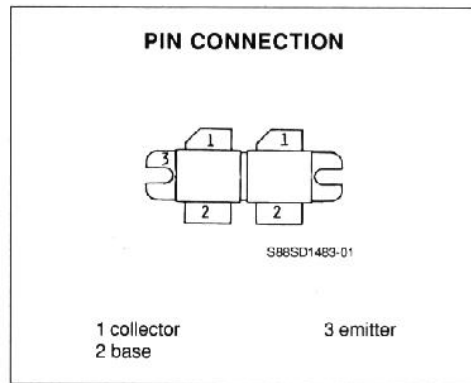
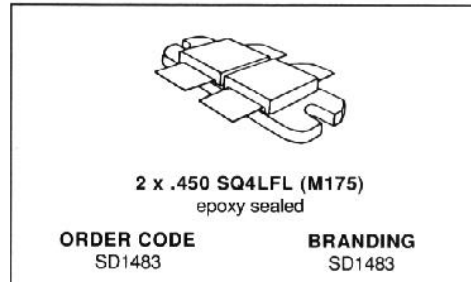


**RF & MICROWAVE TRANSISTORS
FM BROADCAST APPLICATIONS**

- 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

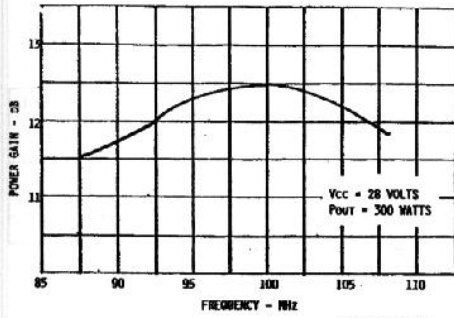
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CBO}	$I_{\text{C}} = 100\text{mA}$	$I_{\text{E}} = 0$	60			V
BV_{CES}	$I_{\text{C}} = 100\text{mA}$	$V_{\text{BE}} = 0$	60			V
BV_{CEO}	$I_{\text{C}} = 100\text{mA}$	$I_{\text{B}} = 0$	30			V
BV_{EBO}	$I_{\text{E}} = 20\text{mA}$	$I_{\text{C}} = 0$	3			V
I_{CBO}	$V_{\text{CB}} = 30\text{V}$	$I_{\text{E}} = 0$			10	mA
h_{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_{D}	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	300			W
G_{p}	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	10	11		dB
η_{c}	$f = 88\text{-}108\text{MHz}$	$V_{\text{CC}} = 28\text{V}$	60			%
C_{ob}	$f = 1\text{MHz}$	$V_{\text{CB}} = 28\text{V}$		130		pF

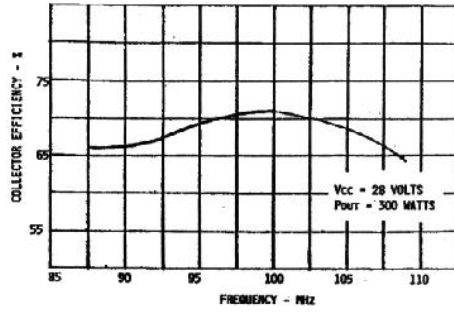
APPLICATION INFORMATION (typical curves)

