FTR5092-A	S110 CRYSTAL UNIT DATA SHEET			rakon
Crystal Resonator	NUMBER	REVISION	INDICE	DATE
	5092	A	3	27-June-2016

W revision for preliminary data sheet. From A revision: approved data sheet in production.

1- Main Parameters

N°	Characteristics	Symbol	Value			Unit	Note
1.1	Nominal Frequency	F0		32		MHz	
1.2.1	Cut			AT			
1.2.2	Overtone			Fundamental			
1.2.3	Material			STD			
1.3	Load Capacitance	CL	9.5	10.0	10.5	pF	CL = 10pF ±0.5pF
1.4	Drive Level	P		50	100	µW	
1.5	Test conditions			IEC 444			
1.6	Package reference			SM07			Standard product

2- Tolerance and temperature

N°	Characteristics	Symbol	Min.	Nom.	Max.	Unit	Note
2.1	Temperature reference	T25		25		℃	
2.3	Freq. Adj. Tolerance	Fadj			10	±ppm	
2.4	Operating Temp. Range	OTR	-20		70	℃	
2.5	Storage Temp. Range	STR	-55		125	℃	
2.6	Freq. Variation with Temp. over	dF/dT			10	±ppm	

3- Electrical parameters

N°	Characteristics	Symbol	Min.	Nom.	Max.	Unit	Note
3.1	Motional Resistance	R1			40	Ohms	
3.2	Static Capacitance	C0		1.0	3 0	pF	

4- Ageing

4.1	Ageing	±2 ppm max over 1 year / ±10 ppm max over 10 years

6- Spurious

6.1	Ratio of unwanted response resistance to resonance resistance (PI network IEC 444)	Rs/R1	2 from F0 to F0+500kHz

7- Package / Pin Out

N°	Characteristics		Note / Unit
7.1	Package Ref.	SM07	See Last Page
7.2	Package Type	QESM07	3.2x2.5 mm
7.3	Maximum package height	0.75	mm.
7.4	Label	104990 (Rakon France code) T-YYWW (date code)	
7.7	Sealing Methode	RW	

8- Complementary specifications

8.1	Target : G-Sensitivity typical value from 30Hz to 1500Hz = 2.0 ppb/G max

9- Specification History

Version	Change	Date
A3	Remark about Manual soldering added on page 3.	June 27th 2016

Remark : FTR5092-A3 / 32 000MHz is fully compliant with catalogue part QESM07.10.HQ.10.10 / 32 000MHz

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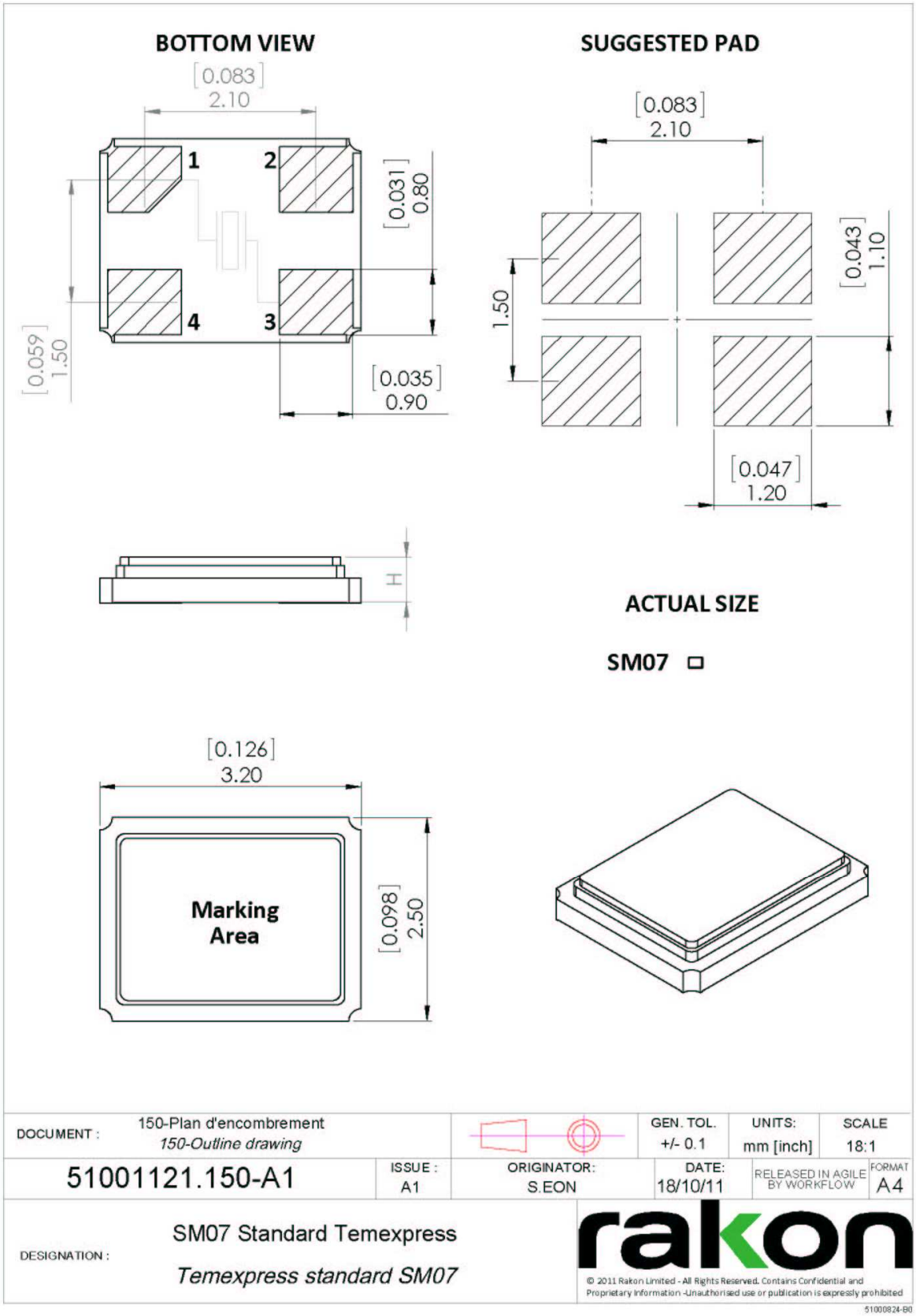

