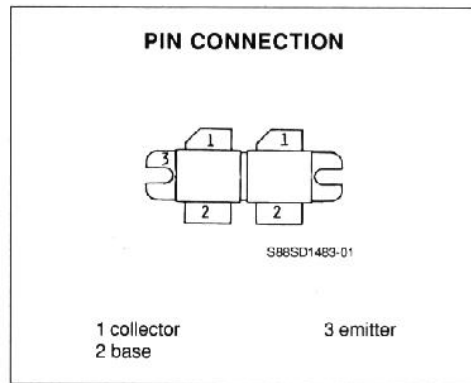
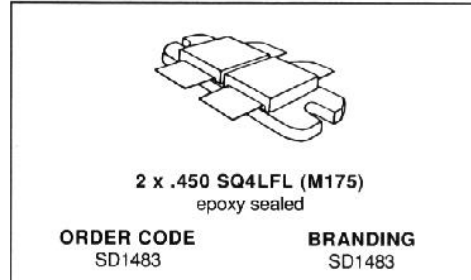


**RF & MICROWAVE TRANSISTORS  
FM BROADCAST APPLICATIONS**

- FM CLASS C TRANSISTOR
- FREQUENCY 88-108MHz
- VOLTAGE 28V
- POWER OUT 300W BROADBAND
- POWER GAIN 10dB
- EFFICIENCY 60%
- GOLD METALLIZATION
- COMMON EMITTER



**DESCRIPTION**

The SD1483 is a 28V gold metallized epitaxial silicon NPN planar transistor designed for VHF, FM broadcasting transmitters. This device utilizes diffused emitter resistors to achieve infinite VSWR at rated operating conditions.

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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector - Base Voltage	60	V
$V_{CEO}$	Collector - Emitter Voltage	30	V
$V_{CES}$	Collector - Emitter Voltage	60	V
$V_{EBO}$	Emitter - Base Voltage	3	V
$I_C$	Collector Current	25	A
$P_{tot}$	Total Power Dissipation	380	W
$T_{stg}$	Storage Temperature	- 50 to 150	$^{\circ}C$
$T_j$	Junction Temperature	200	$^{\circ}C$

**THERMAL DATA**

$R_{th(j-c)}$	Junction-case Thermal Resistance	0.45	$^{\circ}C/W$
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**SD1483****ELECTRICAL CHARACTERISTICS** ( $T_{\text{case}} = 25^{\circ}\text{C}$ )

## STATIC

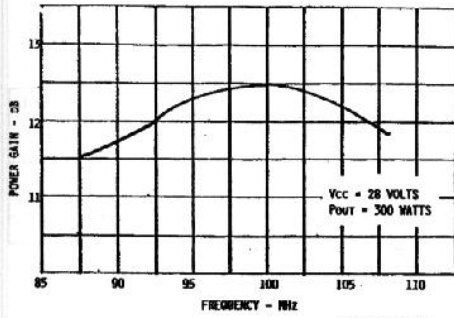
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{\text{CBO}}$	$I_{\text{C}} = 100\text{mA}$	$I_{\text{E}} = 0$	60			V
$BV_{\text{CES}}$	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0$	60			V
$BV_{\text{CEO}}$	$I_{\text{C}} = 100\text{mA}$	$I_{\text{B}} = 0$	30			V
$BV_{\text{EBO}}$	$I_{\text{E}} = 20\text{mA}$	$I_{\text{C}} = 0$	3			V
$I_{\text{CBO}}$	$V_{\text{CB}} = 30\text{V}$	$I_{\text{E}} = 0$			10	mA
$h_{\text{FE}}$	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = 1\text{A}$	15		120	

## DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$P_{\text{D}}$	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	300			W
$G_{\text{p}}$	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	10	11		dB
$\eta_{\text{c}}$	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	60			%
$C_{\text{ob}}$	$f = 1\text{MHz}$	$V_{\text{CB}} = 28\text{V}$		130		pF

