



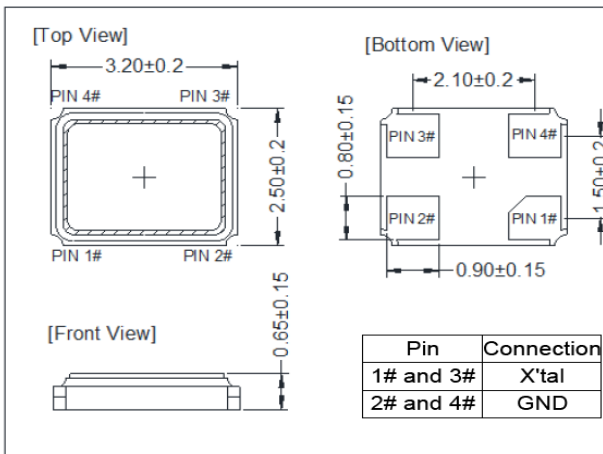
TYPICAL APPLICATION

- Bluetooth, Mobile Phone, GPS
- Wireless LAN, 4G/LTE
- Hard Disk

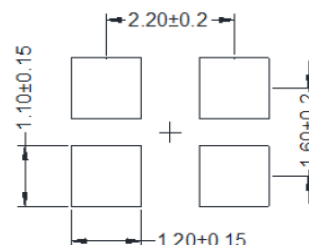


DIMENSIONS (mm)

Product Dimensions



Solder Pad Layout Dimensions



ELECTRICAL SPECIFICATION

PARAMETERS	XMD-SMD3225			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	8		54	MHz	-
Mode of vibration	Fundamental				-
Frequency Tolerance	10 20 30 or specify			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	8pF 10pF or specify			pF	-
Shunt Capacitance			2	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level		10	200	μW	-
Operating Temperature Range	-40		125	°C	-
Storage Temperature	-55		125	°C	-
Aging (First Year)	-3		3	ppm	-
Insulation Resistan	500			MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
8MHz ≤ F0 ≤ 10MHz	Fundamental	200
10MHz < F0 < 16MHz	Fundamental	100
16MHz ≤ F0 ≤ 20MHz	Fundamental	60
20MHz < F0 ≤ 32MHz	Fundamental	40
32MHz < F0 ≤ 54MHz	Fundamental	30

FREQ. STABILITY vs. TEMP. RANGE (Table 2)

Temp.°C \ ppm	±10	±15	±20	±30	±50
-10 ~ 60	○	○	○	○	○
-20 ~ 70	○	○	○	○	○
-40 ~ 85	X	△	○	○	○
-40 ~ 105	X	X	△	○	○
-40 ~ 125	X	X	X	X	○

○: Available △: Conditional X: Not available



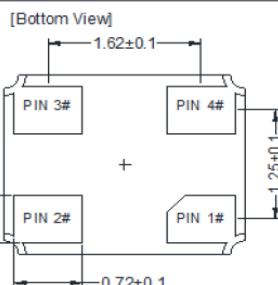
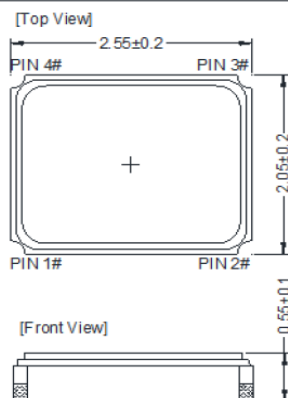
TYPICAL APPLICATION

- Bluetooth , Mobile phone, Wireless LAN.
- Office Automation
- Audio & Video



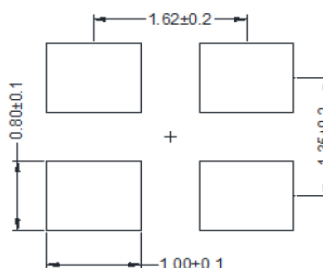
DIMENSIONS (mm)

Product Dimensions



Pin	Connection
1# and 3#	X'tal
2# and 4#	GND

Solder Pad Layout Dimensions



ELECTRICAL SPECIFICATION

PARAMETERS	XME-SMD2520			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	12		52	MHz	-
Mode of vibration	Fundamental				-
Frequency Tolerance	10 20 30 or specify			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	8pF 10pF or specify			pF	-
Shunt Capacitance	-	-	2	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level		10	200	μW	-
Operating Temperature Range	-40	-	125	°C	-
Storage Temperature	-55	-	125	°C	-
Aging (First Year)	-3	-	3	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
12MHz ≤ F0 < 16MHz	Fundamental	100
16MHz ≤ F0 ≤ 20MHz	Fundamental	80
20MHz < F0 ≤ 32MHz	Fundamental	60
32MHz < F0 ≤ 52MHz	Fundamental	40

FREQ. STABILITY vs. TEMP. RANGE (Table 2)

