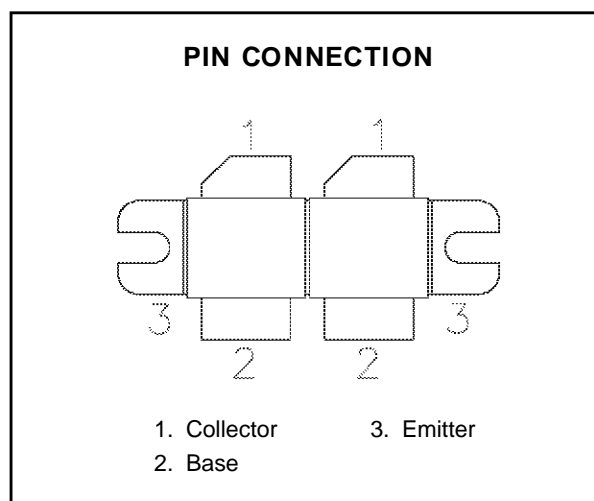
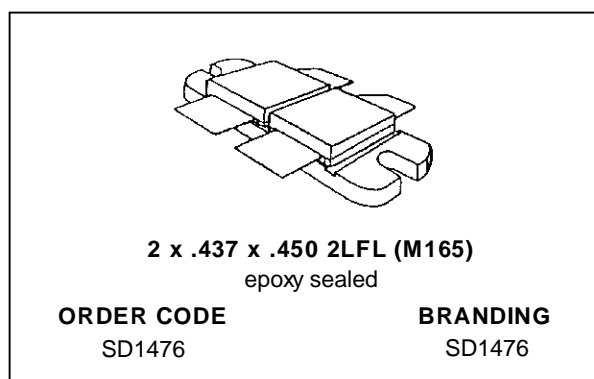


**RF & MICROWAVE TRANSISTORS  
TV/LINEAR APPLICATIONS**

- 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
- $P_{OUT} = 240 \text{ W MIN. WITH } 12.0 \text{ dB GAIN}$


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

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	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	- 50 to +150	$^{\circ}\text{C}$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	0.4	$^{\circ}\text{C/W}$
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## SD1476