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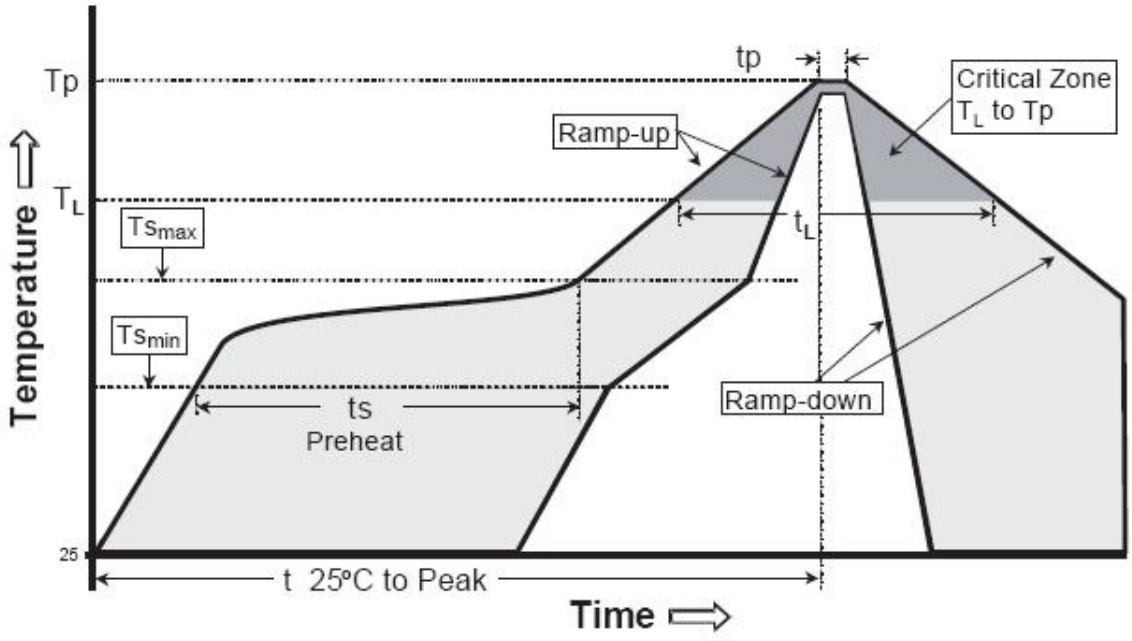
I REFLOW PROFILES

Profiles Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts max to Tp)	3℃/second max.
Preheat ■ Temperature Min (Ts min) ■ Temperature Max (Ts max) ■ Time (ts min to ts max)	 125℃ 200℃ 60~180 seconds
Time maintained above ■ Temperature (T_L) ■ Time (t_L)	 217℃ 60~150 seconds
Peak/Classification Temperature (Tp)	260℃
Time within 5℃ of actual Peak Temperature (t_p)	20~40 seconds
Ramp-down rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.
Suggest reflow times	**3 Times max**



Remark：To reference JEDEC J-STD-020C

In case of manual soldering (not recommended), the component shall remain within the electrical specifications after it soldered by electric iron, solder at 350 ± 10degC during 3-4 seconds max. Only one time. Recovery time : 2h ±0.5h. If those conditions are not respected, the caracteristics deterioration of destruction of the product may result.

