

# Phase Modulators

# Mini-Circuits

B-77-09

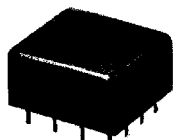
T-77-09

SCIENTIFIC/ MINI-CIRCUITS

QPSK

case style selection

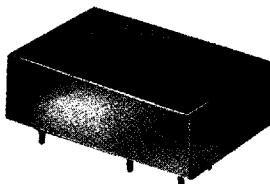
outline drawings see Table of Contents



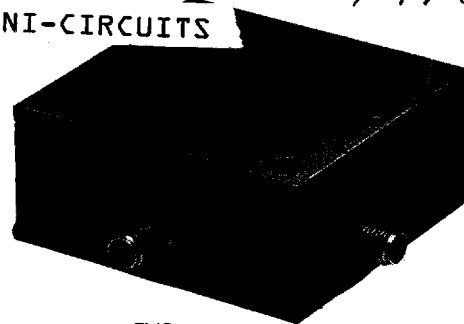
GMC



FPQ



PMQPW  
PMQ



ZMQ

MODEL NO.	FREQ. (MHz)	INSERTION LOSS dB		AMPLITUDE UNBAL., dB		PHASE UNBAL., DEG (±)		1 dB COMPRESSION dBm	VSWR TYP.		PRICE \$	DISTRIBUTOR		
		TYP.	MAX.	TYP.	MAX.	TYP.	MAX.		TYP	IN		OUT	Qty. (1-9)	FACTORY
GMC case C07	GMC-100	50-100	5.6	7.5	0.2	0.8	3	6	4	1.5:1	1.9:1	128.95	●	
	GMC-170	90-170	5.6	7.5	0.3	0.8	3	6	4	1.3:1	1.5:1	128.95	●	
	GMC-1050	800-1050	5.5	7.5	0.5	1.0	3	7	4	2.0:1	2.0:1	119.95	●	
PMQ case AAA118	PMQ-94	47-94	5.5	7.0	0.4	1.2	3	5	4	1.7:1	1.7:1	119.95	●	
	PMQ-330	200-330	5.8	8.0	0.4	1.5	3	6	4	1.5:1	1.5:1	119.95	●	
	PMQ-440	240-440	5.9	8.0	0.5	1.8	3	7	4	1.5:1	1.5:1	119.95	●	
FPQ case FFF122	FPQ-76	60-90	5.4	7.0	0.1	0.9	2	5	4	1.5:1	1.7:1	149.95	●	
	FPQ-331	205-331	6.0	8.0	0.6	1.5	3	6	4	1.4:1	1.7:1	149.95	●	
	FPQ-440	240-440	6.2	8.0	0.5	1.5	4	6	4	1.4:1	1.7:1	149.95	●	
	FPQ-475	421-475	6.8	8.0	0.8	1.5	3	6	4	1.7:1	1.7:1	149.95	●	
*PMQPW case AAA118	PMQPW-150	30-150	6	10.5	0.4	0.9	3	8	4	2:1	2:1	172.95	●	
	PMQPW-250	50-250	6.5	10.5	0.5	1.2	3	8	4	1.7:1	1.4:1	172.95	●	
†ZMQ case HH141	ZMQ-1050	800-1050	5.5	7.5	0.5	1.0	3	7	4	2.0:1	2.0:1	169.95	●	

NOTES:

- All data taken @ control current ±20 mA
  - Control ports drive with 50 ohms source.
  - Refer to Table of Contents for quality control procedures, environmental specifications and absolute maximum ratings.
  - Prices and specifications subject to change without notice.
- \* Protected under Patent No. 4,673,898  
 † Available only with SMA connectors

PHASE SHIFT VS. CONTROL CURRENT

CONT.-1 (mA)	CONT.-2 (mA)	PHASE SHIFT (Deg.)
+20	+20	0 (REF)
+20	-20	90
-20	-20	180
-20	+20	270

features

- octave & multi-octave bandwidth
- good phase & amplitude balance
- hermetically sealed metallic enclosure with bent leads or plug-in version.
- capable of meeting MIL-M-28837 requirements

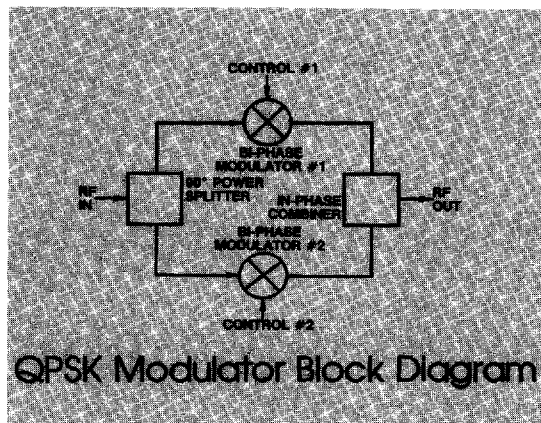
pin configuration

Series	GMC		PMQ & PMQPW	FPQ	ZMQ
	.100 .170	.1050			
RF IN	13	13	8	1	3
RF OUT	1	2	4	8	1
CONTROL-1	5	4	2	5	4
CONTROL-2	8	1	6	10	2
GND ♦	9,12,16	—	—	—	—
CASE GND	3,4,6,7,10	3,5,6,7,8	1,3,5,7	2,3,4,6,7,9	11,12,13,14
	11,14,15	10,11,14,15	—	—	—
NOT USED	2	9,12,16	—	—	—

♦ Ground externally. All measurements made with GND pin(s) grounded externally.

maximum ratings:

Input Power 100 mW  
 Control Current +40 mA  
 Temperature -55°C to 100°C



QPSK Modulator Block Diagram

In Stock...Immediate Delivery