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

#### STATIC

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

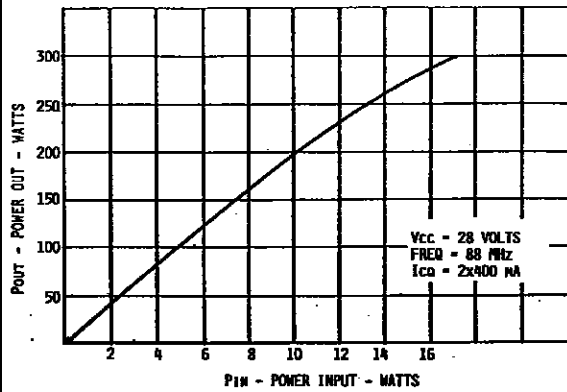
#### DYNAMIC

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

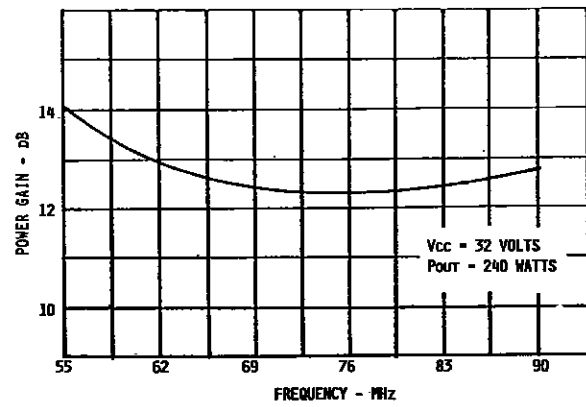
Note: \*1 dB Compression

## TYPICAL PERFORMANCE

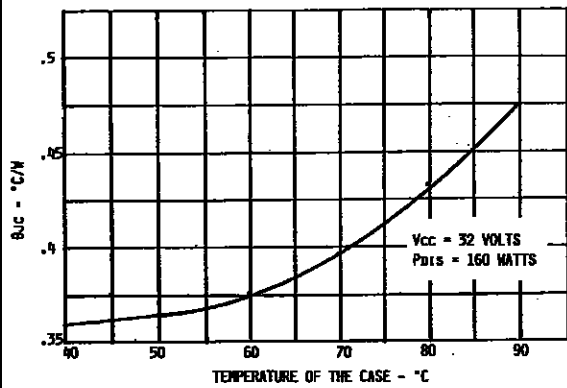
POWER OUTPUT vs POWER INPUT



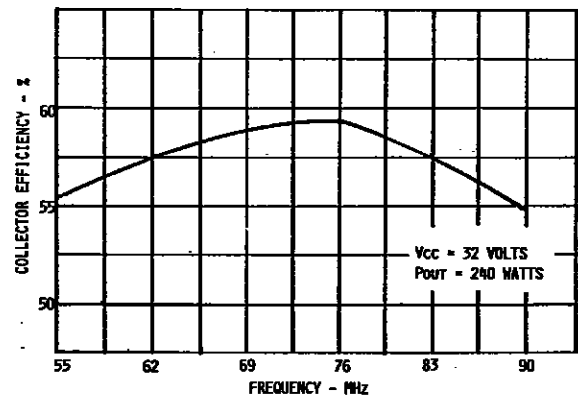
POWER GAIN vs FREQUENCY



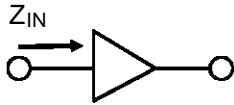
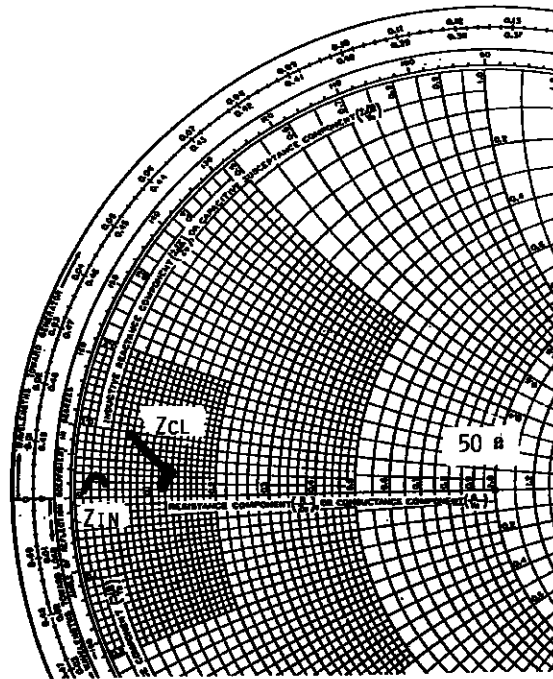
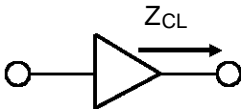
THERMAL RESISTANCE vs CASE TEMPERATURE



