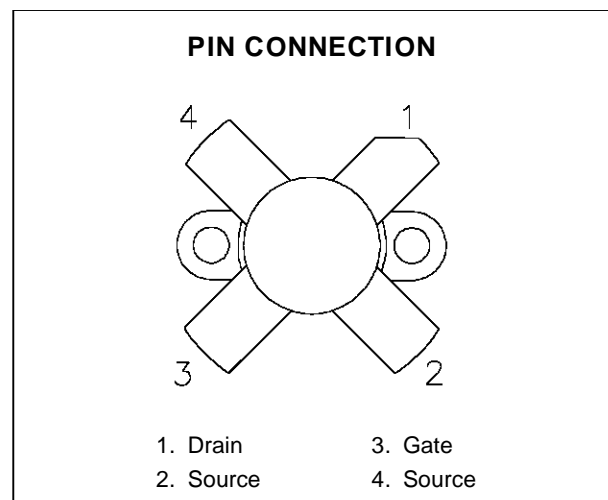
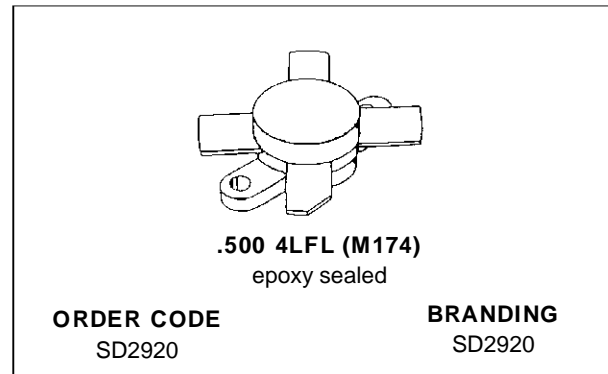


RF MOS FIELD EFFECT TRANSISTORS HF/VHF APPLICATIONS

- 2 - 200 MHz
- 50 VOLTS
- IMD -30 dB
- CLASS AB
- WIDEBAND TUNING
- SIMPLE BIAS CIRCUITRY
- GOLD METALLIZATION FOR HIGH RELIABILITY
- COMMON SOURCE CONFIGURATION
- P_{OUT} = 150 W MIN. WITH 8.0 dB GAIN



DESCRIPTION

The SD2920 is a gold metallized N-Channel MOS field-effect RF power transistor. The SD2920 is intended for use in 50 V dc large signal applications up to 200 MHz.

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

Symbol	Parameter	Value	Unit
V _{(BR)DSS}	Drain-Source Voltage	125	V
V _{DGR}	Drain-Gate Voltage	125	V
V _{GS}	Gate-Source Voltage	± 30	V
I _D	Drain Current	13.9	A
P _{DISS}	Power Dissipation	215	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	0.70 (Typ.)	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

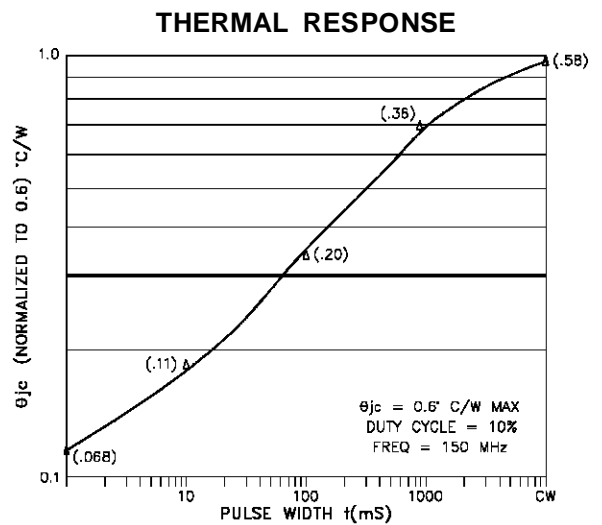
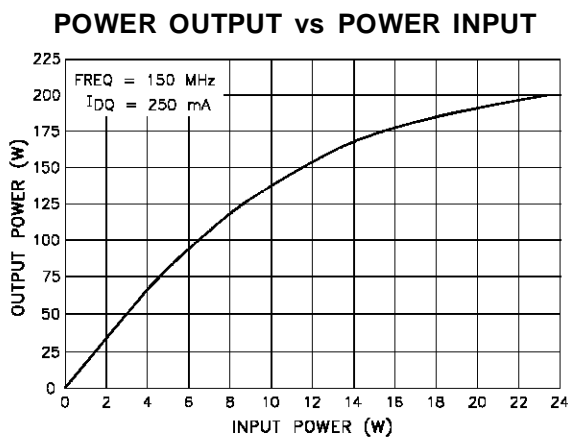
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
V _{(BR)DSS}	V _{GS} = 0 V	I _D = 100 mA	125	—	—	V
I _{DSS}	V _{DS} = 50 V	V _{GS} = 0 V	—	—	5	mA
I _{GSS}	V _{GS} = 20 V	V _{DS} = 0 V	—	—	1	μA
V _{DS(on)}	V _{GS} = 10 V	I _D = 10 A	—	—	5	V
G _{FS}	V _{DS} = 10 V	I _D = 5 A	3	—	—	mhos
C _{iSS}	V _{DS} = 50 V	V _{GS} = 0 V	F = 1 MHz		500	pF
C _{oSS}	V _{DS} = 50 V	V _{GS} = 0 V	F = 1 MHz		250	pF
C _{rSS}	V _{DS} = 50 V	V _{GS} = 0 V	F = 1 MHz		50	pF
V _{GS(TH)}	V _{DS} = 10 V	I _D = 100 mA	1	—	5	V

DYNAMIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
P _{OUT}	V _{DS} = 50 V	I _{DQ} = 250 mA f = 150 MHz	150	—	—	W
η _D	V _{DS} = 50 V	P _{OUT} = 150 W I _{DQ} = 250 mA f = 150 MHz	45	—	—	%
G _{PS}	V _{DS} = 50 V	P _{OUT} = 150 W I _{DQ} = 250 mA f = 150 MHz	8.0	—	—	dB
IMD ₃ *	V _{DS} = 50 V	P _{OUT} = 150 W I _{DQ} = 250 mA f = 30 MHz	—	-30	—	dB

* 2 Tones, Δf = 1 kHz

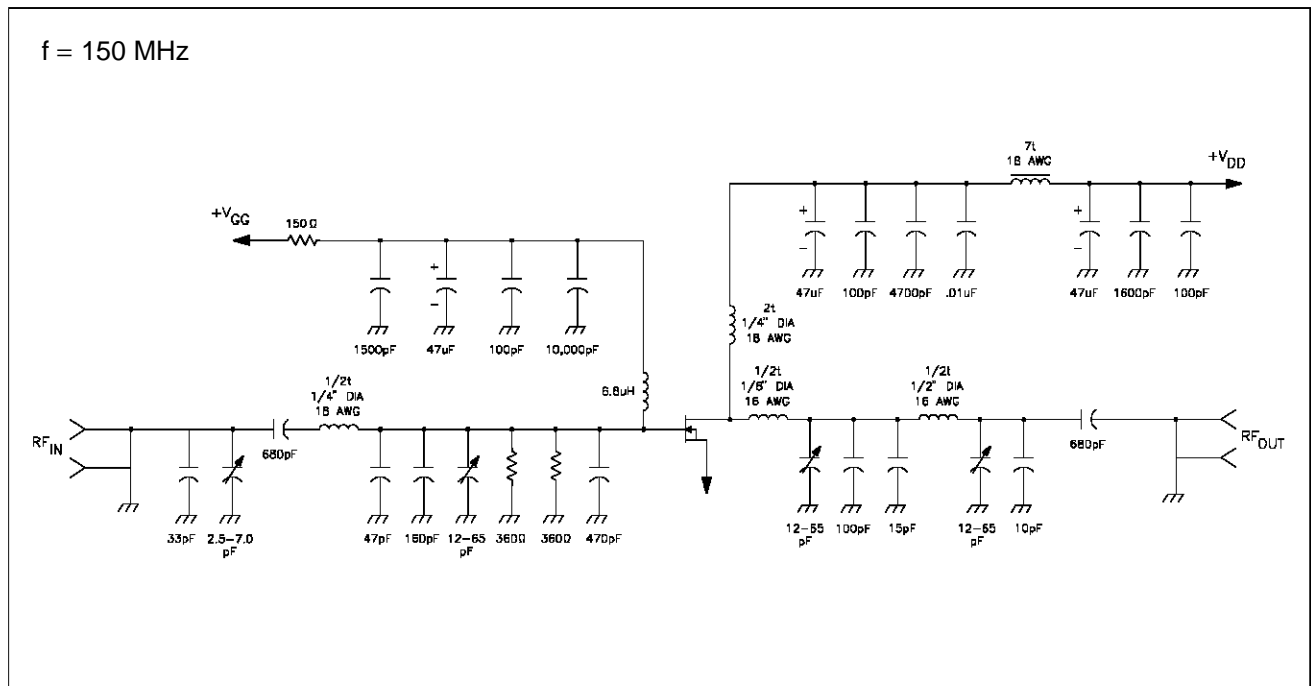
TYPICAL PERFORMANCE



IMPEDANCE DATA

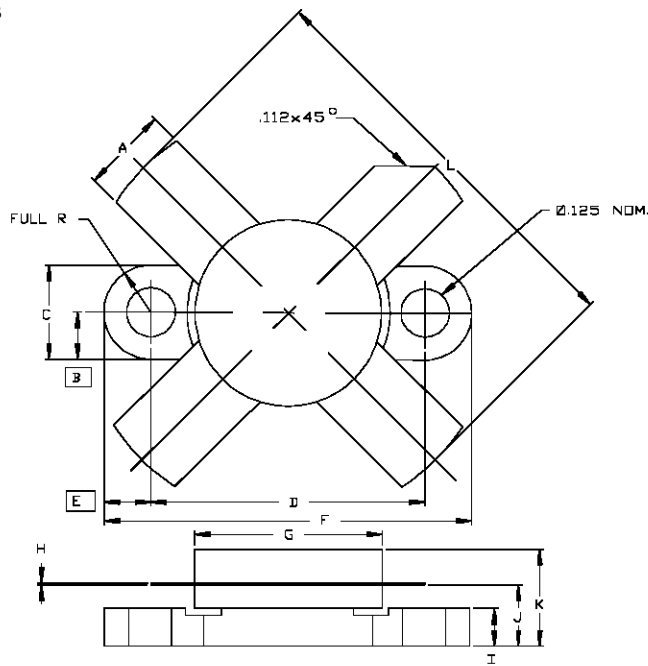
FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
150 MHz	$1.2 - j 1.4$	$2.2 + j 2.3$

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0174 rev. B
UDCS. No. 1011000



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84	K		.280/7,11
B	.125/3,18		L		1.050/26,67
C	.245/6,22	.255/6,48			
D	.720/18,28	.730/18,54			
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			
I	.090/2,29	.110/2,79			
J	.155/3,94	.175/4,45			

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