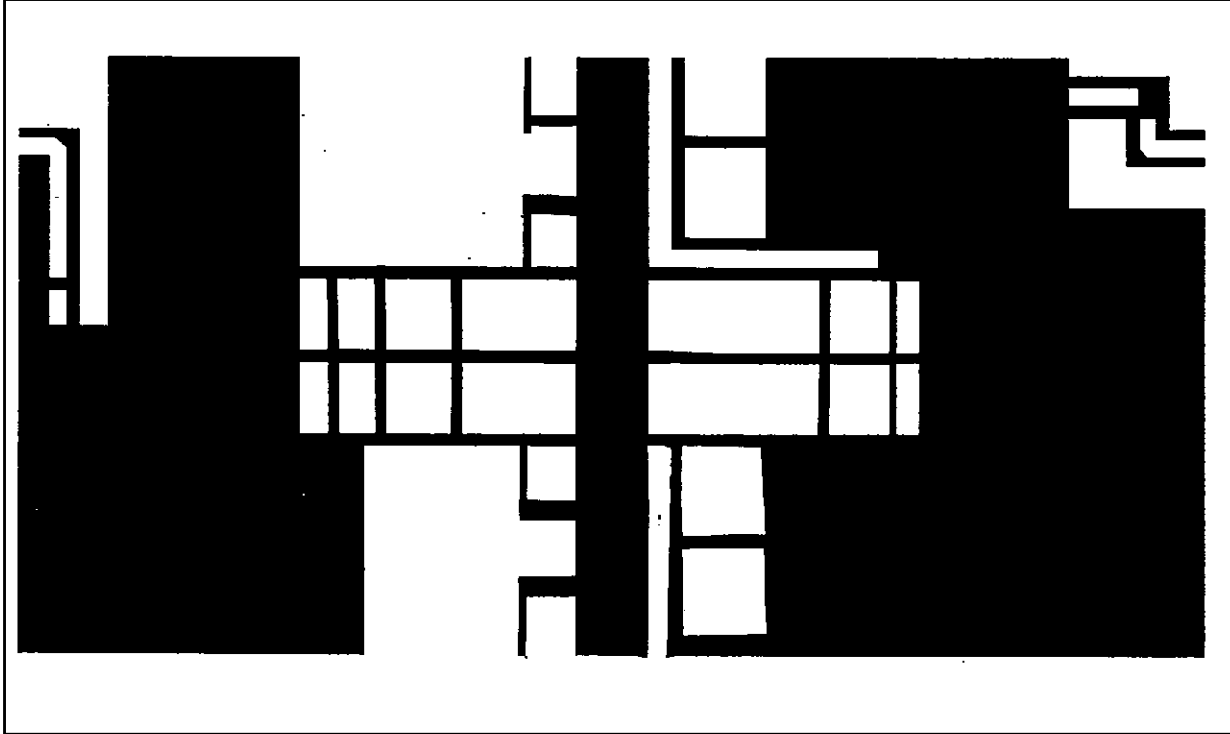


FREQ.	$Z_{IN} (\Omega)$	$Z_{CL} (\Omega)$
55 MHz	$1.7 - j 1.0$	$6.1 + j 1.0$
65 MHz	$1.5 + j 1.3$	$7.0 + j 2.1$
75 MHz	$1.0 + j 1.1$	$6.2 + j 2.0$
90 MHz	$0.8 + j 0.4$	$3.4 + j 4.4$

