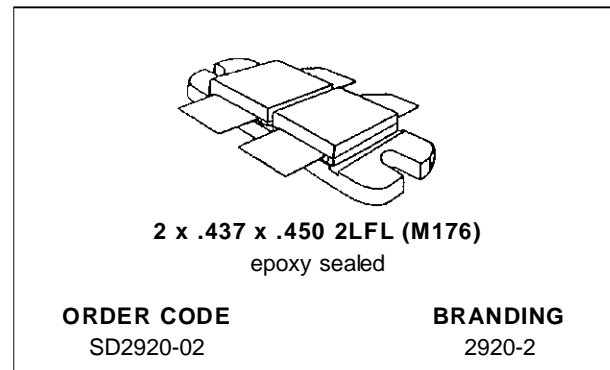


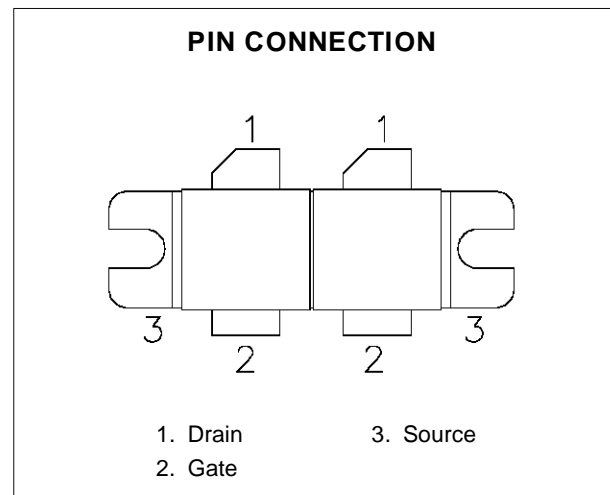
RF MOS FIELD EFFECT TRANSISTORS HF/VHF APPLICATIONS

- 2 - 200 MHz
- 50 VOLTS
- IMD – 30dB
- CLASS AB
- GOLD METALLIZATION FOR HIGH RELIABILITY
- DESIGNED FOR LINEAR OPERATION
- WIDEBAND TUNING
- SIMPLE BIAS CIRCUITRY
- COMMON SOURCE CONFIGURATION
- P_{OUT} = 300 W MIN. WITH 8.0 dB GAIN



DESCRIPTION

The SD1920-02 is a gold metallized N-Channel MOS field-effect RF power transistor. The SD1920-02 is intended for used in 50 V dc large signal applications up to 200 MHz.



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

Symbol	Parameter	Value (per side)	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	27.8	A
P _{DISS}	Power Dissipation	430	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	0.35	°C/W
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ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

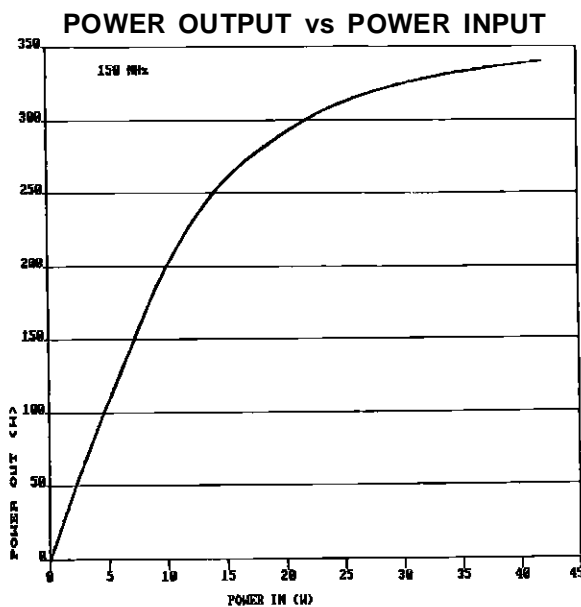
Symbol	Parameter		Value			Unit
			Min.	Typ.	Max.	
V _{(BR)DSS}	V _{GS} = 0V	I _D = 100mA	125	—	—	V
I _{DSS}	V _{DS} = 50V	V _{GS} = 0V	—	—	5	mA
I _{GSS}	V _{GS} = 20V	V _{DS} = 0V	—	—	1	μA
V _{DS(on)}	V _{GS} = 10V	I _D = 10A	—	—	5	V
G _{FS}	V _{DS} = 10V	I _D = 5A	3	—	—	mhos
C _{ISS}	V _{DS} = 50V	V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

All DC Static Parameters Tested Per Side.

