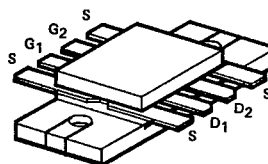


DV28120V

N-Channel Enhancement-Mode Push-Pull RF MOSPOWER

175 MHz 120W
28-35V 10 dB

V Package



.400 Push-Pull Flange

FEATURES

- 20:1 VSWR
- No Thermal Runaway
- Broadband Capability
- Class A, B, C
- Low Noise Figure
- High Dynamic Range
- Simple Bias Circuitry

ABSOLUTE MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

Gate-Source Voltage	20V	Total Device Dissipation	240W
Drain-Source Voltage	70V	Thermal Resistance, Junction to Case . .	0.73°C/W
Drain-Gate Voltage	70V	Junction Temperature	200°C
Drain Current (DC)	12A	Storage Temperature	-55°C to +150°C

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
BV _{DSS}	Drain-Source Breakdown Voltage	70			V	V _{GS} = 0V, I _D = 30 mA
I _{DSS}	Drain-Source Leakage Current			6	mA	V _{GS} = 0V, V _{DS} = 30V
I _{GSS}	Gate-Source Leakage Current			600	nA	V _{GS} = 20V, V _{DS} = 0V
g _m	D.C. Forward Transconductance ¹	1.2	1.8		Mho	V _{DS} = 10V, I _D = 6A, ΔV _{GS} = 1.0V
I _{D(on)}	On-State Drain Current ¹		12		A	V _{DS} = 30V, V _{GS} = 10V
V _{GS(th)}	Gate Threshold Voltage	2		6	V	V _{GS} = V _{DS} , I _D = 600 mA
C _{ISS}	Common-Source Input Capacitance ²			300	pF	V _{GS} = 0V, V _{DS} = 28V, f = 1.0 MHz
C _{OSS}	Common-Source Output Capacitance ²			240	pF	V _{GS} = 0V, V _{DS} = 28V, f = 1.0 MHz
C _{rss}	Reverse Transfer Capacitance ²			35	pF	V _{GS} = 0V, V _{DS} = 28V, f = 1.0 MHz
G _{ps}	Common-Source Power Gain	10			dB	V _{DD} = 28V, P _o = 120W f = 175 MHz, I _{DQ} = 0.6A
η	Drain Efficiency	35	60		%	V _{DD} = 28V, P _o = 120W f = 175 MHz, I _{DQ} = 0.6A
V _{SWR}	Load Mismatch Tolerance	20:1				V _{DD} = 28V, P _o = 120W f = 175 MHz, I _{DQ} = 0.6A

Note 1: Pulse Test—80μs to 300μs, 1% duty cycle
Note 2: All DC and Capacitance parameters measured with both sides in parallel.