COLLECTOR EFFICIENCY vs FREQUENCY



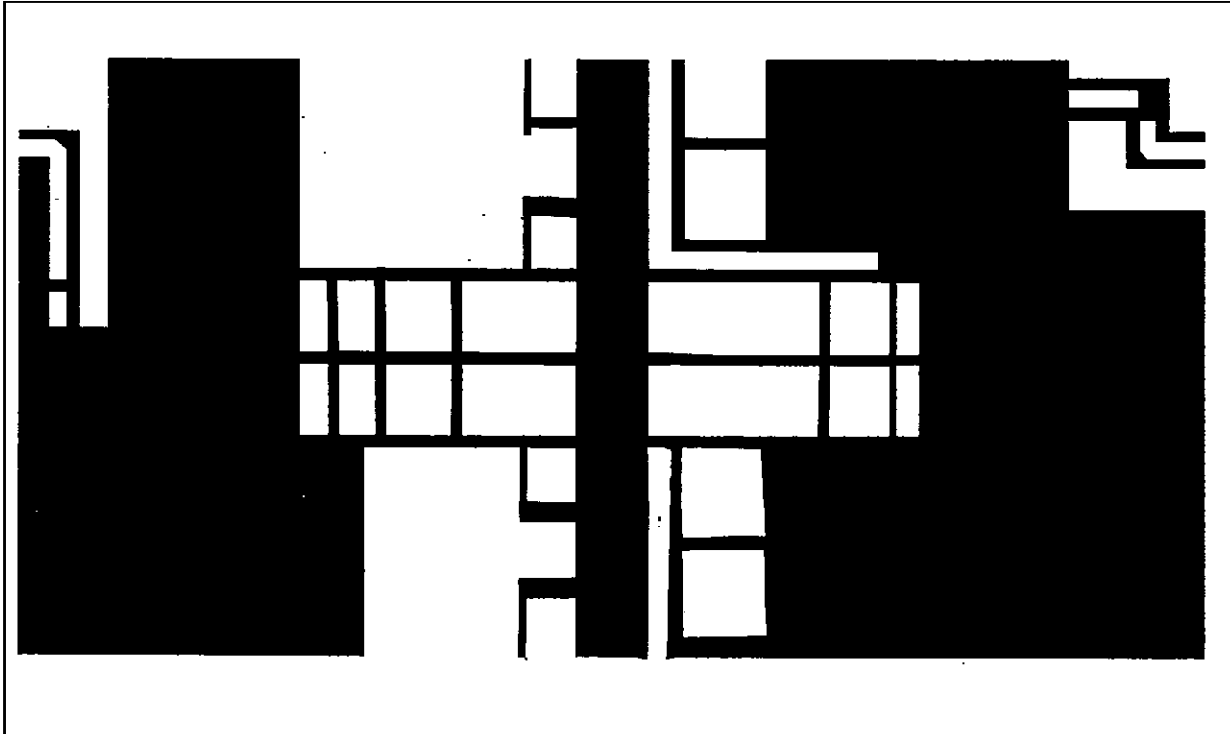
## IMPEDANCE DATA

TYPICAL INPUT  
IMPEDANCETYPICAL COLLECTOR  
LOAD IMPEDANCE

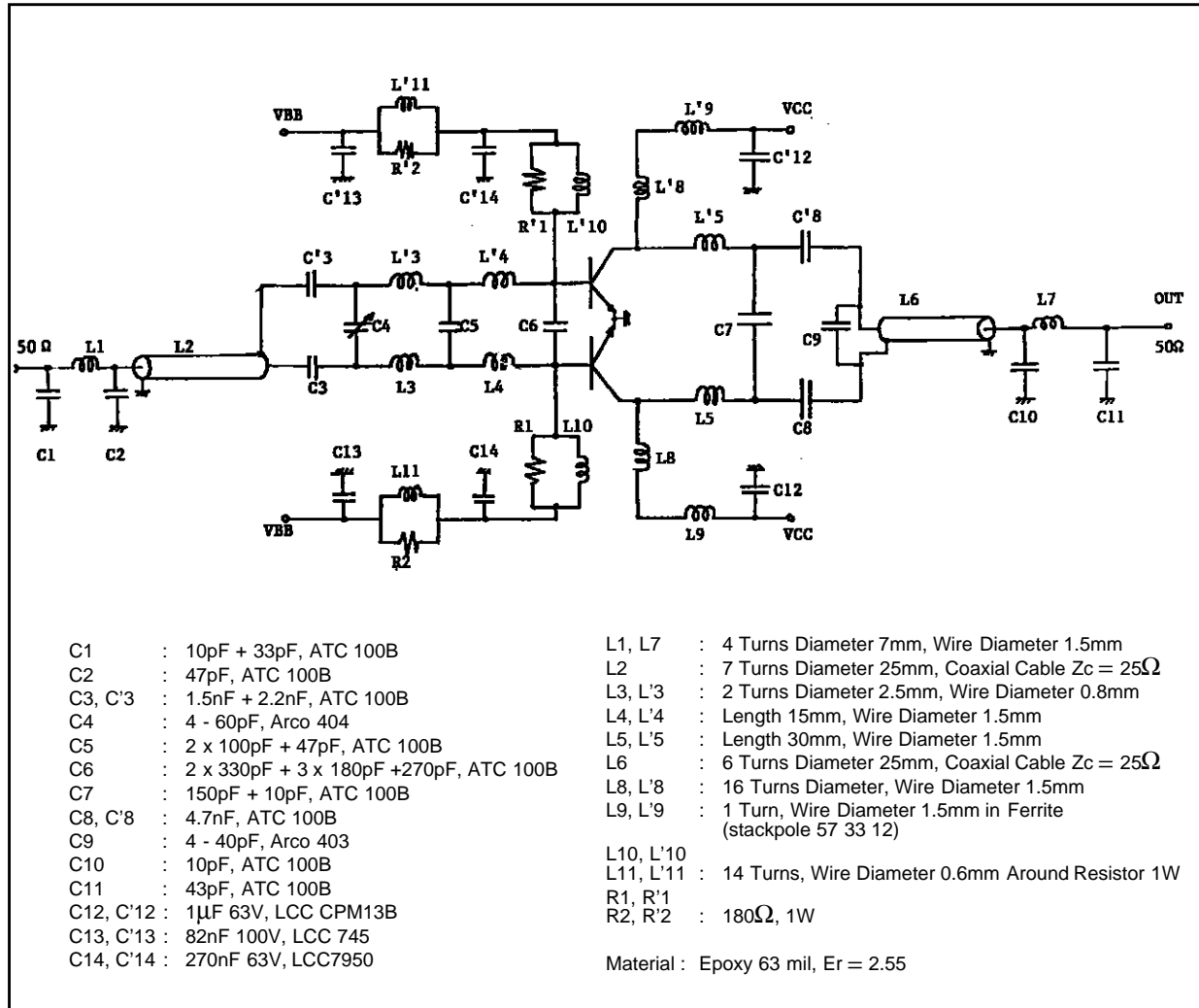
FREQ.	$Z_{IN}$ ( $\Omega$ )	$Z_{CL}$ ( $\Omega$ )
55 MHz	$1.7 + j 1.0$	$6.1 + j 1.0$
65 MHz	$1.5 + j 1.3$	$7.0 + j 2.1$