Temp. °C	±10	±15	±20	±30	±50
-10 ~ 60	○	○	○	○	○
-20 ~ 70	○	○	○	○	○
-40 ~ 85	X	△	○	○	○
-40 ~ 105	X	X	△	○	○
-40 ~ 125	X	X	X	X	○

○: Available △: Conditional X: Not available



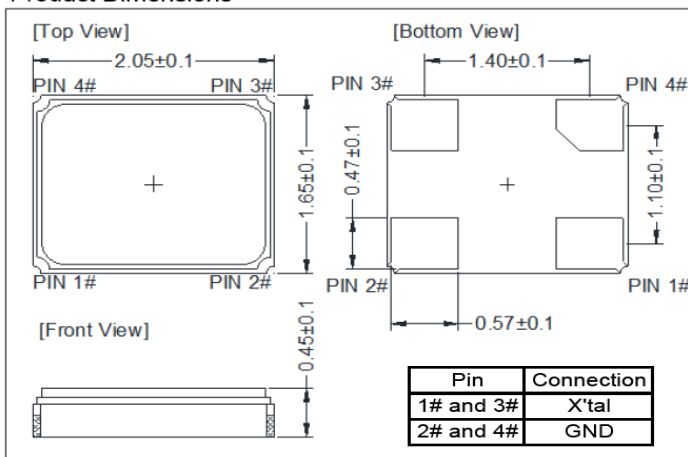
TYPICAL APPLICATION

- Bluetooth , Mobile phone, Wireless LAN.
- Office Automation
- Audio & Video

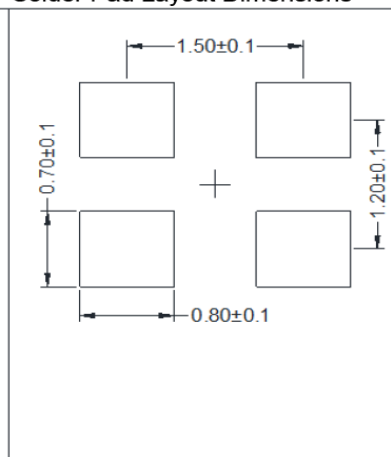


DIMENSIONS (mm)

Product Dimensions



Solder Pad Layout Dimensions



ELECTRICAL SPECIFICATION

PARAMETERS	XMF-SMD2016			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	16	-	52	MHz	-
Mode of vibration	Fundamental				-
Frequency Tolerance	10 20 30 or specify			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	8pF 10pF or specify			pF	-
Shunt Capacitance	-	-	2	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level		10	200	μW	-
Operating Temperature Range	-40	-	125	°C	-
Storage Temperature	-55	-	125	°C	-
Aging (First Year)	-3	-	3	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R.(Ω)
16MHz≤F0 < 20MHz	Fundamental	120
20MHz≤F0 ≤30MHz	Fundamental	80
30MHz < F0 ≤40MHz	Fundamental	60
40MHz < F0 ≤52MHz	Fundamental	50

FREQ. STABILITY vs. TEMP. RANGE(Table 2)

Temp.°C \ ppm	±10	±15	±20	±30	±50
-10 ~ 60	○	○	○	○	○
-20 ~ 70	○	○	○	○	○
-40 ~ 85	X	△	○	○	○
-40 ~ 105	X	X	△	○	○
-40 ~ 125	X	X	X	X	○

○: Available △:Conditional X: Not available

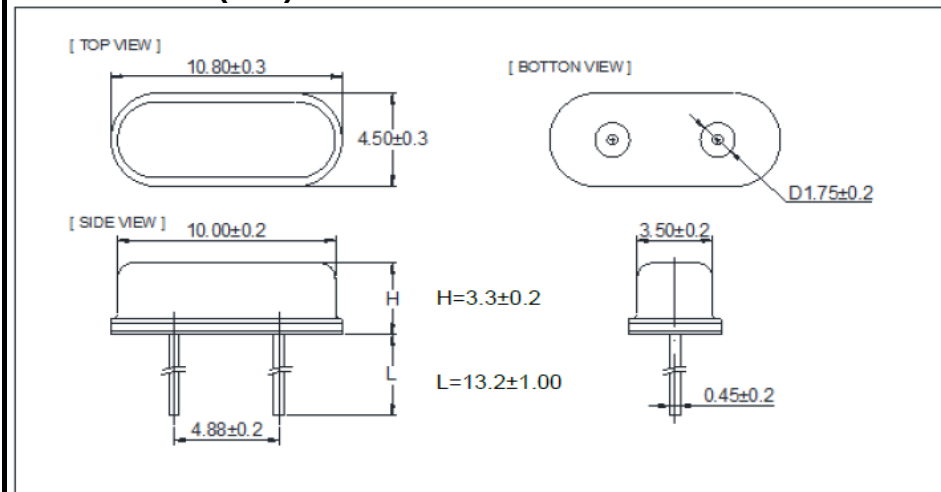


TYPICAL APPLICATION

- Bluetooth ,Automotive,Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WD



DIMENSIONS (mm)



