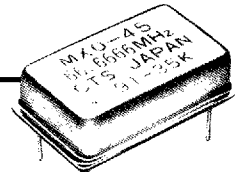
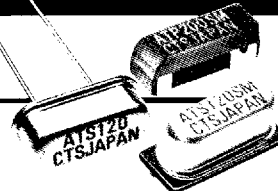
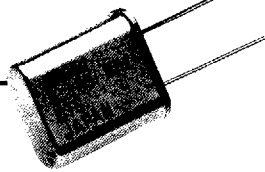


## FREQUENCY CONTROLS

### CRYSTALS

### CLOCK OSCILLATORS

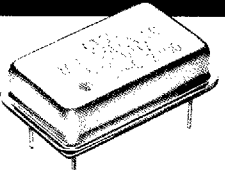
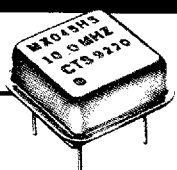


SERIES	MP-MICROPROCESSOR	AT STRIP	MXO 45
Standard Models	—	ATS-ATSSM-ATP	—
Package	HC/49-HC/51	HC/49LP/LP Plastic	14 PIN DIP
Frequency Range	1.00 to 25.00 MHz	3.5 to 24.0 MHz	1.0 to 80 MHz
Frequency Tolerance @ 25° C	±.005% (50 PPM)	±.005% (50 PPM)	—
0° -70° C Tolerance	±.005%	±.005%	±.01% (100 PPM)
Operating Temperature	0° C to +70° C	0° C to +70° C	0° C to +70° C
Duty Cycle	—	—	40/60%
Rise and Fall Time	—	—	TTL 5nS max CMOS 10nS max
Supply Voltage (DC)	—	—	5.0 Volts ±10%
Output Logic	—	—	CMOS/10 TTL

PART NUMBER	FREQ (MHz)	Holder	Corr.
MP010	1.000000	HC/33-51	13 PF
MP018	1.843200	HC/33-51	13 PF
MP018S	1.843200	HC/49	13 PF
MP020	2.000000	HC/33-51	20 PF
MP020S	2.000000	HC/49	20 PF
MP024	2.457600	HC/33-51	32 PF
MP024S	2.457600	HC/49	32 PF
MP030	3.000000	HC/33-51	18 PF
MP032	3.276800	HC/33-51	15 PF
MP036	3.579545	HC/33-51	18 PF
MP036S	3.579545	HC/49	18 PF
MP037	3.686400	HC/49	20 PF
MP040	4.000000	HC/49	20 PF
MP04A	4.000000	HC/49	Series
MP041	4.194304	HC/49	12 PF
MP042	4.915200	HC/49	20 PF
MP05A	5.000000	HC/49	20 PF
MP05B	5.000000	HC/49	Series
MP050	5.068800	HC/49	Series
MP060	6.000000	HC/49	20 PF
MP061	6.144000	HC/49	20 PF
MP073	7.372800	HC/49	Series
MP080	8.000000	HC/49	Series
MP080A	8.000000	HC/49	20 PF
MP098	9.830400	HC/49	20 PF
MP100	10.000000	HC/49	Series
MP101	10.000000	HC/49	30 PF
MP107	10.738635	HC/49	32 PF
MP110	11.000000	HC/49	18 PF
MP111	11.059200	HC/49	Series
MP120	12.000000	HC/49	Series
MP122	12.288000	HC/49	32 PF
MP143	14.318180	HC/49	Series
MP147	14.745600	HC/49	Series
MP150	15.000000	HC/49	Series
MP160	16.000000	HC/49	Series
MP184	18.432000	HC/49	Series
MP196	19.660800	HC/49	Series
MP200	20.000000	HC/49	Series
MP221	22.118400	HC/49	Series
MP240	24.000000	HC/49	Series
MP245	24.576000	HC/49	Series
MP250	25.000000	HC/49	Series

PART NUMBER	FREQUENCY (MHz)
ATS036	3.579545
ATS036SM	3.579545
ATP036SM	3.579745
ATS040	4.000000
ATS040SM	4.000000
ATP040SM	4.000000
ATS042	4.915200
ATS042SM	4.915200
ATP042SM	4.915200
ATS050	5.068800
ATS050SM	5.068800
ATP050SM	5.068800
ATS060	6.000000
ATS060SM	6.000000
ATP060SM	6.000000
ATS08A	8.000000
ATS08ASM	8.000000
ATP08ASM	8.000000
ATS100	10.000000
ATS100SM	10.000000
ATP100SM	10.000000
ATS120	12.000000
ATS120SM	12.000000
ATP120SM	12.000000
ATS160	16.000000
ATS160SM	16.000000
ATP160SM	16.000000
ATS200	20.000000
ATS200SM	20.000000
ATP200SM	20.000000

