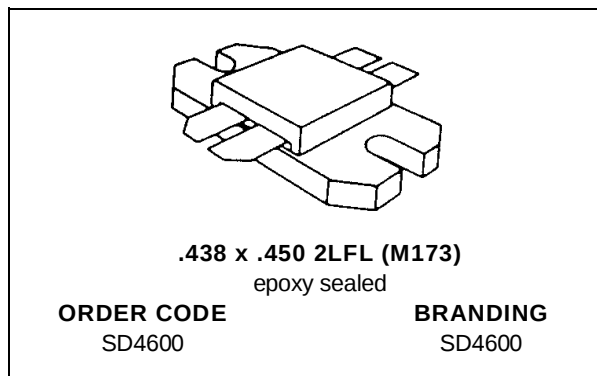


RF & MICROWAVE TRANSISTORS CELLULAR BASE STATION APPLICATIONS

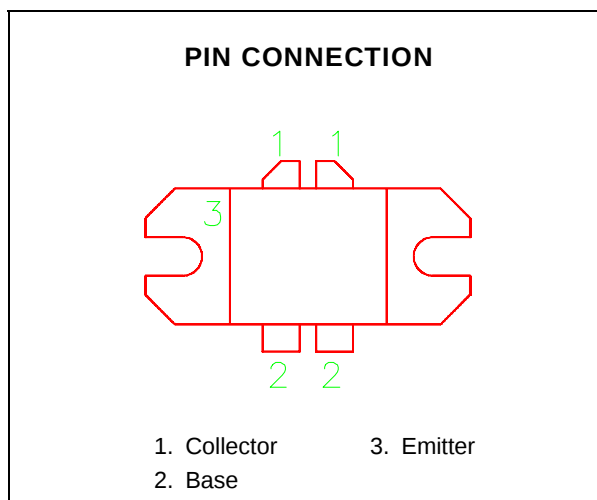
PRELIMINARY DATA

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



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

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	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	$^{\circ}\text{C/W}$
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*Applies only to rated RF amplifier operation

SD4600

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

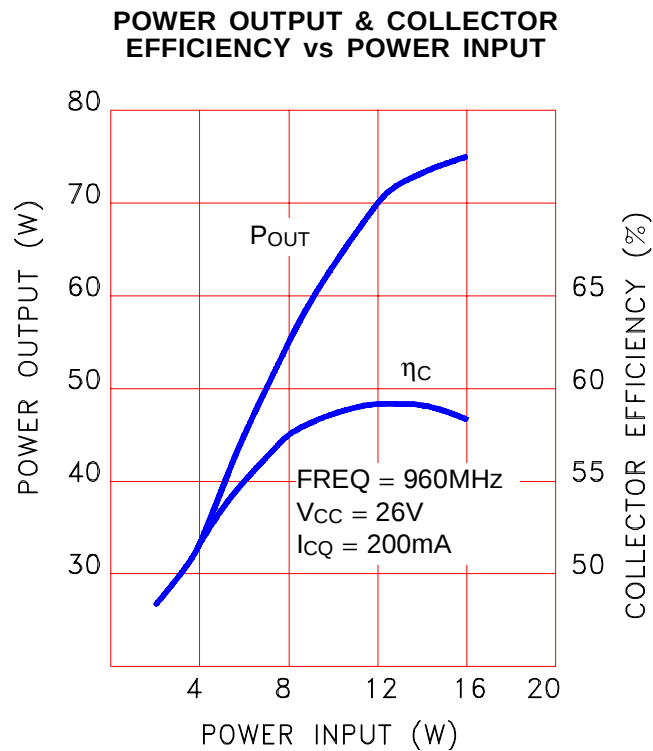
STATIC (Total Device)

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	—

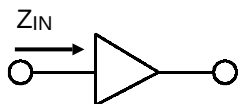
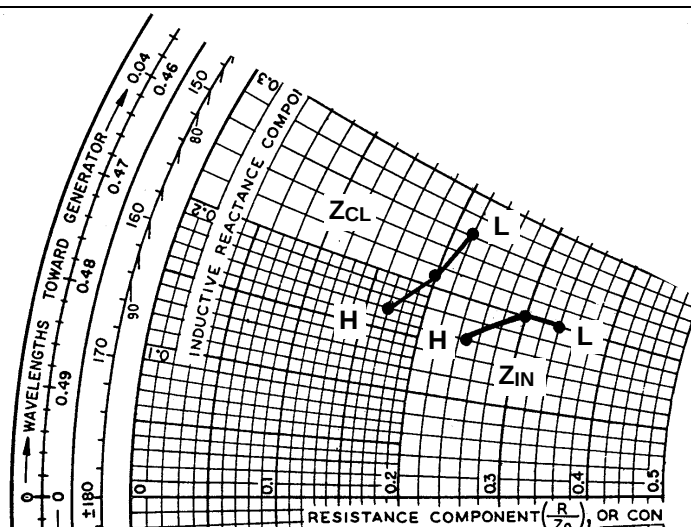
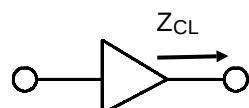
DYNAMIC (Total Device)

