AEC-Q200
This component was always RoHS compliant from the first date of manufacture.

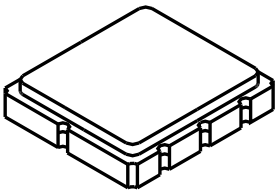
RO3164C

868.35 MHz SAW Resonator

- ***Ideal for European 868.35 MHz Transmitters***
- ***Very Low Series Resistance***
- ***Quartz Stability***
- ***Complies with Directive 2002/95/EC (RoHS)***
- ***Tape and Reel Standard per ANSI/EIA-481***

RoHS Compliant

The RO3164C is a true one-port, surface-acoustic-wave (SAW) resonator in a surface-mount ceramic case. It provides reliable, fundamental-mode, quartz frequency stabilization of fixed-frequency transmitters operating at 868.35 MHz.



SM5050-8 Case
5 X 5

Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +85	°C
Operating Temperature	-40 to +85	°C

Electrical Characteristics

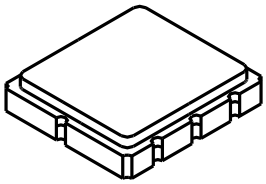
Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Frequency (+25 °C) Nominal Frequency RO3164C		f_C		868.150		868.550	MHz
Tolerance from 868.35 MHz RO3164C		Δf_C				±200	kHz
Insertion Loss		IL			1.1	2.5	dB
Quality Factor	Unloaded Q	Q_U			7000		
	50 Ω Loaded Q	Q_L			671		
Temperature Stability	Turnover Temperature	T_O		10	25	40	°C
	Turnover Frequency	f_O			f_C		kHz
	Frequency Temperature Coefficient	FTC			0.032		ppm/°C^2
Frequency Aging	Absolute Value during the First Year	|fA|			<±10		ppm/yr
DC Insulation Resistance between Any Two Terminals				1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R_M			10.8		Ω
	Motional Inductance	L_M			13.6		µH
	Motional Capacitance	C_M			2.5		fF
	Shunt Static Capacitance	C_O			2.1		pF
Test Fixture Shunt Inductance		L_{TEST}			16		nH
Lid Symbolization (in addition to Lot and/or Date Codes)		799 / YWWS					

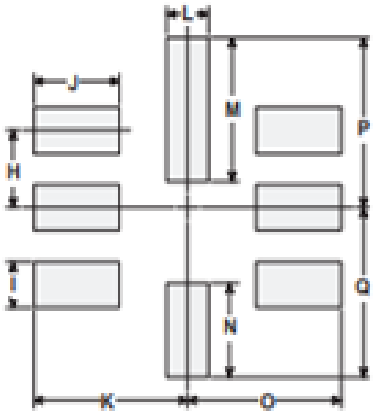
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

SM5050-8 Surface-Mount 8-Terminal Ceramic Case
5.0 X 5.0 mm Nominal Footprint





PCB Footprint

Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			0.050	
I		0.76			0.030	
J		1.55			0.061	
K		2.79			0.110	
L		0.76			0.030	
M		2.36			0.093	
N		1.55			0.061	
O		2.79			0.110	
P		2.79			0.110	
Q		2.79			0.110	

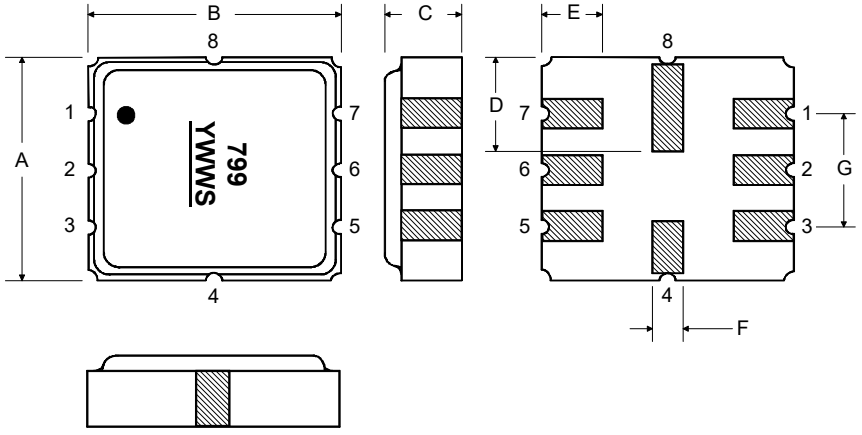
Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic
Pb Free	