PART NUMBER	FREQUENCY (MHz)
MXO45	1.000
MXO45	1.8432
MXO45	2.000
MXO45	2.4576
MXO45	3.6864
MXO45	4.000
MXO45	4.9152
MXO45	5.000
MXO45	5.0688
MXO45	6.000
MXO45	6.144
MXO45	7.3728
MXO45	8.000
MXO45	10.000
MXO45	12.000
MXO45	14.31818
MXO45	16.000
MXO45	18.432
MXO45	19.6608
MXO45	20.000
MXO45	24.000
MXO45	25.000
MXO45	25.175
MXO45	28.322
MXO45	32.000
MXO45	40.000
MXO45	50.000
MXO45	64.000
MXO45	66.6666
MXO45	80.000



MXO 45HS	MXO 55	MXO 55L	EXO 55
—	GA-2C	GA-2C	GO-2C
—	GB-2C	GB-2C	—
8 PIN DIP	14 PIN DIP	14 PIN DIP	14 PIN DIP
1.0 to 80 MHz	19.2 KHz to 100 MHz	2.4576 to 70 MHz	8 to 130 MHz
±.01% (100 PPM)	±.01% (100 PPM)	±.01% (100 PPM)	±.01% (100 PPM)
0° C to +70° C	0° C to +70° C	0° C to +70° C	0° C to +70° C
40/60%	40/60%	40/60%	40/60%
TTL 5nS max CMOS 10nS max	5nS max	5nS max	2.5nS max
5.0 Volts ±10%	5.0 Volts ±10%	5.0 Volts ±10%	
CMOS/10 TTL	10TTL	10TTL	10KH ECL

FREQUENCY (MHz)		FREQUENCY (MHz)		FREQUENCY (MHz)		FREQUENCY (MHz)	
PART NUMBER		PART NUMBER		PART NUMBER		PART NUMBER	
MXO45HS	1.000	MXO55GB-2C	1.843200 *	MXO-55LGB-2C	2.4576	EXO55GO-2C	80.0000
MXO45HS	1.8432	MXO55GB-2C	3.686400	MXO-55LGB-2C	3.8884	EXO65GO-2C	100.0000
MXO45HS	2.000	MXO55GB-2C	4.000000	MXO-55LGB-2C	4.0000	EXO55GO-2C	110.0000
MXO45HS	2.4576	MXO55GA-2C	4.915200	MXO-55LGA-2C	4.9152	EXO55GO-2C	120.0000
MXO45HS	3.6864	MXO55GA-2C	5.068800	MXO-55LGA-2C	5.0688		
MXO45HS	4.000	MXO55GA-2C	7.372800	MXO-55LGA-2C	6.0000		
MXO45HS	4.9152	MXO55GA-2C	8.000000	MXO-55LGA-2C	6.1440		
MXO45HS	5.000	MXO55GA-2C	10.000000	MXO-55LGA-2C	7.3728		
MXO45HS	5.0688	MXO55GA-2C	12.000000	MXO-55LGA-2C	8.0000		
MXO45HS	6.000	MXO55GA-2C	14.318180	MXO-55LGA-2C	10.0000		
MXO45HS	6.144	MXO55GA-2C	16.000000	MXO-55LGA-2C	11.0592		
MXO45HS	7.3728	MXO55GA-2C	16.257000	MXO-55LGA-2C	12.0000		
MXO45HS	8.000	MXO55GA-2C	18.432000	MXO-55LGA-2C	14.31818		
MXO45HS	10.000	MXO55GA-2C	19.660800	MXO-55LGA-2C	16.0000		
MXO45HS	12.000	MXO55GA-2C	20.000000	MXO-55LGA-2C	16.2570		
MXO45HS	14.31818	MXO55GA-2C	24.000000	MXO-55LGA-2C	18.4320		
MXO45HS	16.000	MXO55GA-2C	32.000000	MXO-55LGA-2C	19.6608		
MXO45HS	18.432	MXO55GA-2C	40.000000	MXO-55LGA-2C	20.0000		
MXO45HS	19.6608			MXO-55LGA-2C	24.0000		
MXO45HS	20.000			MXO-55LGA-2C	25.0000		
MXO45HS	24.000			MXO-55LGA-2C	25.1750		
MXO45HS	25.000			MXO-55LGA-2C	28.3220		
MXO45HS	25.175			MXO-55LGA-2C	32.0000		
MXO45HS	28.322			MXO-55LGA-2C	40.0000		
MXO45HS	32.000			MXO-55LGA-2C	48.0000		
MXO45HS	40.000			MXO-55LGA-2C	64.0000		
MXO45HS	50.000						
MXO45HS	64.000						
MXO45HS	66.6666						
MXO45HS	80.000						

\*18ns Max Rise & Fall Time