


**MOTOROLA**

# MC12089

## 2.8 GHz Prescaler

The MC12089 is a single modulus divide by 64 and 128 prescaler for low power frequency division of a 2.8 GHz high frequency input signal. The low power (10.2 mA typical at 5.0 V) and high operating frequency features make this prescaler ideal in satellite TV receiver applications.

Divide ratio control input SW selects the required divide ratio of ÷64 or ÷128.

On-chip output termination provides 2.5 mA of output current to drive a 12 pF (typical) high impedance load. The output voltage swing under typical supply voltage and temperature conditions is 1.2 V. If additional drive is required for the prescaler output, an external resistor can be added in parallel from the OUT pin to Gnd to increase the output power. Care must be taken not to exceed the maximum allowable current through the output.

- 2.8 GHz Toggle Frequency
- Supply Voltage 4.5 to 5.5 V
- Low Power Dissipation 51 mW Typical
- Operating Temperature Range of -40 to 85°C

### FUNCTIONAL TABLE

SW	Divide Ratio
H	64
L	128

NOTE: H = V<sub>CC</sub>; L = Open.

### MAXIMUM RATINGS

Characteristic	Symbol	Range	Unit
Power Supply Voltage, Pin 4	V <sub>CC</sub>	-0.5 to 7.0	Vdc
Operating Temperature Range	T <sub>A</sub>	-40 to 85	°C
Storage Temperature Range	T <sub>stg</sub>	-65 to 150	°C
Maximum Output Current, Pin 7	I <sub>O</sub>	4.0	mA

NOTE: ESD data available upon request.

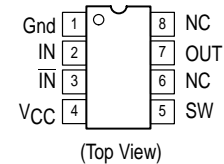
## MECL PLL COMPONENTS ÷64/128 PRESCALER

