

### SERIES AS-SMD

#### ● FEATURES

- EXCELLENT CLOCK SIGNAL GENERATOR FOR CPU's
- AVAILABLE IN EXTENDED TEMPERATURE RANGE
- LOW PROFILE SURFACE MOUNT



#### ● SPECIFICATIONS

PARAMETER		VALUE
FREQUENCY RANGE		3.200 MHz TO 80.000 MHz
MODE OF OSCILLATION	FUNDAMENTAL	3.200 MHz TO 40.320 MHz
	THIRD OVERTONE	24.576 MHz TO 80.000 MHz
FREQUENCY TOLERANCE AT 25°C		±30 PPM MAXIMUM (±10 PPM, AND ±20 PPM AVAILABLE)
FREQUENCY STABILITY OVER TEMPERATURE		±50 PPM MAXIMUM (±10 PPM, ±20 PPM AND ±30 PPM AVAILABLE)
OPERATING TEMPERATURE RANGE		-20°C TO +70°C STANDARD -40°C TO +85°C EXTENDED
STORAGE TEMPERATURE RANGE		-55°C TO +125°C
AGING		±5 PPM PER YEAR MAXIMUM
LOAD CAPACITANCE		10 pF to 32 pF OR SERIES
EQUIVALENT SERIES RESISTANCE		SEE TABLE 1
SHUNT CAPACITANCE		7.0 pF MAXIMUM
DRIVE LEVEL		500 µW MAX
SHOCK RESISTANCE		±5 PPM MAXIMUM 75 cm DROP TEST IN 3 AXES ON TO A HARD SURFACE
REFLOW CONDITIONS		260°C ±5°C FOR 10s MAXIMUM



TABLE 1

FREQUENCY (MHz)	MODE	MAX ESR (OHMS)	FREQUENCY (MHz)	MODE	MAX ESR (OHMS)	FREQUENCY (MHz)	MODE	MAX ESR (OHMS)
3.579545	FUND	180	8.064	FUND	60	14.7456	FUND	40
3.6864	FUND	150	8.192	FUND	60	16.000 TO 24.000	FUND	40
4.000	FUND	130	8.6436	FUND	60	24.576	FUND/3OT	40/80
4.032	FUND	130	9.600	FUND	60	27.000	FUND/3OT	40/80
4.096	FUND	130	9.8304	FUND	60	28.63636	FUND/3OT	40/80
4.194304	FUND	130	10.000	FUND	50	29.000 TO 40.000	FUND/3OT	40/70
4.433619	FUND	130	10.240	FUND	50	40.320	FUND/3OT	40/70
4.9152	FUND	130	10.244	FUND	50	47.920	3OT	70
5.0688	FUND	100	10.245	FUND	50	48.000 TO 80.000	3OT	70
6.000	FUND	80	11.000	FUND	50			
6.144	FUND	80	11.0592	FUND	50			
6.176	FUND	80	11.2896	FUND	50			
7.15909	FUND	70	12.000	FUND	50			
7.3728	FUND	70	12.288	FUND	50			
7.680	FUND	70	12.800	FUND	50			
8.000	FUND	60	14.31818	FUND	50			

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### ■ PART NUMBERING SYSTEM

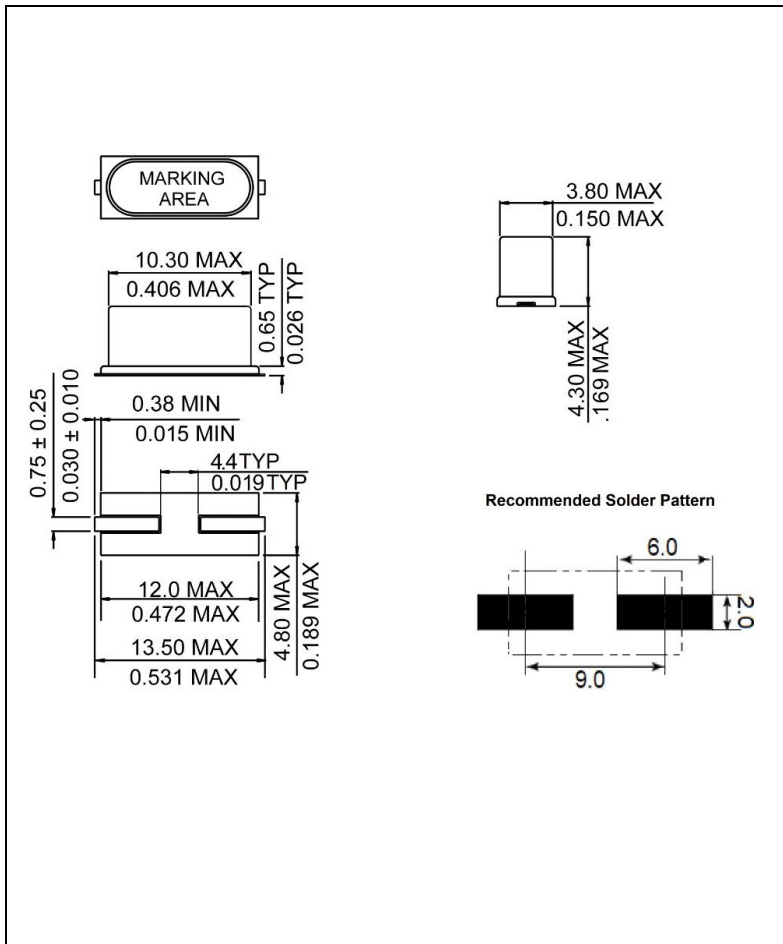
TYPE	FREQUENCY	LOAD CAPACITANCE	MODE	TOLERANCE/STABILITY (PPM/PPM)
AS	IN MHz	10 TO 32 pF FOR PARALLEL S FOR SERIES	Blank FOR < 24.576 MHz F FOR ≥ 24.576 MHz 3OT THIRD OVERTONE	Blank FOR MAXIMUM PPM/PPM Example: 1020, 2050