DYNAMIC

Symbol	Parameter		Value			Unit
			Min.	Typ.	Max.	
P _{OUT}	V _{DS} = 50 V	I _{DQ} = 2 x 250 mA f = 150 MHz	300	—	—	W
η _D	V _{DS} = 50 V	I _{DQ} = 2 x 250 mA f = 150 MHz	45	—	—	%
G _{PS}	V _{DS} = 50 V	I _{DQ} = 2 x 250 mA f = 150 MHz	8.0	—	—	dB

TYPICAL PERFORMANCE



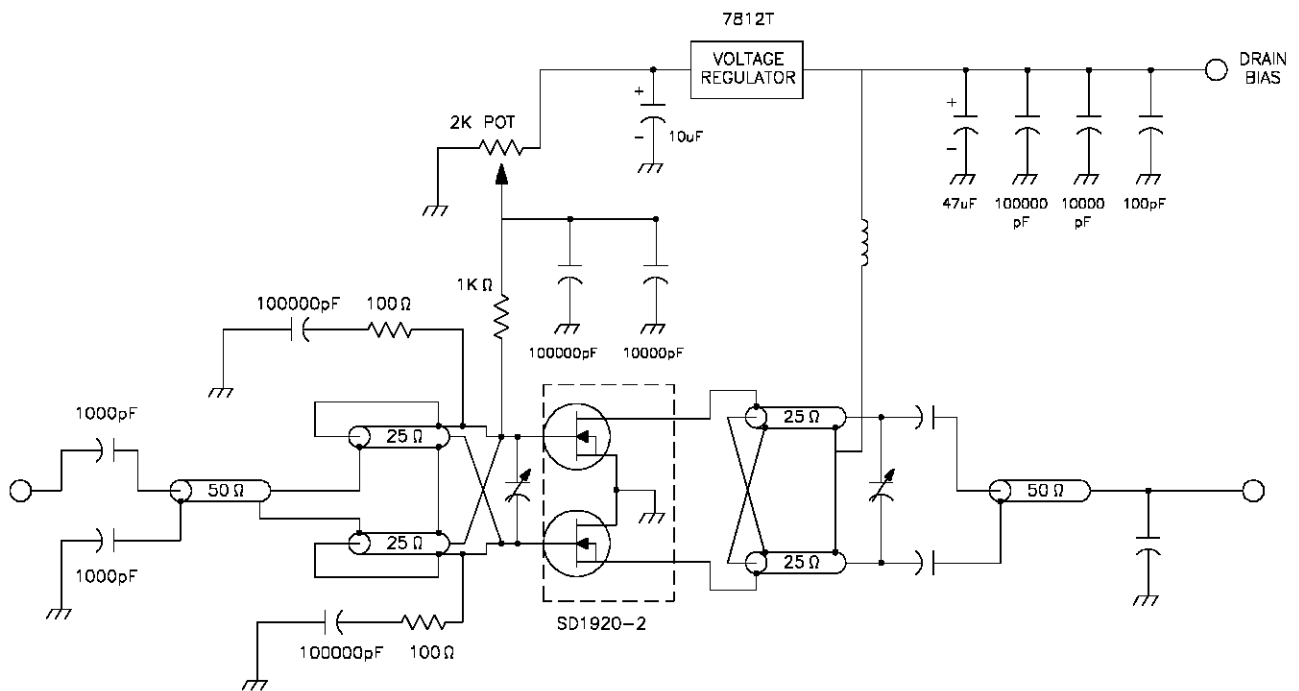
IMPEDANCE DATA

FREQ.	$Z_{IN} (\Omega)^*$	$Z_{CL} (\Omega)^{**}$
150 MHz	$1.2 - j 0.1$	$3.3 + j 4.7$

* Gate to Gate

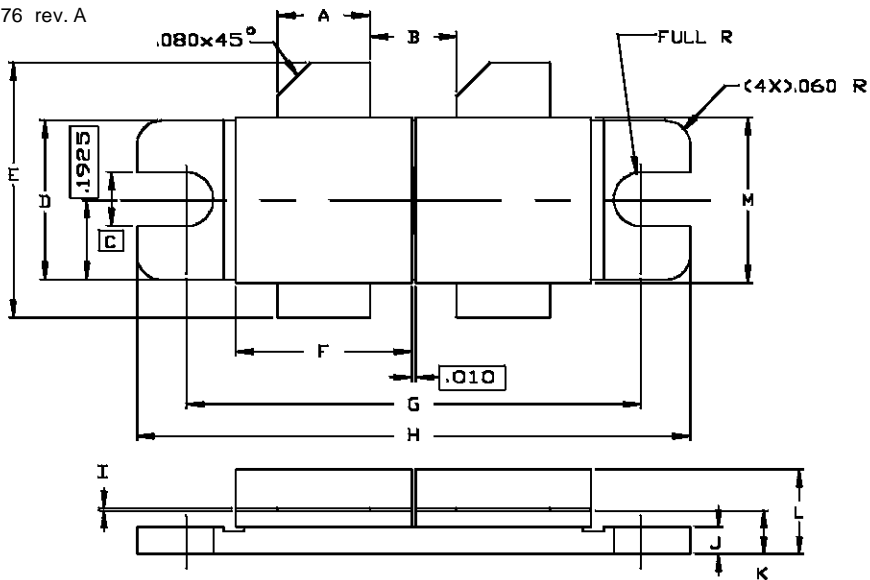
** Drain to Drain

TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0176 rev. A



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	.100/2,54	.115/2,92
B	.210/5,33		L		.230/5,84
C	.125/3,18		M	.395/10,03	.405/10,29
D	.380/9,65	.390/9,91			
E	.580/14,73	.620/15,75			
F	.420/10,67	.430/10,93			
G	1.090/27,69	1.105/28,07			
H	1.335/33,91	1.345/34,16			
I	.003/0,08	.007/0,18			
J	.060/1,52	.070/1,78			

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