



## 11.4 x 5.0mm SMD Crystal

## 3.2MHz to 70MHz

#### **FEATURES**

- Frequency range 3.20MHz to 70.0MHZ
- Fully RoHS compliant
- Two height profiles available, 4.8 or 3.8mm
- Standard EIA tape and reel supply

#### **DESCRIPTION**

MP24 and MP25 crystals provide an ideal source of low frequency clock signals (from 3.5MHz) in a low-profile SMD package. The part is electrically and mechanically compatible with traditional industry SMD packages and may be used as a 'drop-in' replacement.

#### **USE WITH DOUBLE-SIDED PCBs**

MP24 and MP25 crystals are designed for top board assembly and one solder reflow process. Do not reflow this part with the can inverted.

#### **SPECIFICATION**

F	requency Range	
	AT-Cut Fundamental:	3.20MHz to 48.0MHz
	AT-Cut 3rd Overtone:	27.0MHz to 70.0MHz
	BT-Cut Fundamental:	24.0MHz to 48.0MHz
C	Calibration Tolerance at 25°C*:	from ±10ppm at 25°C
		(±30ppm standard)
F	requency stability	
	AT-Cut from:	±10ppm over-10° to +60°C
	BT-Cut from:	±50ppm over -10° to +60°C
S	itorage Temperature:	-50°∼+105°C
Е	quivalent Series Resistance:	See table
S	Shunt Capacitance (C0):	7pF maximum
L	oad Capacitance (CL):	Series or from 8pF to 32pF
		(Customer specified CL)
Δ	Ageing:	<±3ppm per year at +25°C
	Drive level:	100μW typical, 500μW maximum
R	Reflow Soldering:	10s maximum at 260°C twice
		or 180s at 230°C, once.
Р	Packaging:	24mm EIA tape and reel, 1k per.

### **EQUIVALENT SERIES RESISTANCE**

Frequency Range MHz	ESR Ohms Max.	
AT-Cut Fundamental		
3.2~3.4	300	
3.5~6.0	120	
6.1~10.0	60	
10.1~48.0	40	

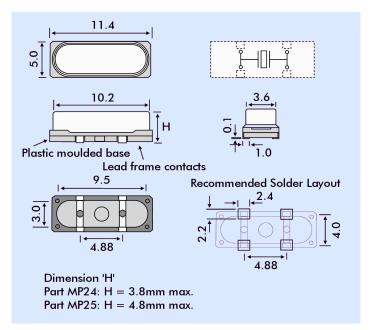
Range MHz	Ohms Max.	
AT-Cut 3rd Overtone		
27.0~30.0	150	
30.1~50.0	100	
50.1~70.0	80	
Frequency Range MHz BT-Cut Fu	ESR Ohms Max. ndamental	
24.0~48.0	40	

**Frequency** 



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#### **OUTLINE & DIMENSIONS**



#### PART NUMBER GENERATION

Part numbers for MP24/25 crystals are generated as follows:

