



## Sichuan Institute of Piezoelectric and Acoustooptic Technology

- Ideal for European 418 MHz transmitters
- Low loss, High Q factor
- Quartz stability
- To—39 case

**SP418R**

418MHz SAW Resonator

The SP418R is a true one-port ,surface-acoustic-wave(SAW) resonator in a low profile TO-39 case .It provides reliable, fundamental-mode, quartz frequency stabilization of fixed-frequency transmitters operating at 418MHz. The SP418R is designed specifically for remote-control and wireless security transmitters operating in Europe under ETSII-ETS 300 200 and in Germany under FTZ 17 TR 2100

**Absolute Maximum Rating**

Rating	Value
CW RF power Dissipation	+13dBm
DC Voltage between any 2 pins	$\pm 30$ VDC
Case Temperature	-40 to +85°C

**Electrical Characteristic**

Characteristic		Sym	Unit	Minimum	Typical	Maximum
Center Frequency		$F_0$	MHz	417.925	418	418.075
Insertion Loss		IL	dB		1.1	2.0
Quality Factor	Unloaded Q	$Q_U$			11,000	
	50 $\Omega$ loaded Q	$Q_L$			2,150	
Temperature Stability	Turnover Temperature	$T_0$	°C	28	43	58
	Turnover Frequency	$F_0$	KHz		$F_0+2.6$	
	Freq.Temp.Coefficient	FTC	ppm/°C <sup>2</sup>		0.032	
Frequency Aging				ppm/yr	< $\pm 10$	
DC Insulation Resistance between any 2 pins				M $\Omega$	1.0	
RF Equivalent RLC Model	Motional resistance	$R_m$	$\Omega$		15	19
	Motional Inductance	$L_m$	$\mu$ H		67.0144	
	Motional Capacitance	$C_m$	fF		2.01212	
	Shunt Static Cap	$C_0$	pF	1.7	2.1	2.3
	Transducer Static Cap.	$C_p$	pF		1.8	

**NOTE:**

1. Test temperature: 25 $\pm$ 2°C.
2. In test the shunt inductance is tuned for parallel resonance with  $C_0$  at  $f_c$ .
3. This part is Electrostatic Discharge Sensitive and may be damaged by improper handling



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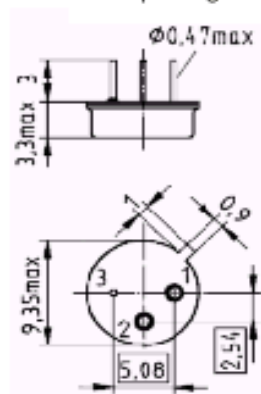
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### Package

Metal package TO39



Pin configuration

- |   |         |
|---|---------|
| 1 | Input 1 |
| 2 | Input 2 |
| 3 | Ground  |

Dimensions in mm, approx. weight 1.0 g

### Frequency response

