

# MC145159-1

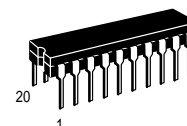
## Serial-Input PLL Frequency Synthesizer with Analog Phase Detector

### Interfaces with Dual-Modulus Prescalers

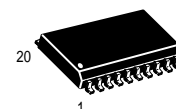
The MC145159-1 has a programmable 14-bit reference counter, as well as fully programmable divide-by-N/divide-by-A counters. The counters are programmed serially through a common data input and latched into the appropriate counter latch, according to the last data bit (control bit) entered.

When combined with a loop filter and VCO, this device can provide all the remaining functions for a PLL frequency synthesizer operating up to the device's frequency limit. For higher VCO frequency operations, a down mixer or a dual-modulus prescaler can be used between the VCO and the PLL.

- Operating Temperature Range: -40 to 85°C
- Low Power Consumption Through Use of CMOS Technology
- 3.0 to 9.0 V Supply Range
- On- or Off-Chip Reference Oscillator Operation
- Compatible with the Serial Peripheral Interface (SPI) on CMOS MCUs
- $\div R$  Range = 3 to 16383
- $\div N$  Range = 16 to 1023,  $\div A$  Range = 0 to 127
- High-Gain Analog Phase Detector
- See Application Note AN969



**P SUFFIX**  
PLASTIC DIP  
CASE 738



**DW SUFFIX**  
SOG PACKAGE  
CASE 751D

**VF SUFFIX**  
SSOP  
CASE TBD

#### ORDERING INFORMATION

MC145159P1	Plastic DIP
MC145159DW1	SOG Package
MC145159VF1	SSOP

**NOT RECOMMENDED FOR NEW DESIGNS;  
PRODUCT TO BE PHASED OUT.**  
Please see the MC14519X and MC14520X series.


#### PIN ASSIGNMENTS

##### PLASTIC DIP AND SOG PACKAGE

R <sub>O</sub>	1	20	R <sub>R</sub>
OSC <sub>in</sub>	2	19	V <sub>DD</sub> '
OSC <sub>out</sub>	3	18	C <sub>H</sub>
CHARGE	4	17	APD <sub>out</sub>
V <sub>DD</sub>	5	16	V <sub>SS</sub> '
FSO	6	15	C <sub>R</sub>
V <sub>SS</sub>	7	14	SR <sub>out</sub>
MC	8	13	ENB
LD	9	12	DATA
f <sub>in</sub>	10	11	CLK

##### SSOP

V <sub>SS</sub> '	1	20	C <sub>R</sub>
APD <sub>out</sub>	2	19	SR <sub>out</sub>
C <sub>H</sub>	3	18	ENB
V <sub>DD</sub> '	4	17	DATA
R <sub>R</sub>	5	16	CLK
R <sub>O</sub>	6	15	f <sub>in</sub>
OSC <sub>in</sub>	7	14	LD
OSC <sub>out</sub>	8	13	MC
CHARGE	9	12	V <sub>SS</sub>
V <sub>DD</sub>	10	11	FSO

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