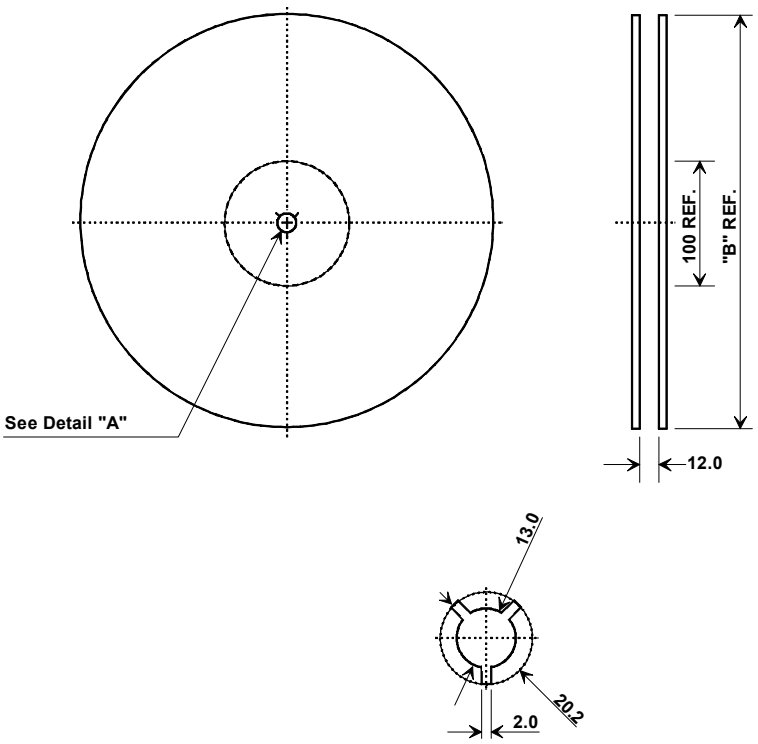
Electrical Connections

Connection		Terminals
Port 1	Input	2
Port 2	Output	6
	Ground	All others
Dot indicates Pin 1		

TOP VIEW BOTTOM VIEW



Tape and Reel Specifications

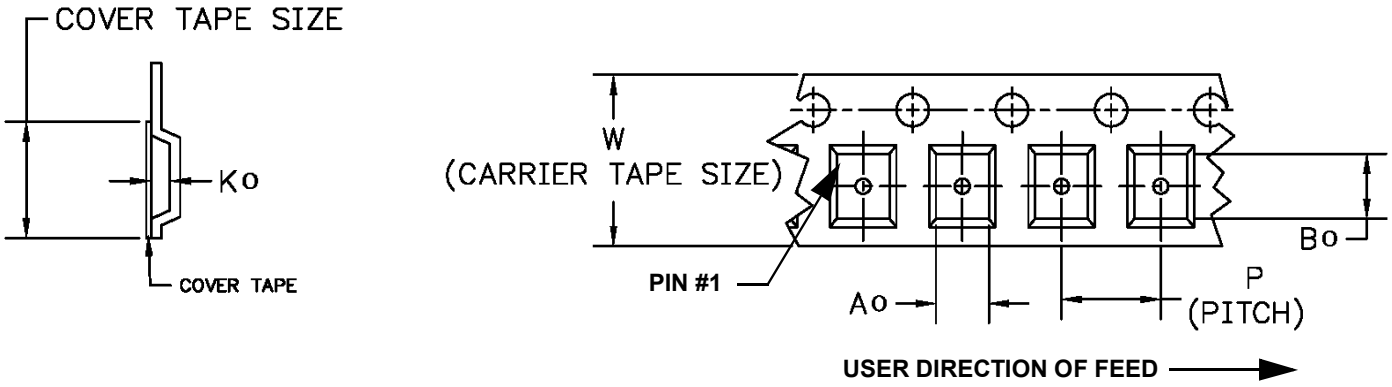


Tape and Reel Standard per ANSI/EIA-481

"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.3 mm
Bo	5.3 mm
Ko	2.0 mm
Pitch	8.0 mm
W	12.0 mm



Recommended Reflow Profile

1. Preheating shall be fixed at 150~180ºC for 60~90 seconds.
2. Ascending time to preheating temperature 150ºC shall be 30 seconds min.
3. Heating shall be fixed at 220ºC for 50~80 seconds and at 260ºC +0/-5ºC peak (10 seconds).
4. Time: 5 times maximum.