EXTENDED TEMPERATURE	CONFIGURATION	HEIGHT (H)	TAPE & REEL
Blank FOR STANDARD EXT FOR EXTENDED	SMD	Blank FOR 4.6 mm (STANDARD) H25 2.5mm (CUSTOM) H27 2.7mm (CUSTOM) H30 3.0mm (CUSTOM) H32 3.2mm (CUSTOM) H35 3.5mm (CUSTOM)	TR

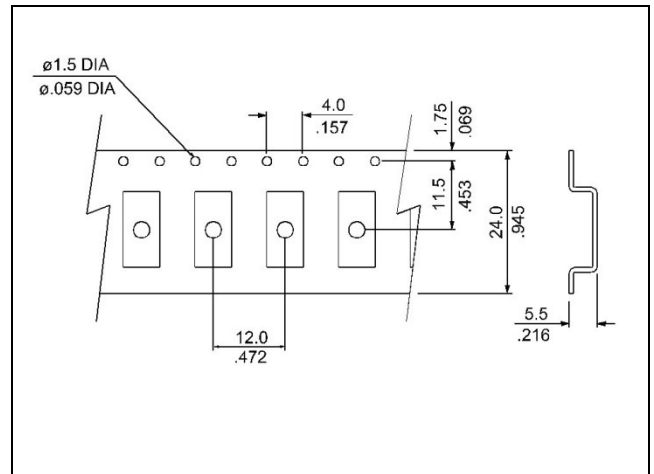
#### EXAMPLE: AS-24.000-18-SMD-TR

Surface Mount Microprocessor Crystal, HC-49 SHORT, 24.000 MHz, Fundamental mode, 18 pF load, ±30 ppm Tolerance, ±50 ppm Stability, from -20°C to +70°C, Tape and reel packaging

### ● MECHANICAL SPECIFICATION



### ● CARRIER TAPE DIMENSIONS



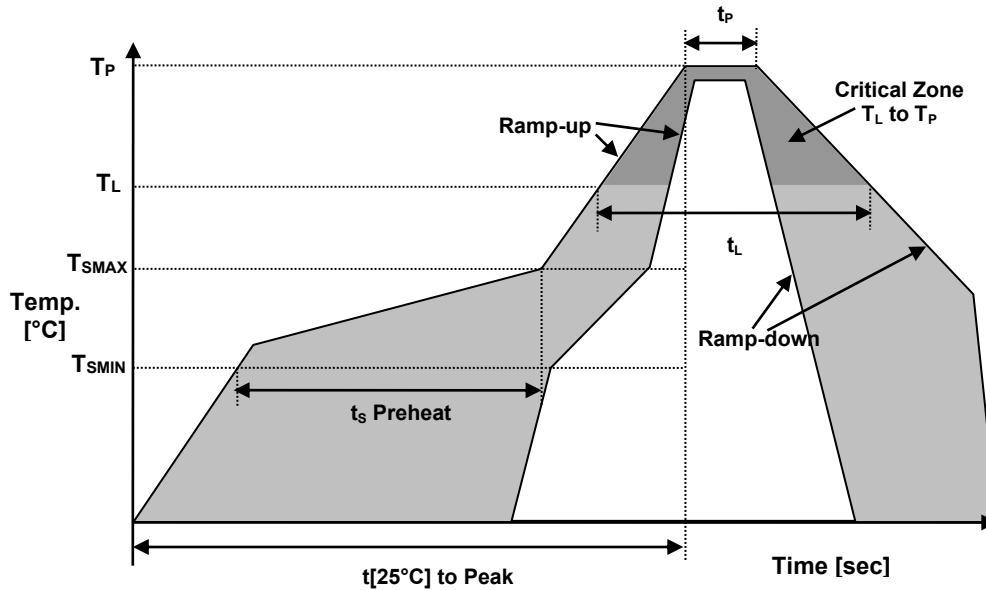
NOTE: REFER TO EIA-481 FOR NON-SPECIFIED DIMENSIONS

### ● PACKAGING

330 mm REEL DIAMETER  
24 mm TAPE WIDTH, 12 mm PITCH  
QUANTITY: 1000 PIECES PER REEL

IN ACCORDANCE WITH EIA-481

## REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60-180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-up rate	$R_{UP}$	3°C/sec max.
Ramp-down rate	$R_{DOWN}$	6°C/sec max.
Time within 5°C of Peak Temperature	$t_p$	10 sec.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	$t_L$	60-150 sec.

## ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
REACH SVHC	COMPLIANT
RoHS	COMPLIANT
TERMINATION FINISH	Sn