BROADBAND POWER GAIN VS FREQUENCY



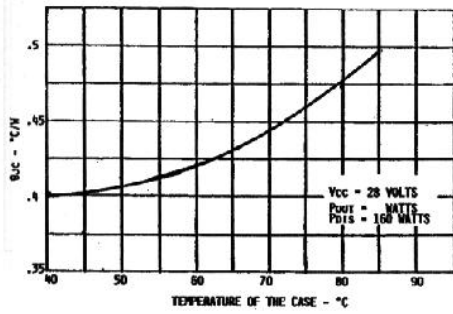
S88SD1483-02

EFFICIENCY VS FREQUENCY



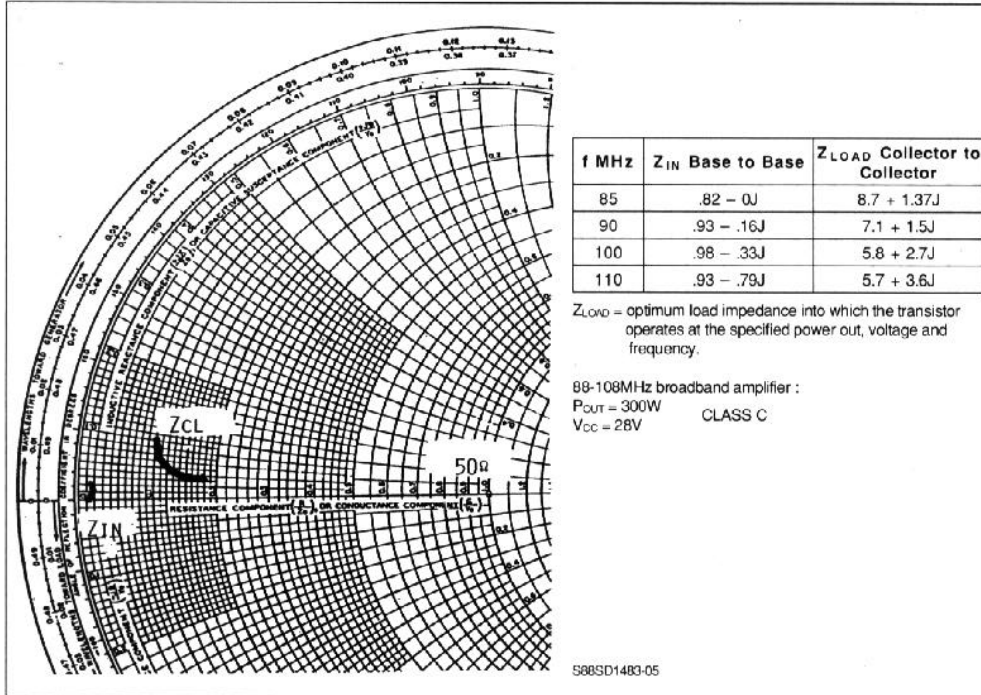
S88SD1483-03

IR SCAN HOT θ_{JC} VS CASE TEMPERATURE

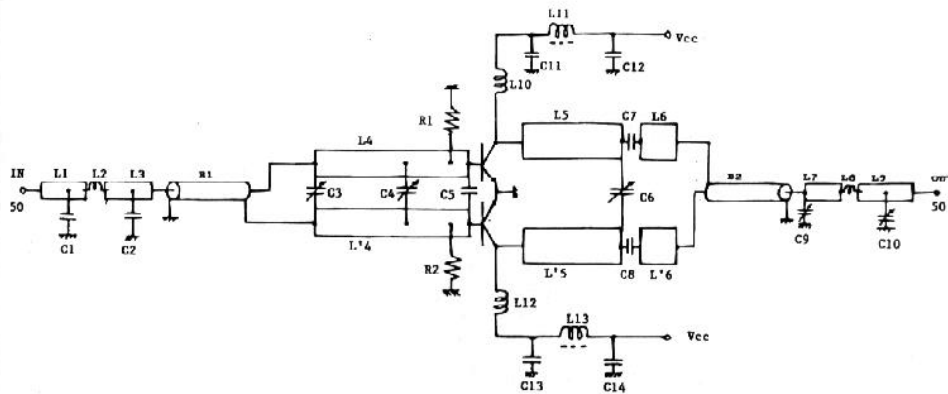


S88SD1483-04

SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE



SD1483 : 88-108MHz BROADBAND AMPLIFIER

