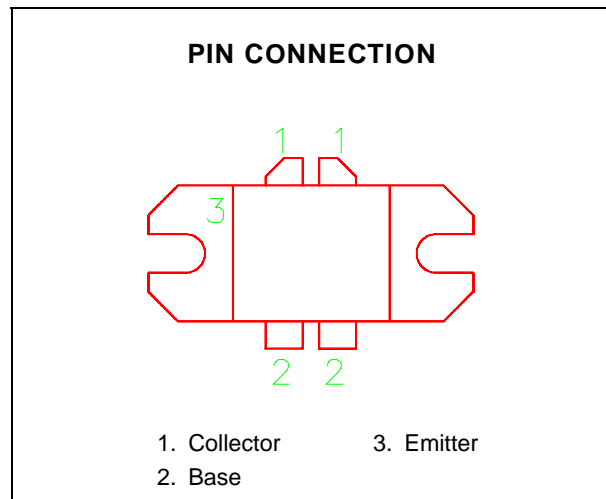
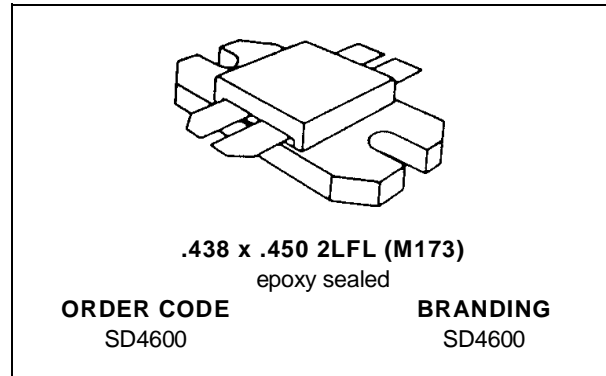


RF & MICROWAVE TRANSISTORS CELLULAR BASE STATION APPLICATIONS

PRELIMINARY DATA

- GOLD METALLIZATION
- 860-960 MHz
- 26 VOLTS
- EFFICIENCY 50% MIN.
- P_{OUT} = 60 W MIN. WITH 7.5 dB GAIN



DESCRIPTION

The SD4600 is designed for 960MHz mobile base stations in both analog and digital applications. Including double input and output matching networks, the SD4600 features high impedances allowing operation over the full 860 to 960 MHz bandwidth.

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	28	V
V _{EBO}	Emitter-Base Voltage	3.5	V
I _C	Device Current	8	A
P _{DISS}	Power Dissipation	146	W
T _J	Junction Temperature	+200	°C
T _{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

R _{TH(j-c)}	Junction-Case Thermal Resistance	1.2	°C/W
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*Applies only to rated RF amplifier operation

SD4600

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC (Total Device)

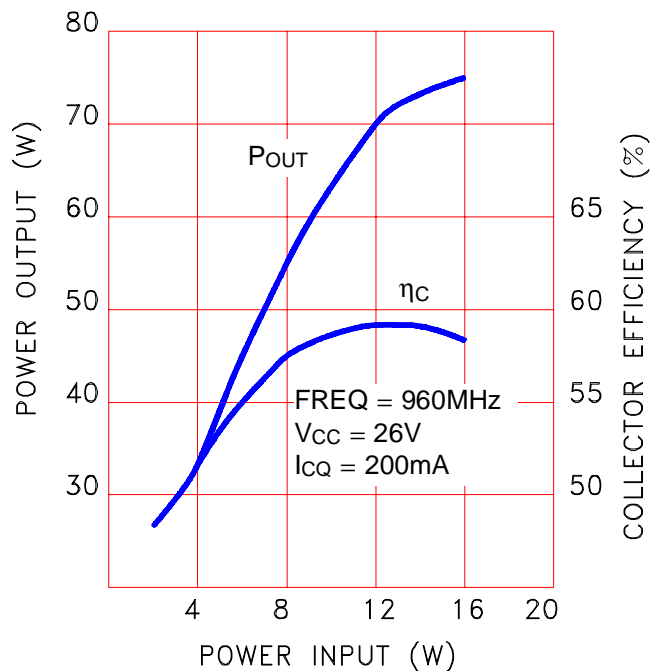
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV _{CBO}	I _C = 100mA	60	—	—	V
BV _{EBO}	I _E = 20mA	3.5	—	—	V
BV _{CEO}	I _C = 100mA	28	—	—	V
I _{CEO}	V _{CE} = 25V	—	—	30	mA
h _{FE}	V _{CE} = 5V I _C = 3A	25	—	80	—

DYNAMIC (Total Device)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P _{OUT}	f = 960MHz V _{CC} = 26V I _{CQ} = .200A	60	65	—	W
η _C	f = 960MHz V _{CC} = 26V I _{CQ} = .200A	50	58	—	%
G _P	f = 960MHz V _{CC} = 26V I _{CQ} = .200A	7.5	8.0	—	dB
VSWR	f = 960MHz V _{CC} = 26V	5:1	—	—	—

