



## Miniature AT Strip Crystals

### Features

- High Frequency AT Cut Crystal Performance
- Small Compact Size
- Excellent Shock and Vibration Characteristics



### ❖ Specifications

Parameter		Value
Frequency Range		3.579545 to 70.000 MHz
Mode of Oscillation	Fundamental	3.579545 to 30.000 MHz
	Third Overtone	30.01 to 70.000 MHz
Frequency Tolerance at 25°C		±50 ppm max (±30 ppm available)
Frequency Stability over Temperature		±50 ppm max (±30 ppm available)
Operating Temperature Range		-10°C to +60°C -40°C to +85°C
Storage Temperature Range		-40°C to +85°C
Aging		±5 ppm per year max
Load Capacitance		10 pF to 32 pF or Series
Equivalent Series Resistance		See Table 1
Shunt Capacitance		5 pF max
Drive Level		100 µW max
Shock Resistance		±5 ppm max 75 cm drop test onto a hardwood surface

Table 1

Frequency (MHz)	Mode	MAX ESR (Ω)
3.579545 to 4.000	FUND	200
4.000 to 5.999	FUND	150
6.000 to 9.999	FUND	100
10.000 to 30.000	FUND	50
30.010 to 35.990	3OT	100
36.000 to 70.000	3OT	80

RS, Professionally Approved Products, gives you professional quality parts across all products categories. Our range has been testified by engineers as giving comparable quality to that of the leading brands without paying a premium price.

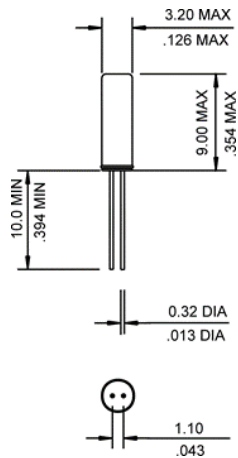


## DA PRODUCT FAMILY

### ❖ Environmental

Parameter	Value
Moisture Sensitivity Level	1
RoHS	Compliant – Exemption 7a
REACH SVHC	Compliant
Halogen Free	Compliant
ESD Classification Level	N/A
Termination Finish	Sn
Unit Weight (grams)	0.55

### Mechanical Specification



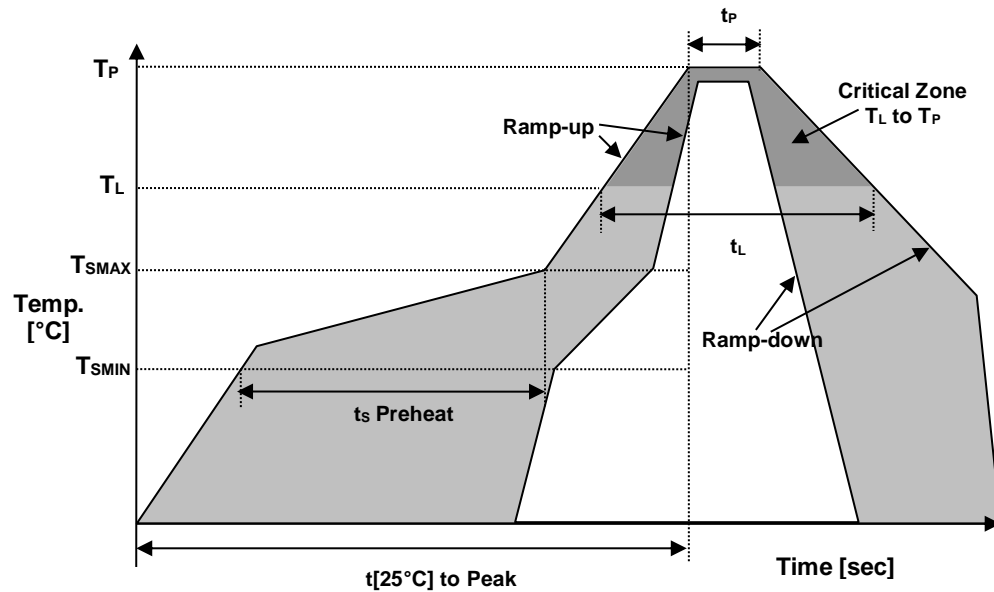
### ❖ Part Numbering

DA	-	Frequency	-	Load Capacitance	-	Tolerance/Stability
Product Family		Frequency (MHz)		Load Capacitance (pF) 10 to 32 pF or S for Series		Blank: ±50 ppm F: ±30 ppm

#### EXAMPLE: DA-4.000-18

Microprocessor Crystal, 10.50 x 3.2, 4.000 MHz, 18 pF load Capacitance, tolerance ±30 ppm and stability ±50 ppm, Fundamental mode, standard temperature range -10°C to +60°C

## Reflow Profile



Reflow Profile (Reference IPC/JEDEC J-STD-020)		
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.