TRW

RF Power Modules

- 140-175 MHz
- ∞ VSWR at 16 V


MVM

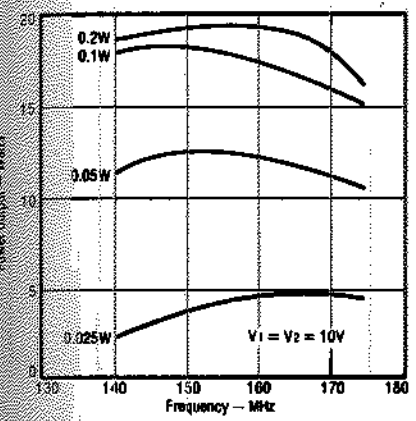
The MV modules are rugged power amplifier functions designed for battery powered mobile and marine applications in the 140-175 MHz band. The modules feature 50 Ω input and output impedances, highly repeatable broadband gain, and will withstand infinite load VSWR at 16 volts with overdrive and uncontrolled output power (typically more than 40 watts).

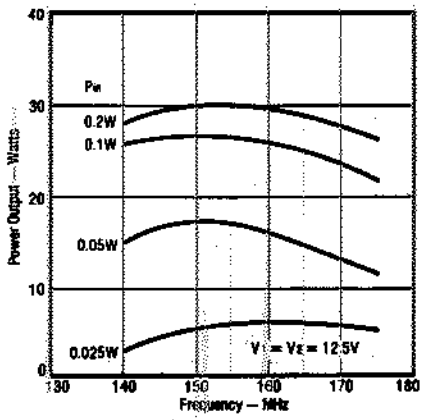
Compared to discrete components, these modules offer significant savings in size as well as cost of design, production and repair.

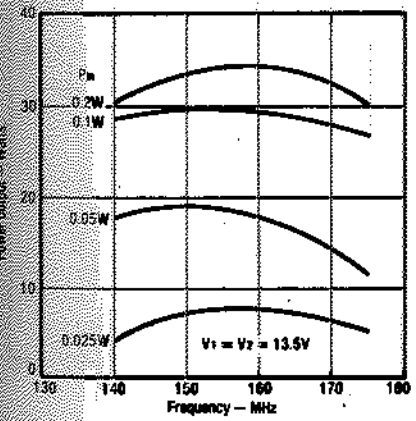
Electrical Characteristics (T_{flange} = 25 °C)

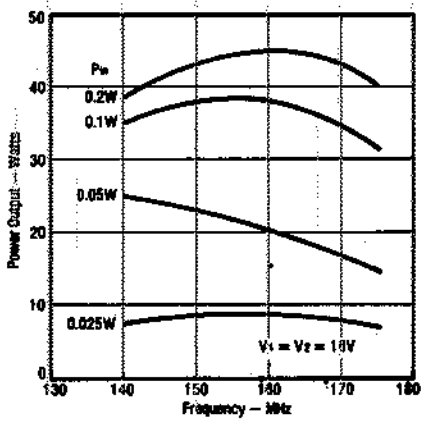
Characteristic	Test Conditions	MV20	MV30	Unit Limit
Frequency Range		140-175	150-160	MHz
Supply Voltage, V_{CC}		12.5	13.5	Vdc, Nom.
Power Output	Rated V_{CC} Any In-Band Frequency $P_{IN} \leq 0.2$ W	20	30	W, Min.
Efficiency	Rated P_O, V_{CC}	40	45	%, Min.
Harmonic Outputs	Rated P_O, V_{CC}	−35	−40	dB, Max.
Input Return Loss	Z_O = 50 Ω	−10	−10	dB, Max.
Output Impedance		50	50	Ω, Nom.
Quiescent Current	V_{CC} = 16 V, P_{IN} = 0 W	0.1	0.1	Adc, Max.
Power Slump	Rated P_O, V_{CC} 25 °C −30 °C to +80 °C	1.0	1.0	dB, Max.
Load VSWR, 0-360° (Degradation)	V_{CC} = 16 V, $P_{IN} \leq 0.3$ W Lowest Frequency P_{OUT} = 30 W Max.	20:1	20:1	N_G Degradation
Load VSWR, 0-360° (Stability)	10 V ≤ V_{CC} ≤ 16 V 0 < $P_{IN} \leq 0.3$ W Any In-Band Frequency	3:1	3:1	Min.