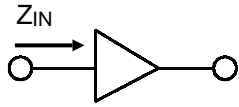
TYPICAL PERFORMANCE

POWER OUTPUT & COLLECTOR EFFICIENCY vs POWER INPUT

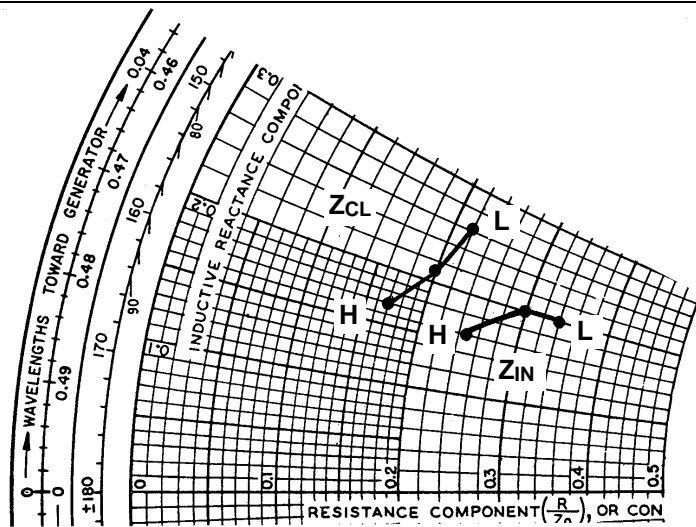
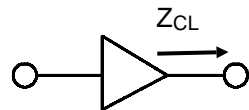


IMPEDANCE DATA

TYPICAL INPUT IMPEDANCE



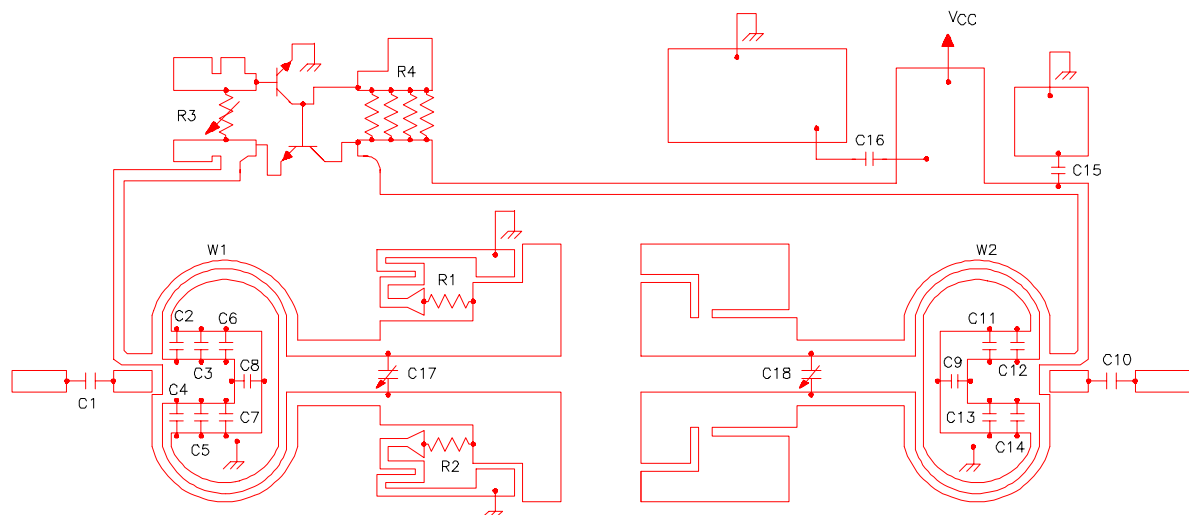
TYPICAL COLLECTOR LOAD IMPEDANCE



FREQ.	Z _{IN} (Ω)	Z _{CL} (Ω)
860 MHz	17 + j 10	11 + j 12
900 MHz	14 + j 10	10 + j 10.5
960 MHz	12.5 + j 8	8.5 + j 8.5

P_{OUT} = 60W
 V_{CC} = 26V
 Normalized to 50ohms

TEST CIRCUIT

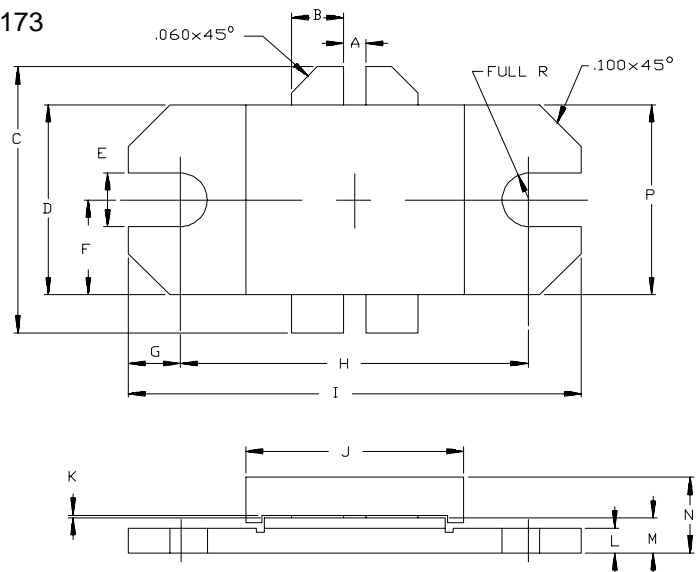


- C1, C10: 120pF Chip Capacitor B Size
- C2, C5
- C11, C14: 470pF Chip Capacitor B Size
- C6, C7 : 100μF Electrolytic Capacitor
- C8 : 4.7μF Electrolytic Capacitor
- C9 : 10μF Electrolytic Capacitor
- C15 : 39,000pF Chip Capacitor

- C16 : 63μF Capacitor
- C17 : .6 - 4.5pF Johanson Variable Capacitor
- C18 : .8 - 8.0pF Johanson Variable Capacitor
- R1, R2 : 20Ω (.5W) Chip Resistor
- R3 : 10K Potentiometer
- R4 : 4 3.17KΩ (.25W) Chip Resistor
- S1 : Teflon Glass Er = 2.33 H = .020

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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