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



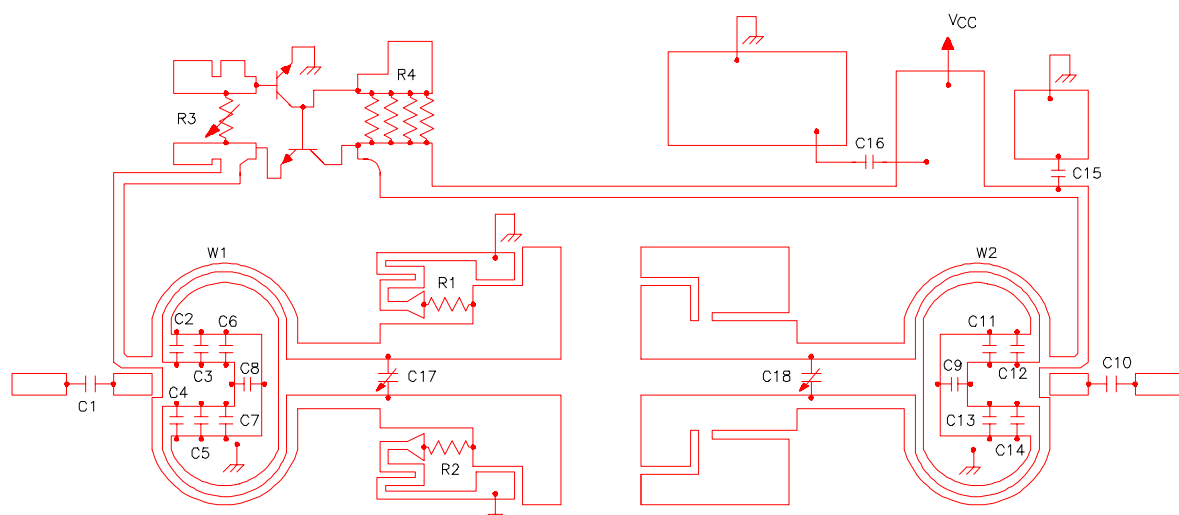
IMPEDANCE DATA

TYPICAL INPUT
IMPEDANCETYPICAL 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

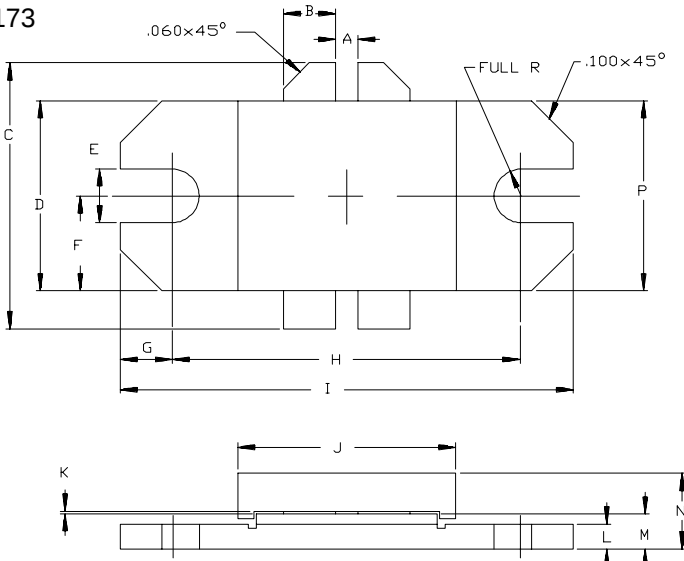


C1,C10: 120pF Chip Capacitor B Size
 C2,C5 : 470pF Chip Capacitor B Size
 C6,C7 : 100 μ F Electrolytic Capacitor
 C8 : 4.7 μ F Electrolytic Capacitor
 C9 : 10 μ F Electrolytic Capacitor
 C15 : 39,000pF Chip Capacitor

C16 : 63 μ F Capacitor
 C17 : .6 - 4.5pF Johanson Variable Capacitor
 C18 : .8 - 8.0pF Johanson Variable Capacitor
 R1, R2 : 20 Ω (.5W) Chip Resistor
 R3 : 10K Potentiometer
 R4 : 4 3.17K Ω (.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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