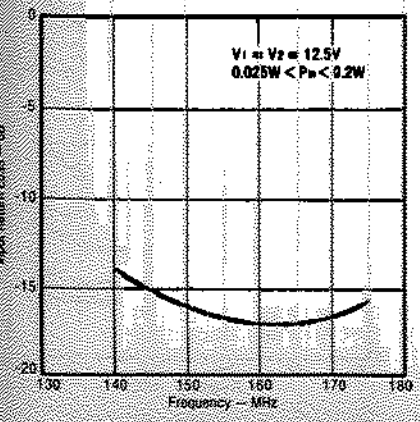
TYPICAL CHARACTERISTICS

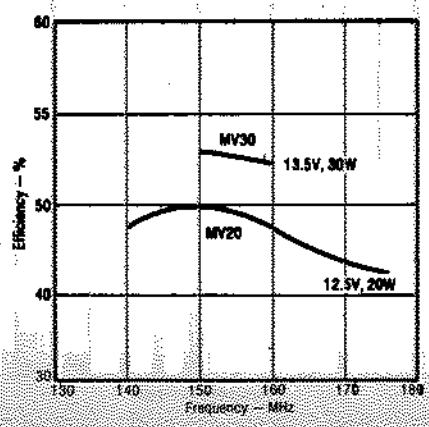


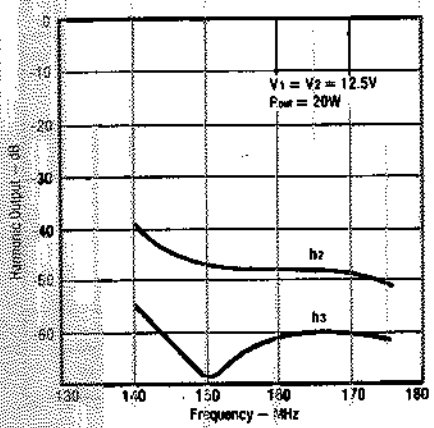


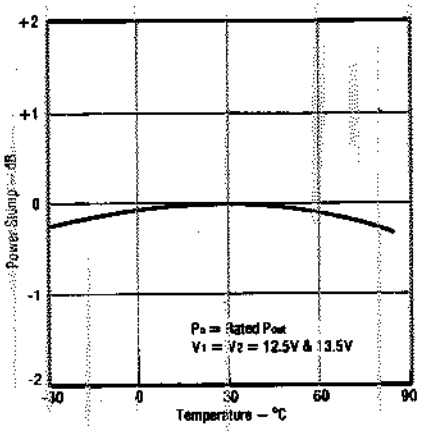


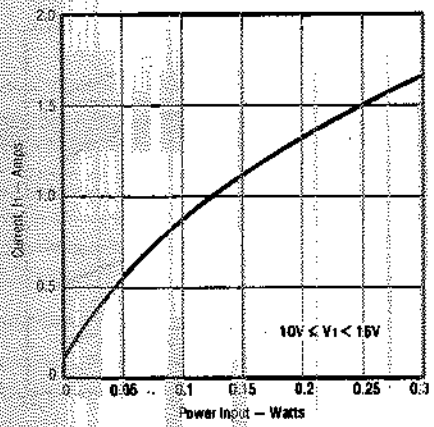


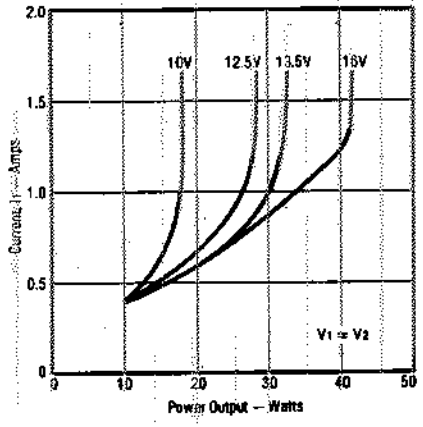


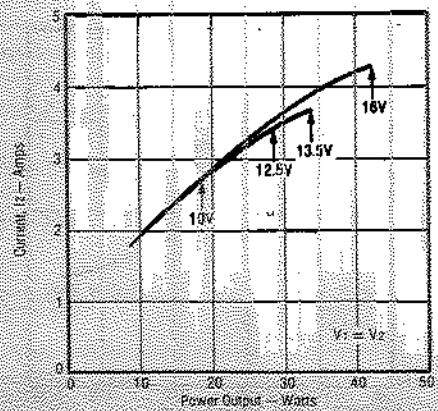


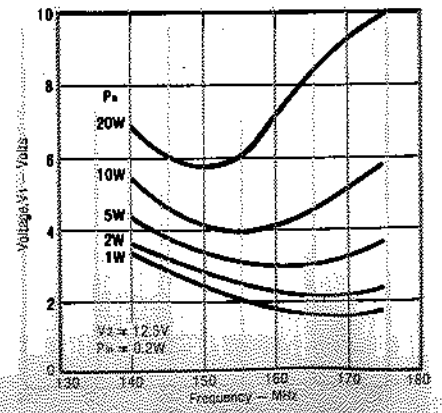






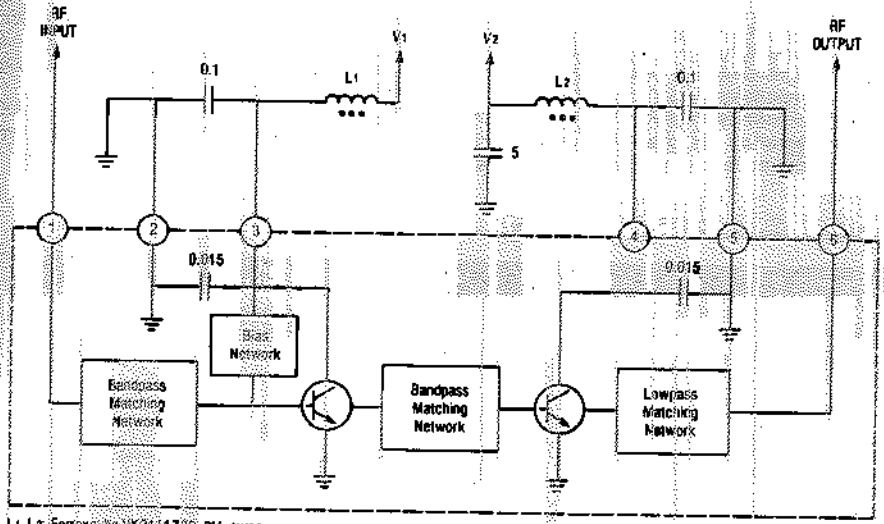






B

CIRCUIT DIAGRAM FOR MV 20 AND MV 30



L1, L2: Ferroxcube VK211736, 2½ turns
All capacitor values in μF