75 MHz	$1.0 + j 1.1$	$6.2 + j 2.0$
90 MHz	$0.8 + j 0.4$	$3.4 + j 4.4$

$P_{OUT} = 240 \text{ W}$   
 $V_{CC} = 32 \text{ V}$

PRINTED CIRCUIT BOARD LAYOUT

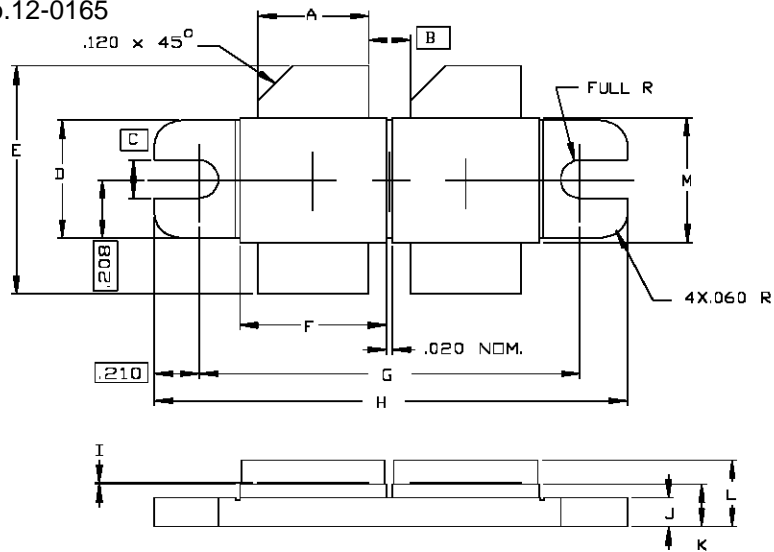


## TEST CIRCUIT



## 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			

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