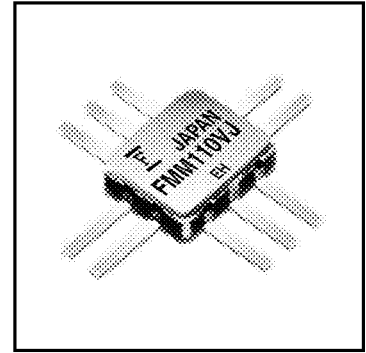


# FMM110VJ

GaAs MMIC

## FEATURES

- Operation to 10 GHz
- Input Frequency divide by 8, OUT and  $\overline{\text{OUT}}$
- -5V (or+5V) DC Single Power Supply
- External 50 ohm Load Driving Capability
- Small 10 pin Hermetic SMT-10 Package (VJ)
- Tape and Reel available



## DESCRIPTION

The FMM110VJ is a GaAs Microwave Static Frequency Divider designed for dividing an input signal by 8 over a frequency range from 2.0 to 10 GHz. This part is designed for Microwave Frequency Synthesizer and Phase-Locked Oscillator applications.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

## ABSOLUTE MAXIMUM RATINGS (Ambient Temperature $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Supply Voltage	$V_{SS}$	-7.0 to 0	V
Input Voltage	$V_{in}$	$V_{SS}$ to 0	V
Input Power	$P_{in}$	+13.0	dBm
Storage Temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$
Power Dissipation	$P_D$	1.0	W

## RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Limit			Unit
		Min.	Typ.	Max.	
Supply Voltage	$V_{SS}$	-5.5	-5.0	-4.5	V
Ambient Temperature	$T_a$	-30	-	+70	$^\circ\text{C}$

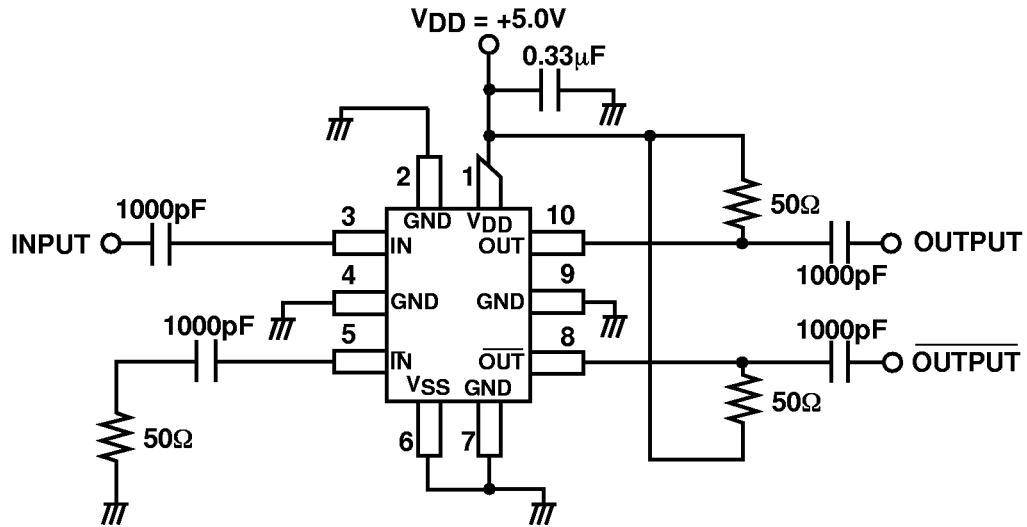
## ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a = 25^\circ\text{C}$ , $V_{SS} = -5.0\text{V}$ )

Parameter	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Power Supply Current	$I_{SS}$		-	120	-	mA
Operating Frequency	$f_{in}$	$P_{in} = 0\sim 10\text{dBm}$	2.0	-	10.0	GHz
Output Power	$P_o$		0	4	-	dBm