$P_{OUT} = 240 \text{ W}$

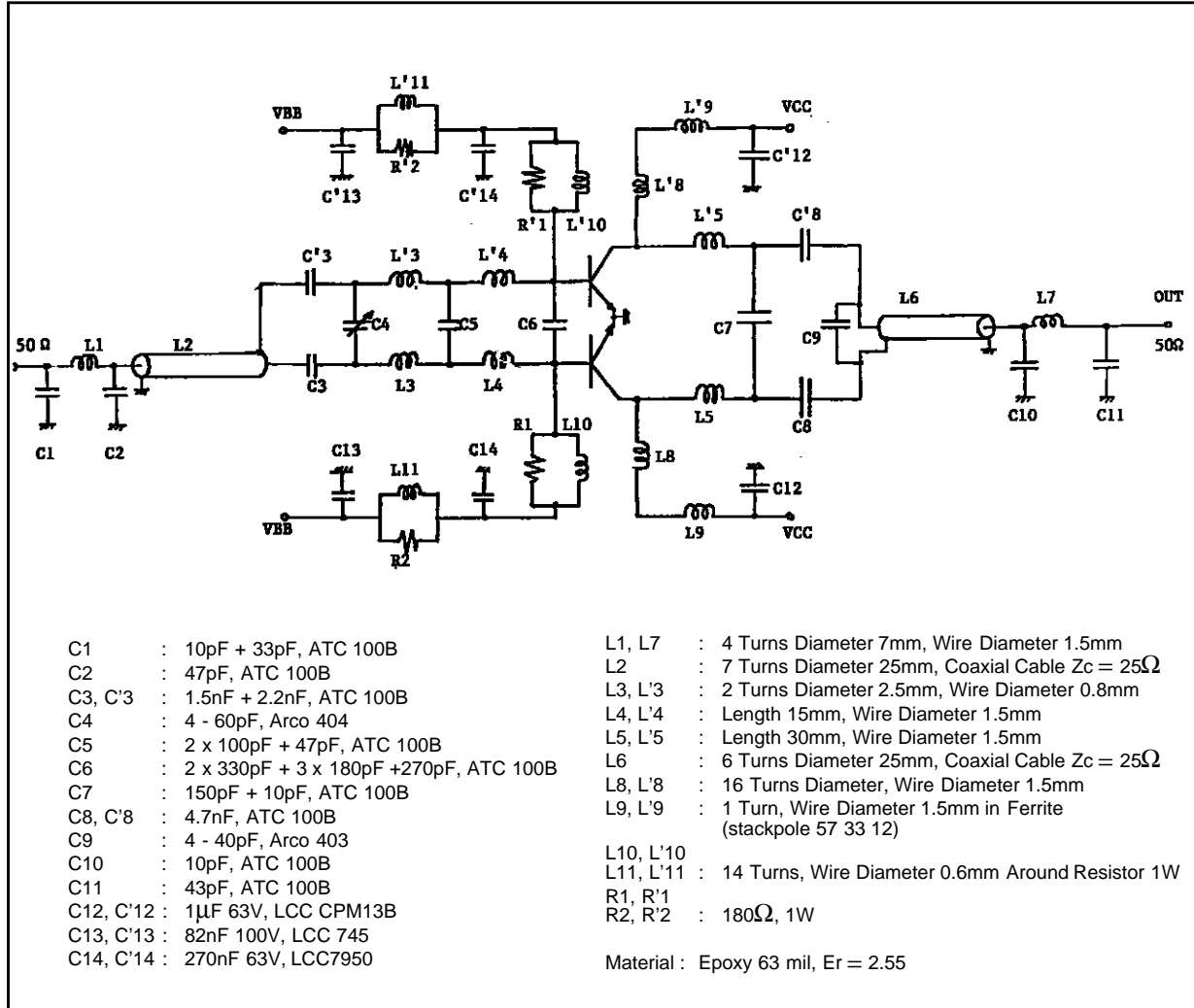
$V_{CC} = 32 \text{ V}$

PRINTED CIRCUIT BOARD LAYOUT



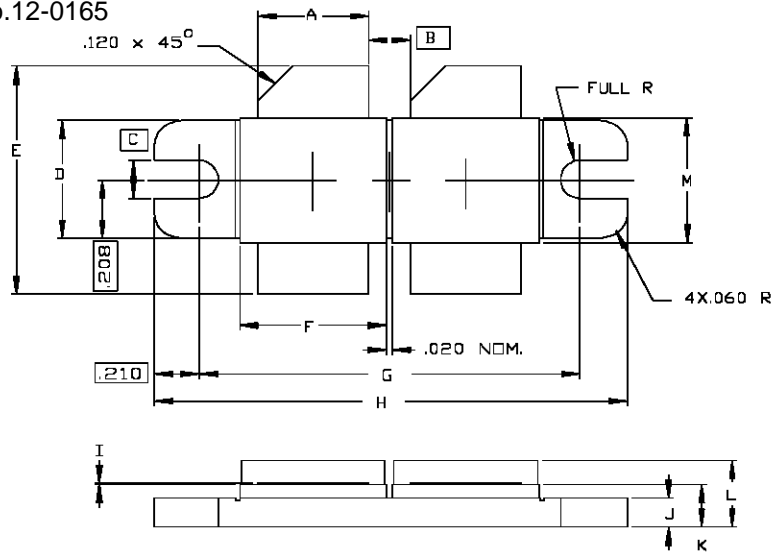
SD1476

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0165



SGS-THOMSON MICROELECTRONICS		CONT'D			
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.373/9,47	.385/9,78	K	.135/3,43	.155/3,94
B	.122/3,10		L		.250/6,35
C	.125/3,18		M	.425/10,80	.435/11,05
D	.411/10,44	.421/10,69			
E	.825/20,96	.865/21,97			
F	.495/12,57	.505/12,83			
G	1.255/31,88	1.265/32,13			
H	1.675/42,55	1.685/42,80			
I	.002/0,05	.006/0,15			
J	.095/2,41	.105/2,67			

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1994 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES
Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A