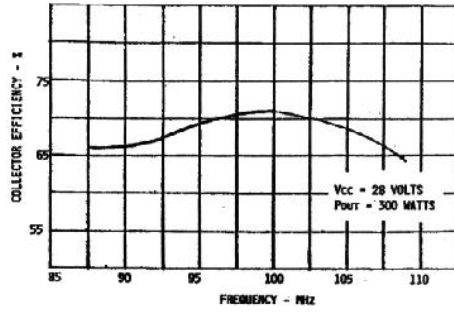
APPLICATION INFORMATION (typical curves)

BROADBAND POWER GAIN VS FREQUENCY



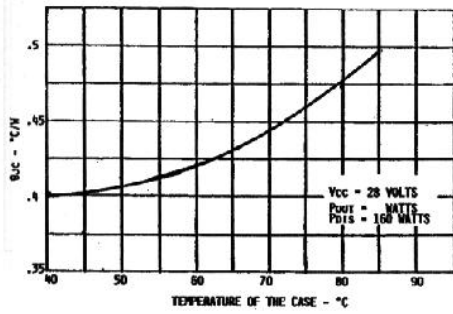
S88SD1483-02

EFFICIENCY VS FREQUENCY



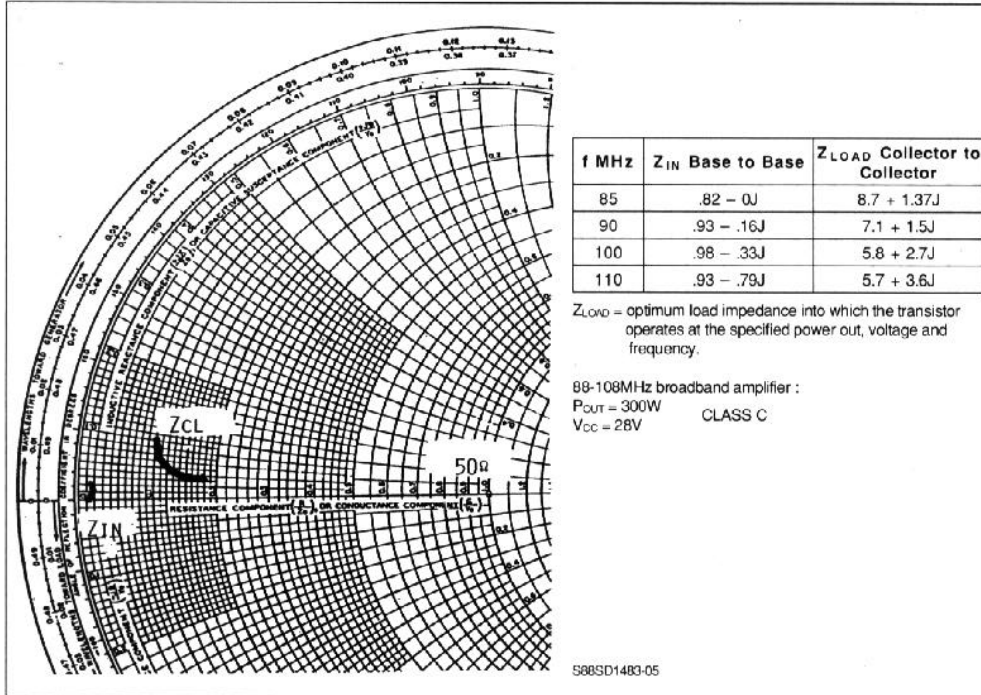
S88SD1483-03

IR SCAN HOT  $\theta_{JC}$  VS CASE TEMPERATURE

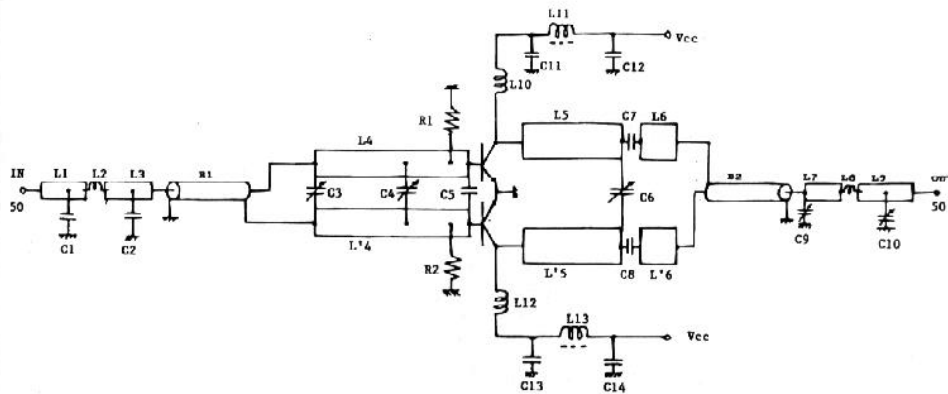


S88SD1483-04

SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE



## SD1483 : 88-108MHz BROADBAND AMPLIFIER

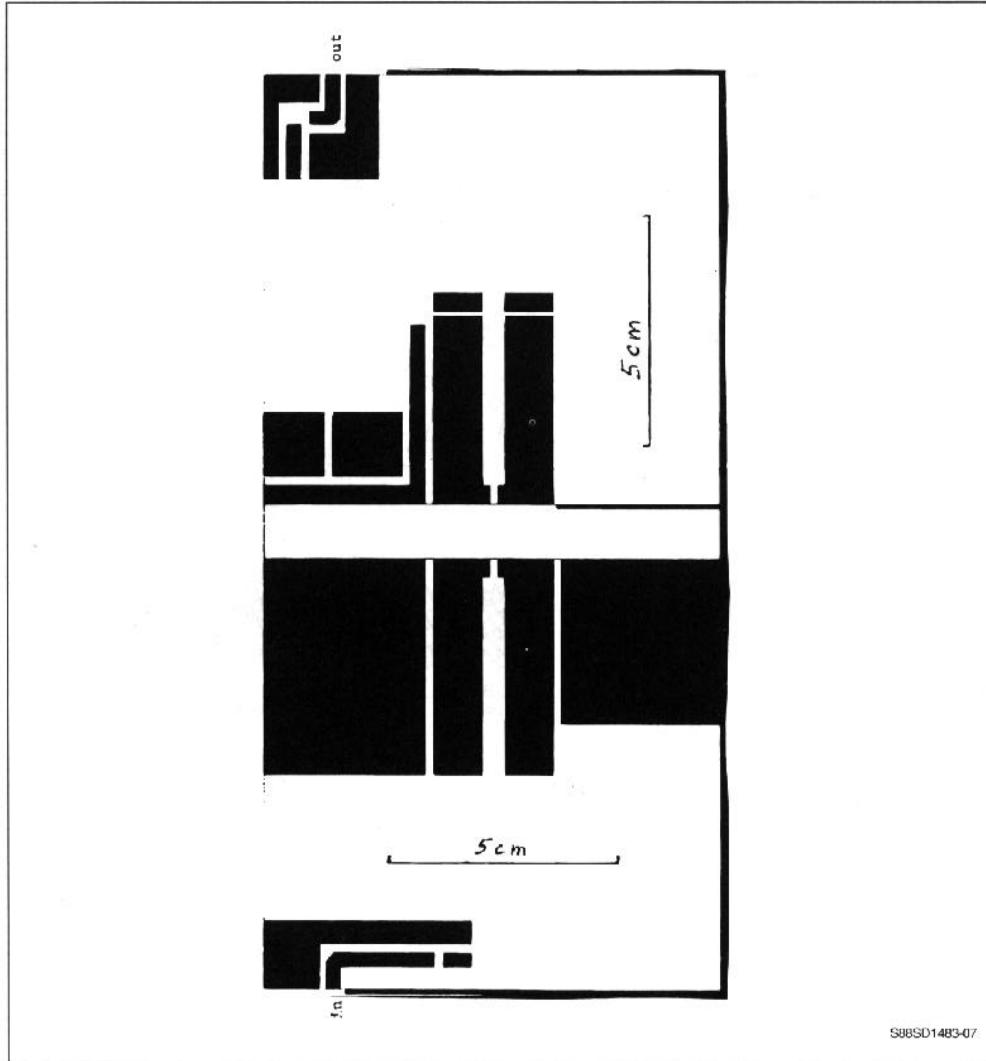


## Parts List : SD1483

S88SD1483.06

Material	- Epoxy 63 MILS ER = 2.55	C3	- Trimmer 24-200pF