FIGURE 1 Transconductance vs. Drain Current

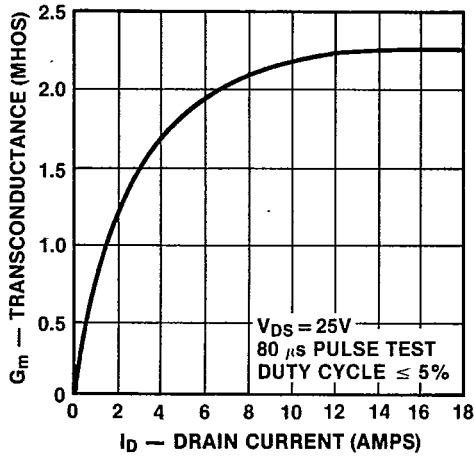


FIGURE 2 Transfer Characteristics

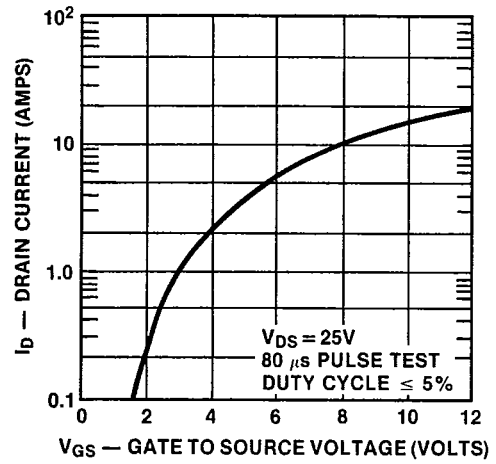


FIGURE 3 Output Characteristics

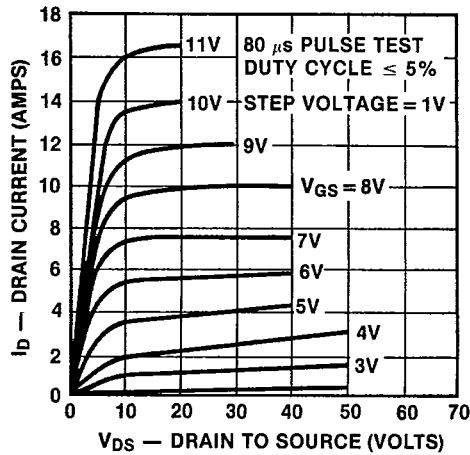


FIGURE 4 DC Safe Operating Region

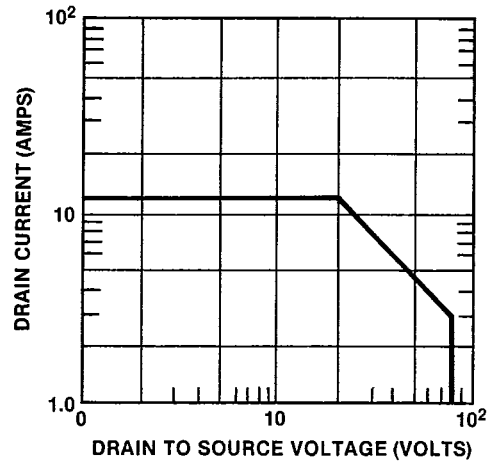


FIGURE 5 MTTF vs. Junction Temperature

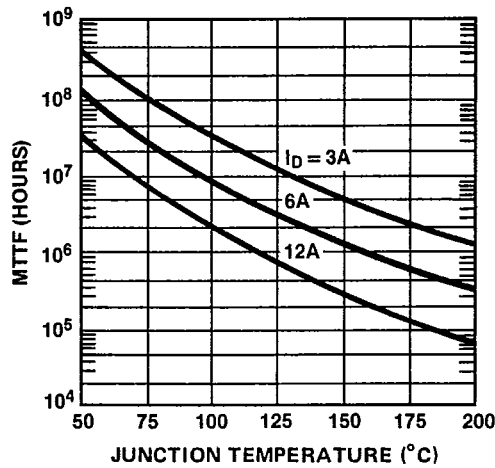


FIGURE 6 Z_{IN} (Series) vs. Frequency (Each Side)

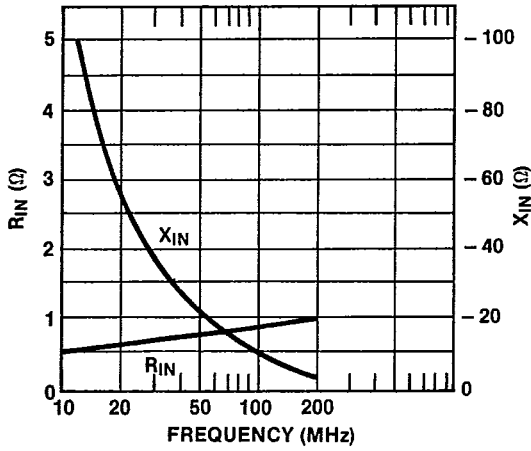
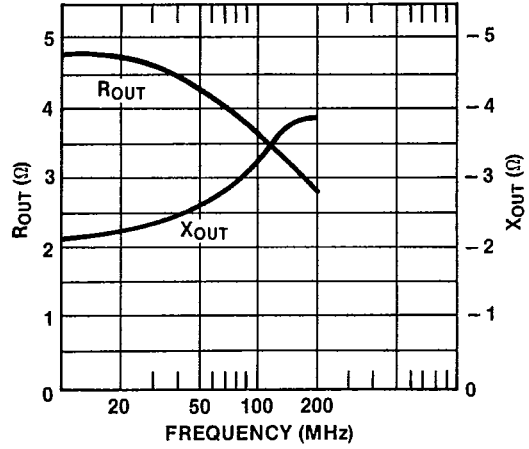


FIGURE 7 Z_{OUT} (Series) vs. Frequency (Each Side)