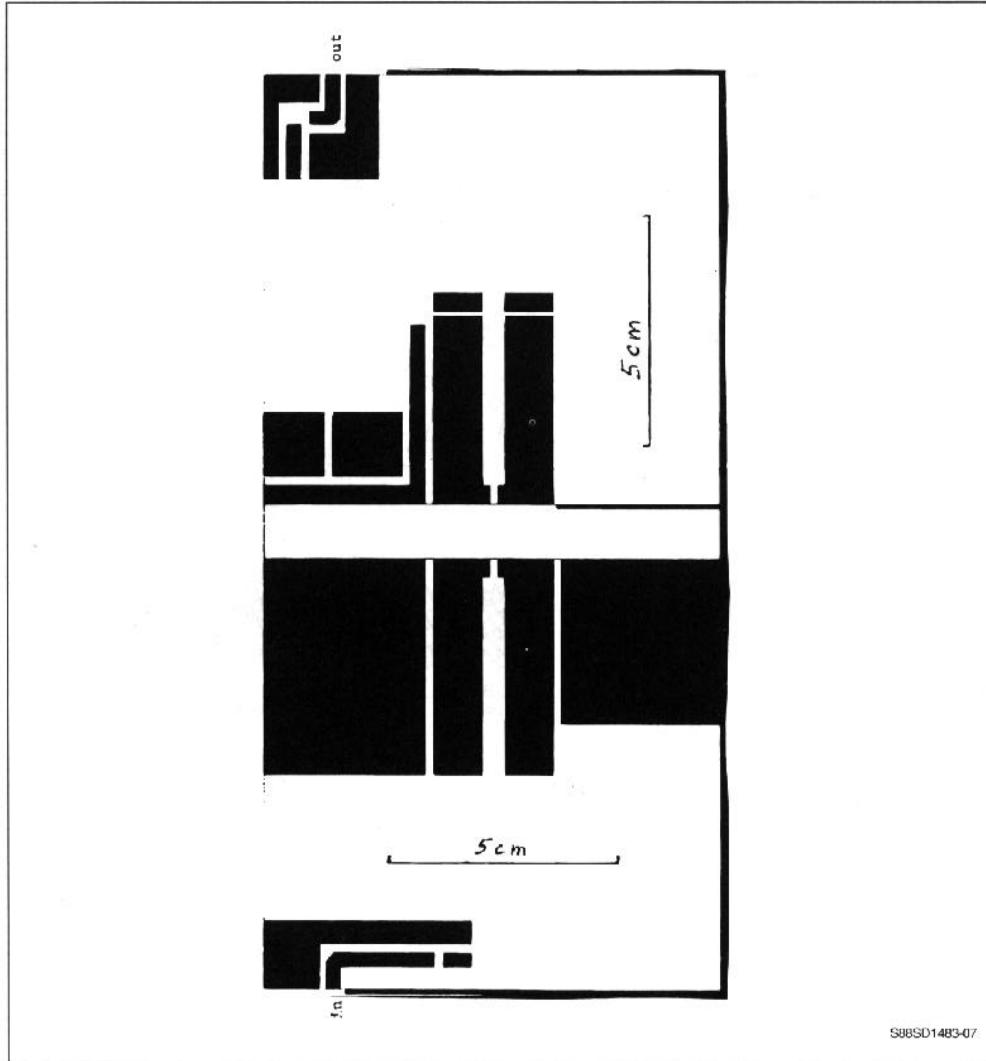


Parts List : SD1483

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 Ω SFERNICE
C1	- Trimmer 4-60pF	B1, B2	- $Z_c = 25\Omega$ coaxial cable = $\lambda_g/4$
C2	- 33pF ATC 100 B		

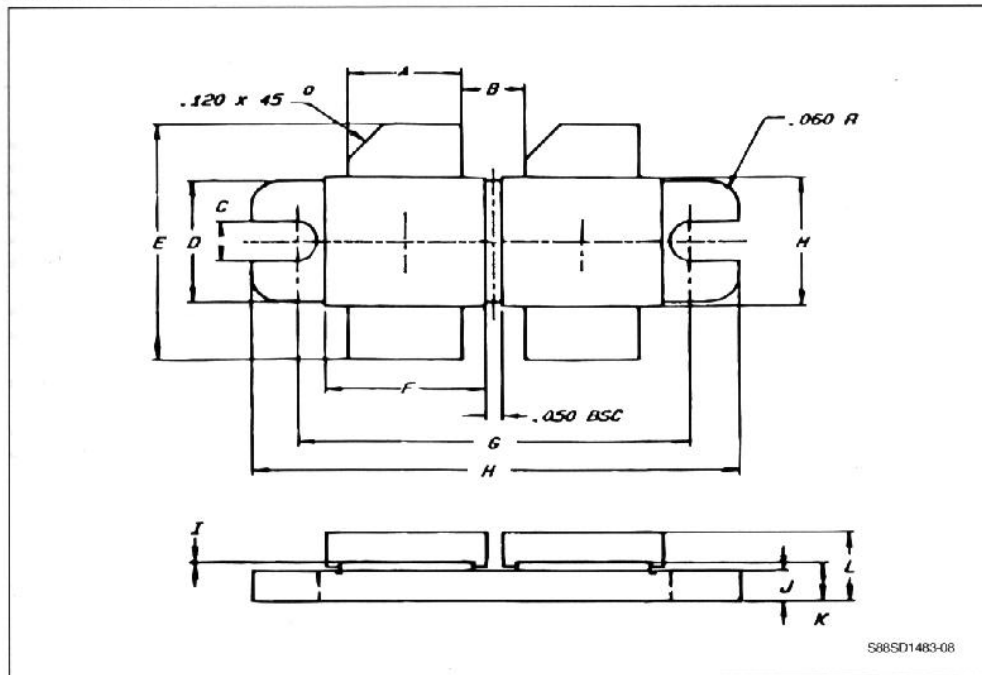
PRINTED CIRCUIT BOARD LAYOUT



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