

MC145159-1

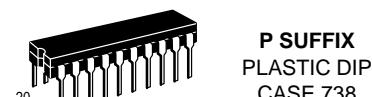
**Serial-Input PLL Frequency
Synthesizer with Analog Phase
Detector**

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**

RO	1•	20	RR
OSC _{in}	2	19	V _{DD} '
OSC _{out}	3	18	C _H
CHARGE	4	17	APD _{out}
V _{DD}	5	16	V _{SS} '
FSO	6	15	C _R
V _{SS}	7	14	SR _{out}
MC	8	13	ENB
LD	9	12	DATA
f _{in}	10	11	CLK

SSOP

V _{SS} '	1•	20	C _R
APD _{out}	2	19	SR _{out}
C _H	3	18	ENB
V _{DD} '	4	17	DATA
R _R	5	16	CLK
RO	6	15	f _{in}
OSC _{in}	7	14	LD
OSC _{out}	8	13	MC
CHARGE	9	12	V _{SS}
V _{DD}	10	11	FSO

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
– <http://sps.motorola.com/mfax/>

HOME PAGE: <http://motorola.com/sps/>

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141,
4-32-1 Nishi-Gotanda, Shagawa-ku, Tokyo, Japan. 03-5487-8488

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

CUSTOMER FOCUS CENTER: 1-800-521-6274