L1, L3, L7, L9	- Printed line $Z_c = 50\Omega$	C4	- 270pF + 380pF + 24-200pF Trimmer
L4, L'4	- Printed line $W = 11\text{mm}$ $L = 47\text{mm}$	C5	- 560pF ATC 100 B
L5, L'5	- Printed line $W = 11\text{mm}$ $L = 40\text{mm}$	C6	- 24-200pF Trimmer
L6, L'6	- Printed line $W = 11\text{mm}$ $L = 4\text{mm}$	C7, C8	- 4.7nF ATC 100 B
L2	- Inductor $L = 32\text{nH}$	C9	- 2x22pF- ATC 100 B + 1-10pF Trimmer
L8	- Inductor $L = 50\text{nH}$	C10	- 27pF ATC 100 B + 1-14pF Trimmer
L10, L12	- wire $\phi = 1.5\text{mm}$ , $L = 75\text{nH}$	C11, C12, C13, C14	- 1nF + 100nF + 47uF-63V
L11, L13	- Choke	R1, R2	- 6.2 $\Omega$ SFERNICE
C1	- Trimmer 4-60pF	B1, B2	- $Z_c = 25\Omega$ coaxial cable = $\lambda_g/4$
C2	- 33pF ATC 100 B		

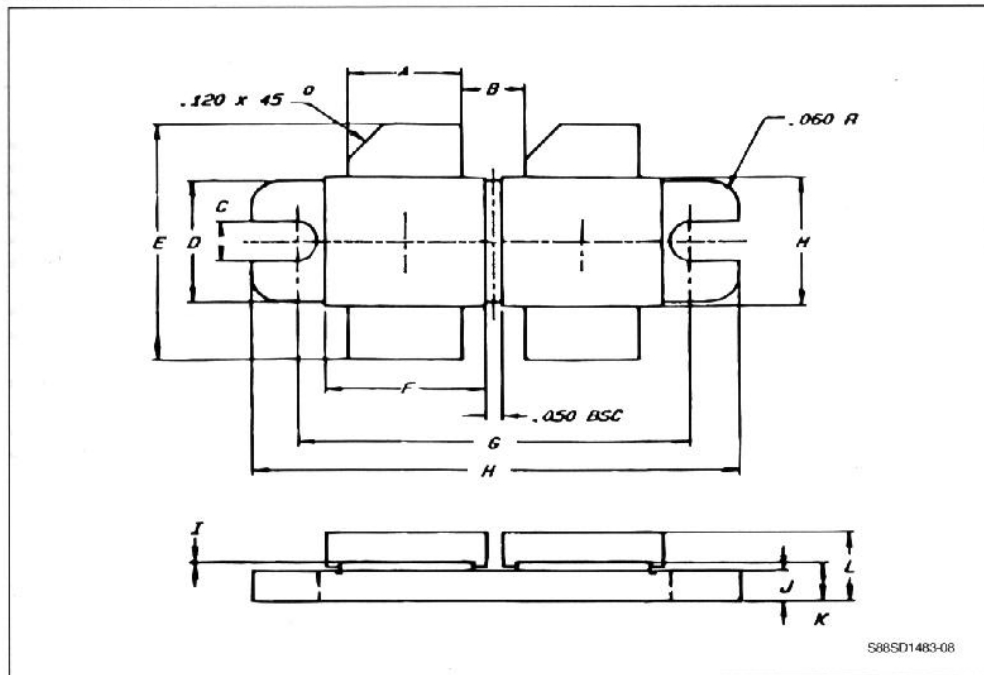
PRINTED CIRCUIT BOARD LAYOUT



S88SD1483-07

## PACKAGE MECHANICAL DATA

2 x .450 SQ4LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.373/9.47	.385/9.78
B	.190/4.83 BSC	
C	.125/3.18 BSC	
D	.411/10.44	.421/10.69
E	.825/20.96	.865/21.97
F	.525/13.34	.535/13.59
G	1.255/31.88	1.265/32.13

	Minimum Inches/mm	Maximum Inches/mm
H	1.675/42.55	1.685/42.80
I	.002/0.05	.006/0.15
J	.095/2.41	.105/2.67
K	.115/2.92	.135/3.43
L		.250/6.35
M	.445/11.30	.455/11.56