ELECTRICAL SPECIFICATION

PARAMETERS	XSA-49S			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	3	-	32	MHz	-
Mode of vibration	AT Fundamental				-
Frequency Tolerance	±5ppm~±50ppm			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	6pF~100pF or specify			pF	-
Shunt Capacitance	-	-	7	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level	-	100	500	uW	-
Aging (First Year)	-5	-	5	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
3MHz≤F0<5MHz	AT Fundamental	150
5MHz≤F0≤9MHz	AT Fundamental	80
9MHz<F0<12MHz	AT Fundamental	60
12MHz≤F0≤16MHz	AT Fundamental	40
16MHz<F0<25MHz	AT Fundamental	30
25Hz≤F0≤32MHz	AT Fundamental	25

FREQ. STABILITY vs. TEMP. RANGE(Table 2)

Temp.°C \ ppm	±5	±10	±20
0~70	○	○	○
-20~70	X	○	○
-40~85	X	X	○

○: Available △:Conditional X: Not available

Other special specifications are designed to customer's requirements,More details available



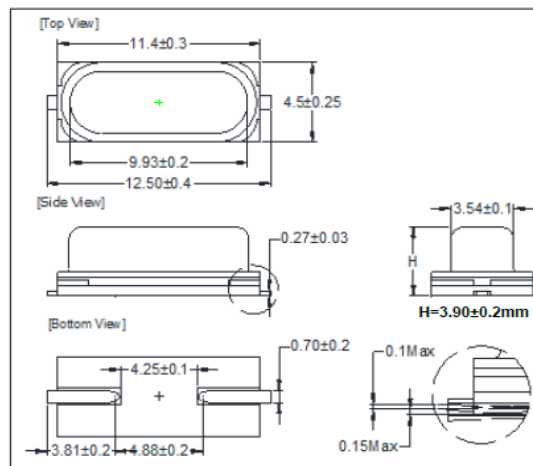
TYPICAL APPLICATION

- Bluetooth ,Automotive,Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WD

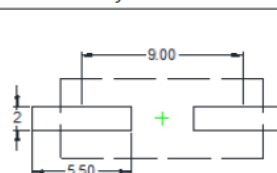


DIMENSIONS (mm)

Product Dimensions



Solder Pad Layout Dimensions



ELECTRICAL SPECIFICATION

PARAMETERS	XSD-49SMD			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	3	-	32	MHz	-
Mode of vibration	AT Fundamental				-
Frequency Tolerance	±5ppm~±50ppm			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	6pF~100pF or specify			pF	-
Shunt Capacitance	-	-	7	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level	-	100	500	uW	-
Aging (First Year)	-5	-	5	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
3MHz≤F0<5MHz	AT Fundamental	150
5MHz≤F0≤9MHz	AT Fundamental	80
9MHz<F0<12MHz	AT Fundamental	60
12MHz≤F0≤16MHz	AT Fundamental	40
16MHz<F0<25MHz	AT Fundamental	30
25Hz≤F0≤32MHz	AT Fundamental	25

FREQ. STABILITY vs. TEMP. RANGE(Table 2)

Temp.°C \ ppm	±5	±10	±20
0~70	○	○	○
-20~70	X	○	○
-40~85	X	X	○

○: Available △:Conditional X: Not available

Other special specifications are designed to customer's requirements,More details available

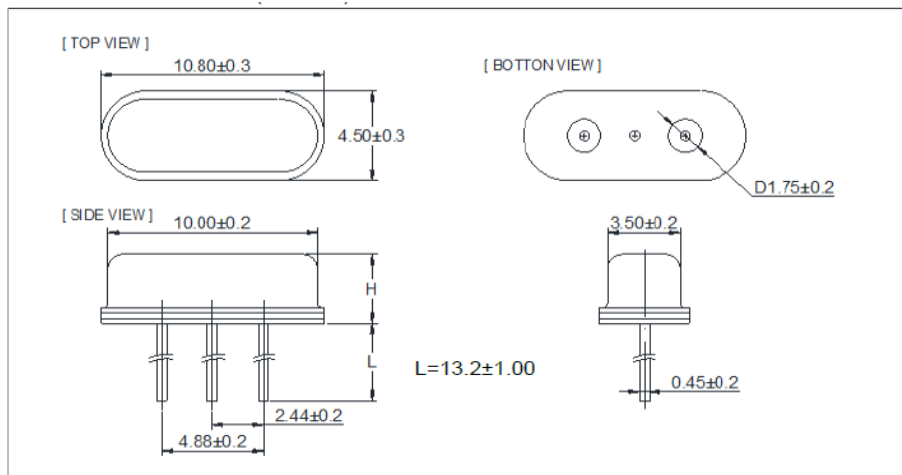


TYPICAL APPLICATION

- Bluetooth ,Automotive,Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WD



DIMENSIONS (mm)