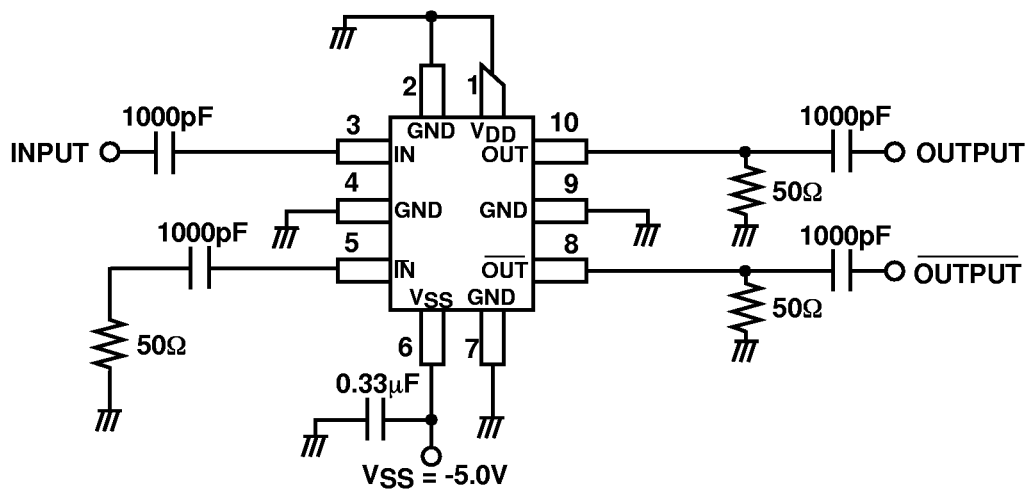
CASE STYLE: VJ

### Test Circuit

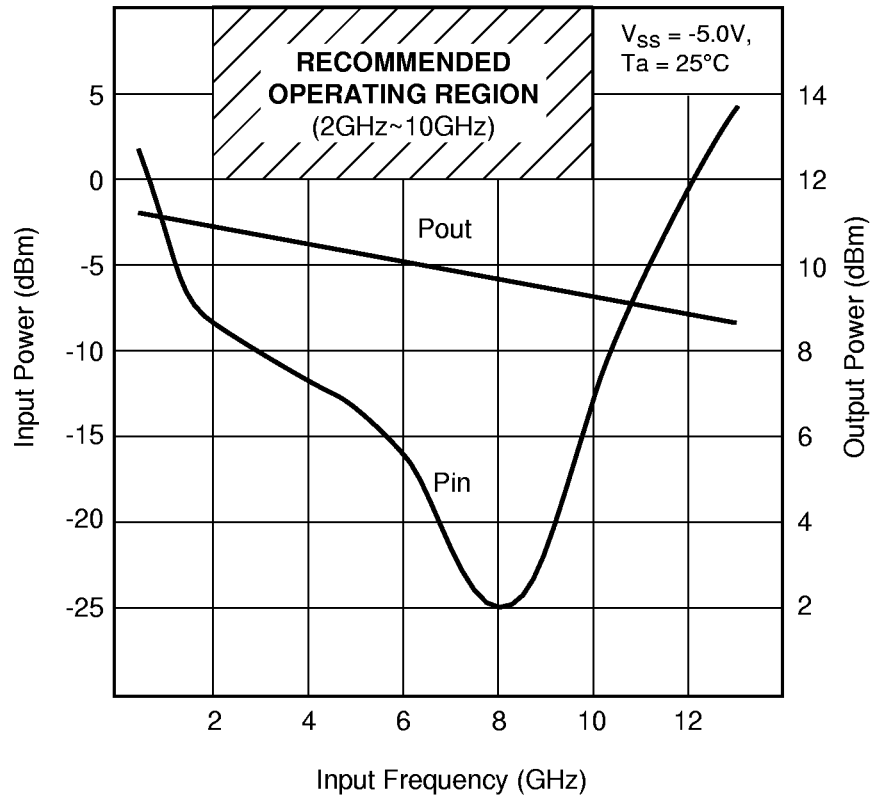
Positive Supply Voltage  
 $V_{DD} = +5V$  Operation Circuit



Negative Supply Voltage  
 $V_{SS} = -5V$  Operation Circuit



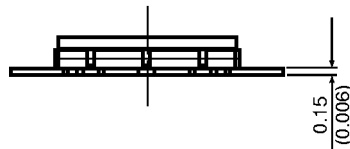
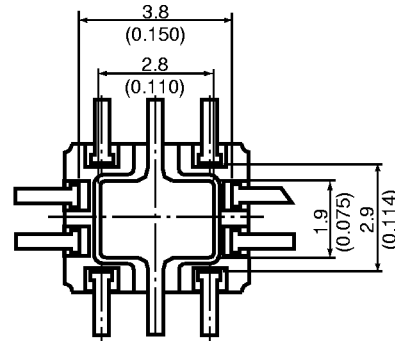
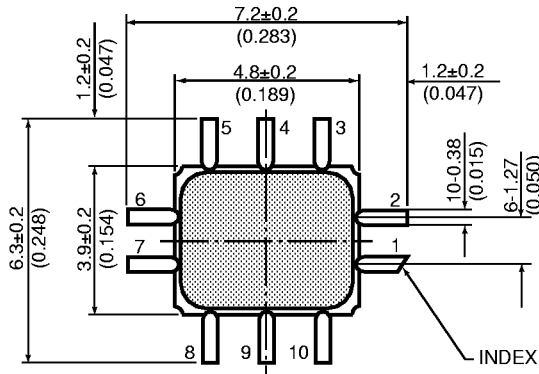
**INPUT SENSITIVITY CHARACTERISTICS**



# FMM110VJ

GaAs MMIC

## Case Style "VJ"



### LEAD ASSIGNMENT

Lead	Symbol	Lead	Symbol
1.	VDD	6.	Vss
2.	GND	7.	GND
3.	IN	8.	OUT
4.	GND	9.	GND
5.	IN	10.	OUT

Unit: mm(inches)

For further information please contact:

**FUJITSU COMPOUND SEMICONDUCTOR, INC.**  
 2355 Zanker Rd.  
 San Jose, CA 95131-1138, U.S.A.  
 Phone: (408) 232-9500  
 FAX: (408) 428-9111  
 www.fcsi.fujitsu.com

**FUJITSU MICROELECTRONICS, LTD.**  
 Compound Semiconductor Division  
 Network House  
 Norreys Drive  
 Maidenhead, Berkshire SL6 4FJ  
 Phone: +44 (0)1628 504800  
 FAX: +44 (0)1628 504888

### CAUTION

Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

Fujitsu Limited reserves the right to change products and specifications without notice. The information does not convey any license under rights of Fujitsu Limited or others.

© 1998 FUJITSU COMPOUND SEMICONDUCTOR, INC.

Printed in U.S.A. FCSI0598M200