### SEMICONDUCTOR TECHNICAL DATA



**D SUFFIX**  
PLASTIC PACKAGE  
CASE 751  
(SO-8)

### PIN CONNECTIONS

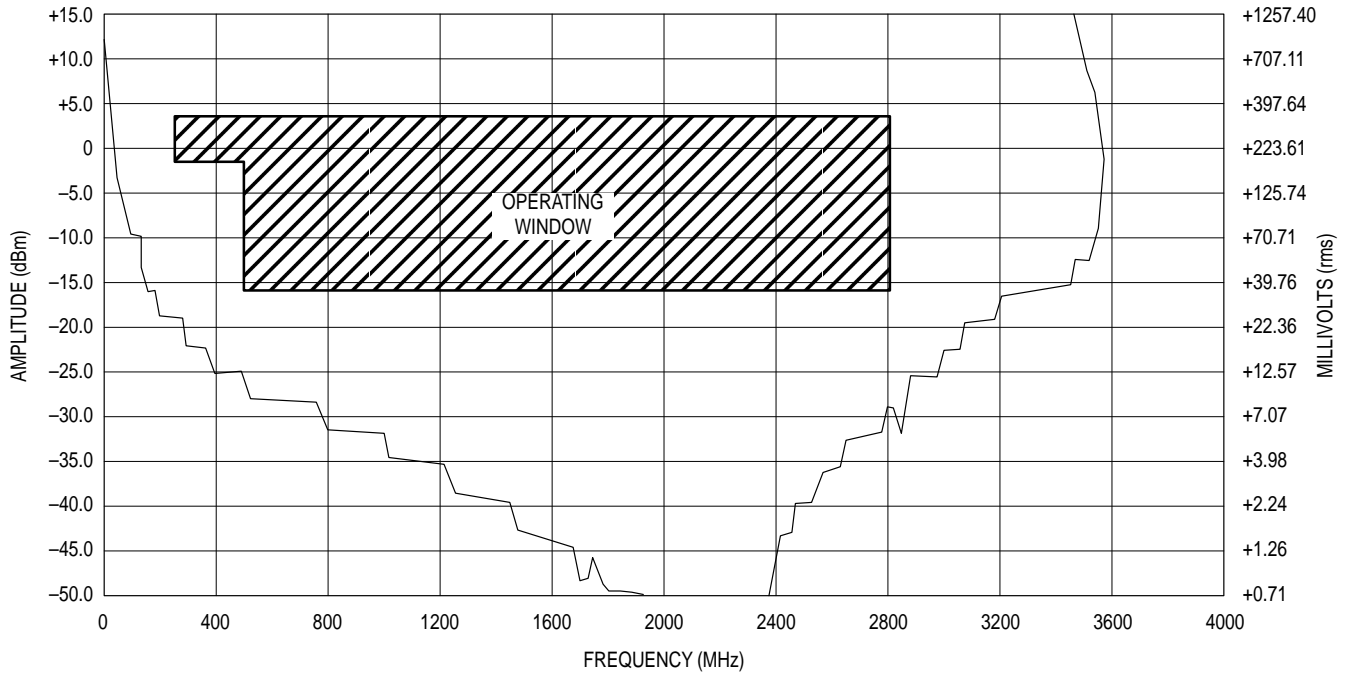


### ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC12089D	T <sub>A</sub> = -40 to 85°C	SO-8



Figure 3. Input Signal Amplitude versus Input Frequency

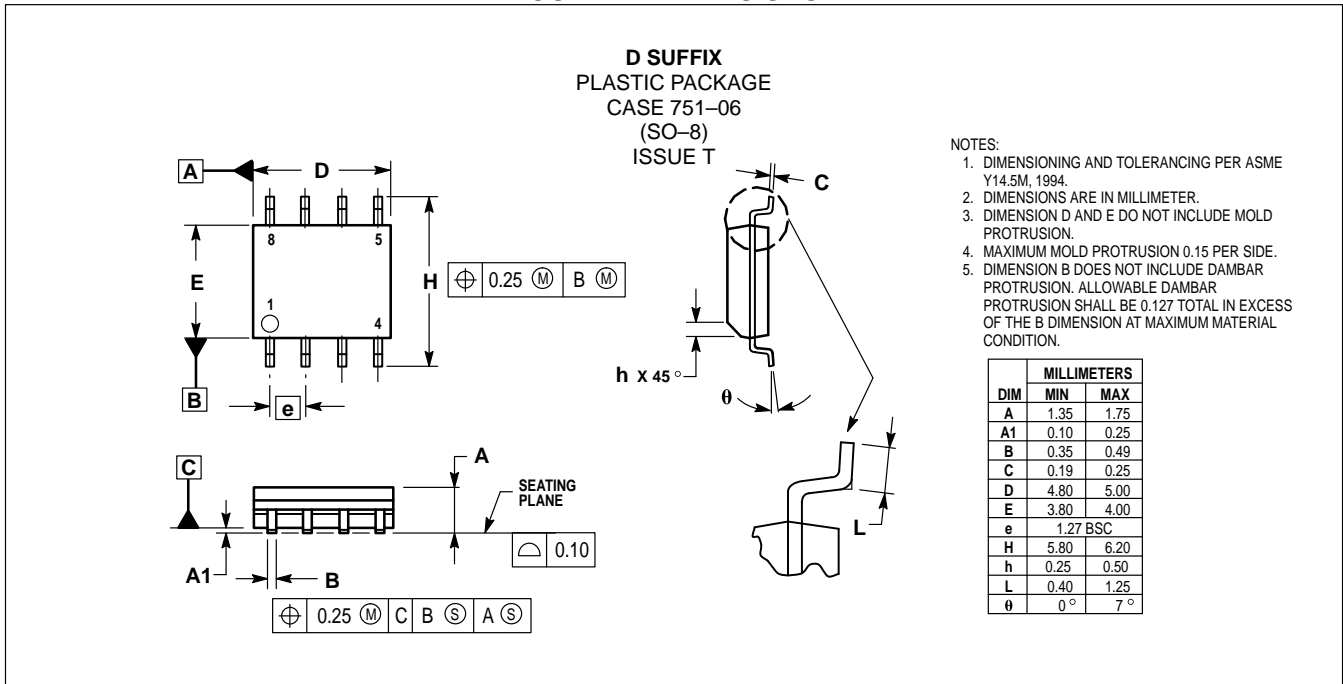


Divide Ratio = 64; V<sub>CC</sub> = 5.0 V; T<sub>A</sub> = 25°C

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