ELECTRICAL SPECIFICATION

PARAMETERS	XSC-49SG			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	3	-	32	MHz	-
Mode of vibration	AT Fundamental				-
Frequency Tolerance	$\pm 5\text{ppm} \sim \pm 50\text{ppm}$			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	6pF~100pF or specify			pF	-
Shunt Capacitance	-	-	7	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level	-	100	500	uW	-
Aging (First Year)	-5	-	5	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
$3\text{MHz} \leq F_0 < 5\text{MHz}$	AT Fundamental	150
$5\text{MHz} \leq F_0 \leq 9\text{MHz}$	AT Fundamental	80
$9\text{MHz} < F_0 < 12\text{MHz}$	AT Fundamental	60
$12\text{MHz} \leq F_0 \leq 16\text{MHz}$	AT Fundamental	40
$16\text{MHz} < F_0 < 25\text{MHz}$	AT Fundamental	30
$25\text{Hz} \leq F_0 \leq 32\text{MHz}$	AT Fundamental	25

FREQ. STABILITY vs. TEMP. RANGE(Table 2)

Temp.°C \ ppm	±5	±10	±20
0~70	○	○	○
-20 ~ 70	X	○	○
-40 ~ 85	X	X	○

○: Available △:Conditional X: Not available

Other special specifications are designed to customer's requirements,More details available

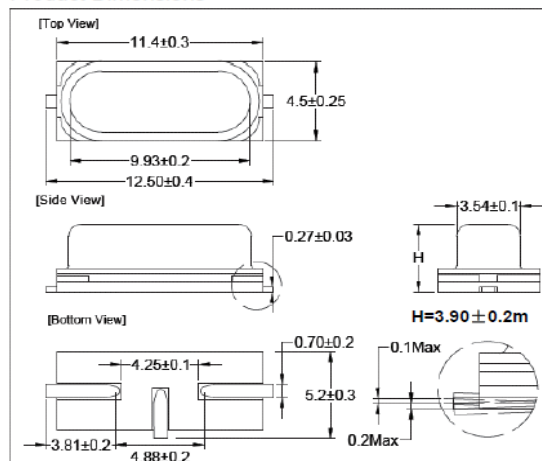


TYPICAL APPLICATION

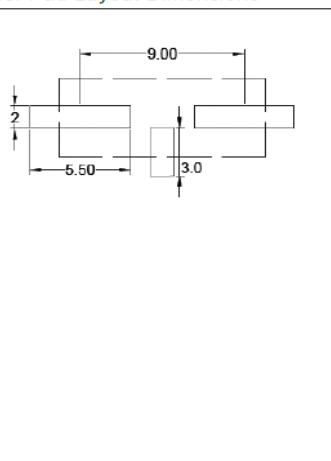
- Bluetooth ,Automotive,Wireless
- Computers, Modems, Communications
- Set-top Box, DECT/WD

DIMENSIONS (mm)

Product Dimensions



Solder Pad Layout Dimensions



ELECTRICAL SPECIFICATION

PARAMETERS	XSF-49SMG			UNITS	CONDITIONS
	MIN	TYP	MAX		
Nominal Frequency	3	-	32	MHz	-
Mode of vibration	AT Fundamental				-
Frequency Tolerance	±5ppm~±50ppm			ppm	@+25°C±3°C
Frequency Stability	Table 2			ppm	Ref 25°C±3°C
Load Capacitance	6pF~100pF or specify			pF	-
Shunt Capacitance	-	-	7	pF	@+25°C±3°C
Equivalent Series Resistance	Table 1			Ω	-
Drive Level	-	100	500	uW	-
Aging (First Year)	-5	-	5	ppm	-
Insulation Resistan	500	-	-	MΩ	@DC100V

EQUIVALENT SERIES RESISTANCE (Table 1)

Frequency Range	MODE	E.S.R(Ω)
3MHz≤F0<5MHz	AT Fundamental	150
5MHz≤F0≤9MHz	AT Fundamental	80
9MHz<F0<12MHz	AT Fundamental	60
12MHz≤F0≤16MHz	AT Fundamental	40
16MHz<F0<25MHz	AT Fundamental	30
25Hz≤F0≤32MHz	AT Fundamental	25

FREQ. STABILITY vs. TEMP. RANGE(Table 2)

Temp.°C \ ppm	±5	±10	±20
0~70	○	○	○
-20~70	X	○	○
-40~85	X	X	○

○: Available △:Conditional X: Not available

Other special specifications are designed to customer's requirements,More details available