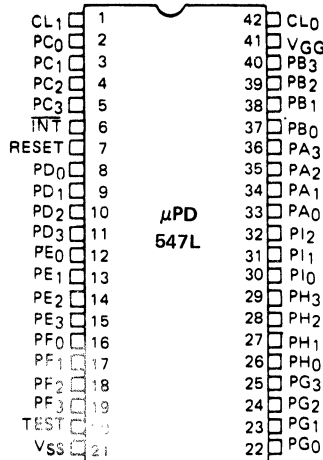


4-BIT SINGLE CHIP MICROCOMPUTER

DESCRIPTION The μPD547L is a μCOM-44 4-bit single chip microcomputer, manufactured with the low power consumption PMOS process, allowing use of a single -8V power supply. The μPD547L provides all of the hardware features of the μCOM-44 family, and executes all 58 instructions of the μCOM-44 instruction set.

PIN CONFIGURATION



PIN NAMES

PA ₀ -PA ₃	Input Port A
PB ₀ -PB ₃	Input Port B
PC ₀ -PC ₃	Input/Output Port C
PD ₀ -PD ₃	Input/Output Port D
PE ₀ -PE ₃	Output Port E
PF ₀ -PF ₃	Output Port F
PG ₀ -PG ₃	Output Port G
PH ₀ -PH ₃	Output Port H
PI ₀ -PI ₂	Output Port I
INT	Interrupt Input
CL ₀ -CL ₁	External Clock Signals
RESET	Reset
VGG	Power Supply Negative
VSS	Power Supply Positive
TEST	Factory Test Pin (Connect to VSS)

ABSOLUTE MAXIMUM RATINGS*

Operating Temperature	-10°C to +70°C
Storage Temperature	-40°C to +125°C
Supply Voltage	-15 to +0.3 Volts
Input Voltages	-15 to +0.3 Volts
Output Voltages	-15 to +0.3 Volts
Output Current (Ports C through I, each bit)	-4 mA
(Total, all ports)	-25 mA

COMMENT: Stress above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

*T_a = 25°C

μ PD547L

$T_a = -10^\circ\text{C}$ to $+70^\circ\text{C}$; $V_{GG} = -8\text{V} \pm 10\%$

DC CHARACTERISTICS

PARAMETER	SYMBOL	LIMITS				TEST CONDITIONS
		MIN	TYP	MAX	UNIT	
Input Voltage High	V_{IH}	0		-1.6	V	Ports A through D, $\overline{\text{INT}}$, RESET
Input Voltage Low	V_{IL}	-3.8		V_{GG}	V	Ports A through D, $\overline{\text{INT}}$, RESET
Clock Voltage High	$V_{\phi H}$	0		-0.6	V	CL_0 Input, External Clock
Clock Voltage Low	$V_{\phi L}$	-5.0		V_{GG}	V	CL_0 Input, External Clock
Input Leakage Current High	I_{LIH}			+10	μA	Ports A through D, $\overline{\text{INT}}$, RESET, $V_I = -1\text{V}$
Input Leakage Current Low	I_{LIL}			-10	μA	Ports A through D, $\overline{\text{INT}}$, RESET, $V_I = -9\text{V}$
Clock Input Leakage Current High	$I_{L\phi H}$			+200	μA	CL_0 Input, $V_{\phi H} = 0\text{V}$
Clock Input Leakage Current Low	$I_{L\phi L}$			-200	μA	CL_0 Input, $V_{\phi L} = -9\text{V}$
Output Voltage High	V_{OH1}			-1.0	V	Ports C through I, $I_{OH} = -1.0\text{mA}$
	V_{OH2}			-2.3	V	Ports C through I, $I_{OH} = -3.3\text{mA}$
Output Leakage Current Low	I_{LOL}			-10	μA	Ports C through I, $V_{O} = -9\text{V}$
Supply Current	I_{GG}		-15	-25	mA	

$T_a = 25^\circ\text{C}$

CAPACITANCE

PARAMETER	SYMBOL	LIMITS			UNIT	TEST CONDITIONS
		MIN	TYP	MAX		
Input Capacitance	C_I			15	pF	f = 1 MHz
Output Capacitance	C_O			15	pF	
Input/Output Capacitance	C_{IO}			15	pF	

$T_a = -10^\circ\text{C}$ to $+70^\circ\text{C}$; $V_{GG} = -8\text{V} \pm 10\%$

AC CHARACTERISTICS

PARAMETER	SYMBOL	LIMITS			UNIT	TEST CONDITIONS
		MIN	TYP	MAX		
Oscillator Frequency	f	100		180	KHz	EXTERNAL CLOCK
Rise and Fall Times	t_r, t_f	0		0.3	μs	
Clock Pulse Width High	$t_{\phi W_H}$	2.0		8.0	μs	
Clock Pulse Width Low	$t_{\phi W_L}$	2.0		8.0	μs	

CLOCK WAVEFORM