175 MHz RF TEST FIXTURE

FIGURE 8 DV28120V Test Fixture

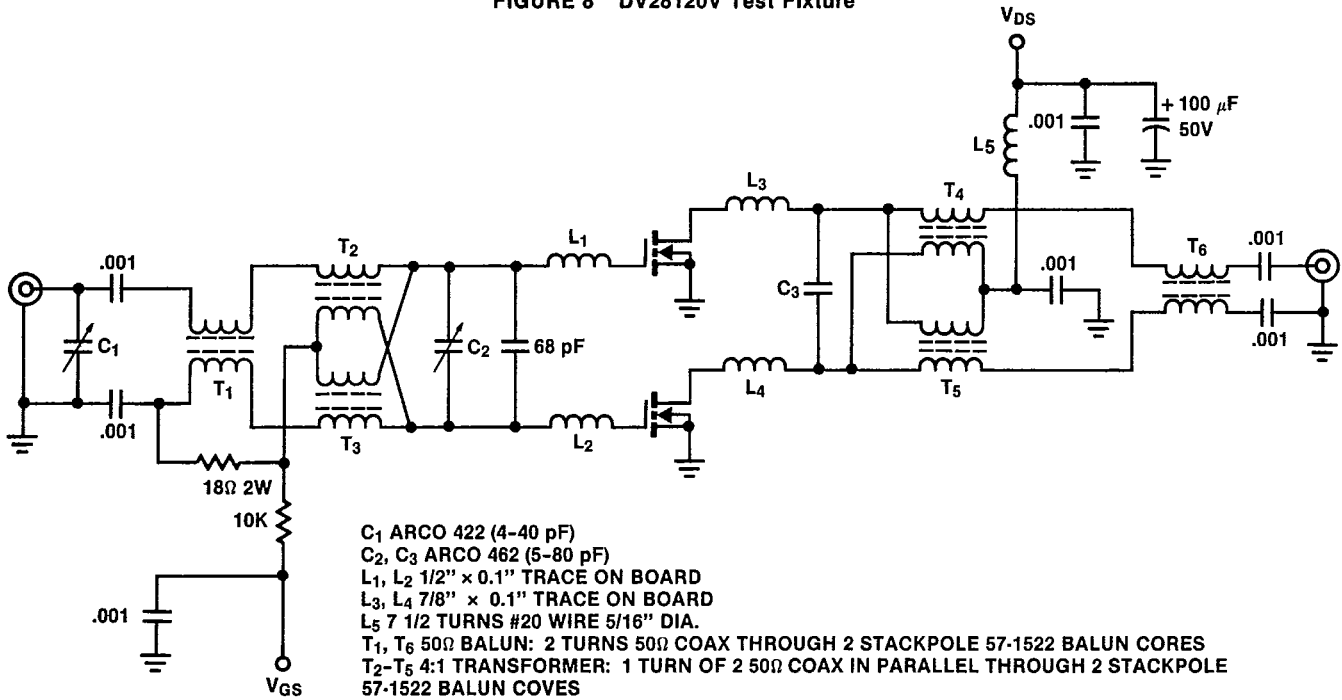
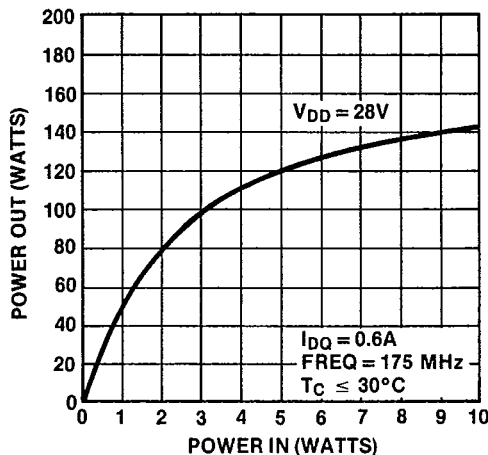


FIGURE 9 Power Out vs. Power In



APPLICATIONS

85 DE 5642205 0000475 7

FIGURE 10 Typical Amplifier Line Up

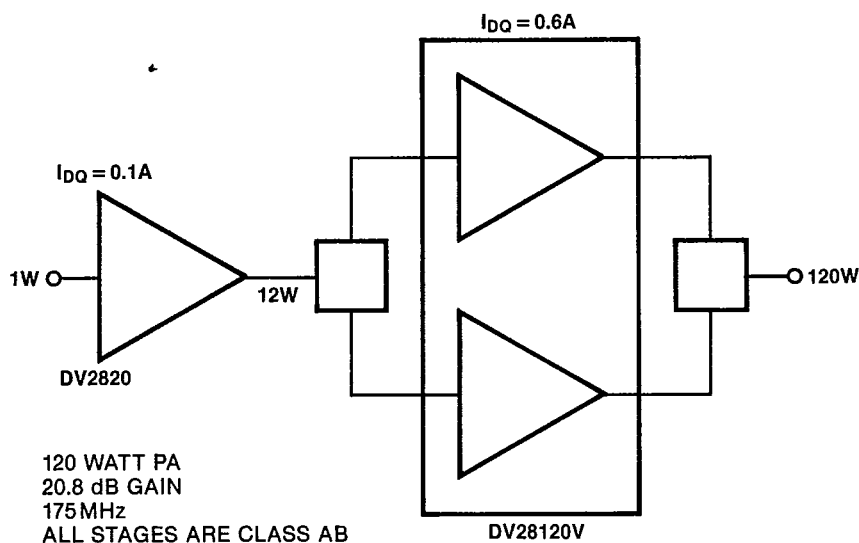
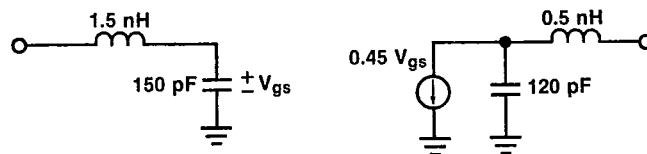


FIGURE 11 Simplified AC Equivalent Circuit Model, Each Half



CAUTION: Beryllium Oxide — the top cap of this device is alumina which is harmless. However the ceramic portion between the leads and the metal flange is Beryllium Oxide, the dust of which is toxic. Care must therefore be taken during handling and mounting the device to prevent any damage to this area.

Steps must be taken to ensure that all those who may handle, use, or dispose of this device are aware of its nature and of these necessary safety precautions. In particular the transistor should never be thrown out with general industrial or domestic waste.