Only leads of component may be soldered. Please avoid soldering another part of component.

When soldered on PCB, the remove of the crystal with electrical iron may also cause damage or destruction of the part.

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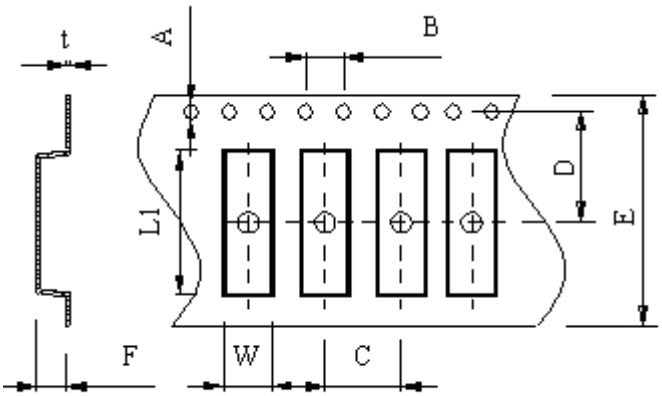
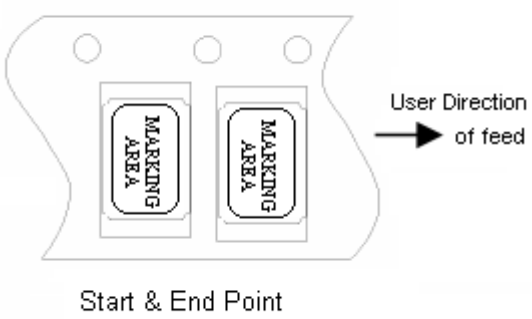
I PACKAGE

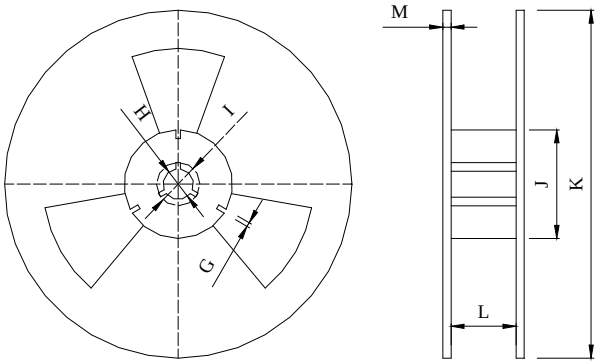
Tape Dimensions(unit : mm)





A	B	C	D	E	F	L1	W	t
1.50	4.0	4.0	3.5	8.0	1.0	3.4	2.7	0.3

Reel Dimensions(unit: mm)



G	H	I	J	K	L	M
2.5	13.5	21.6	60.0	178	9.5	1.6

*3000pcs/Reel

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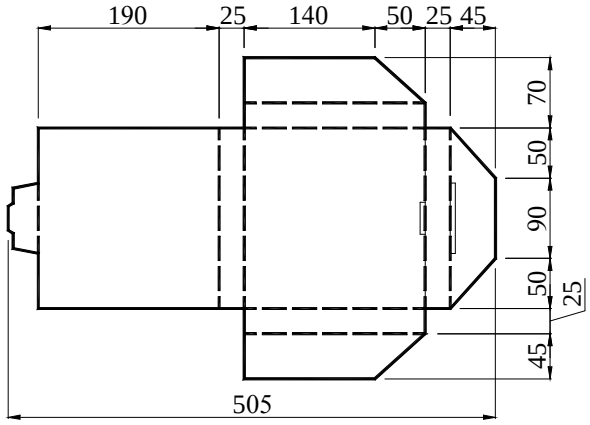
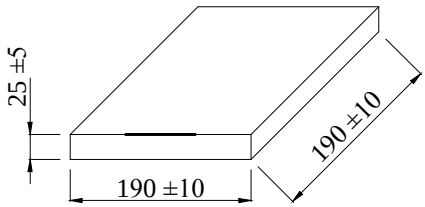
Inner Box Dimension (unit : mm)

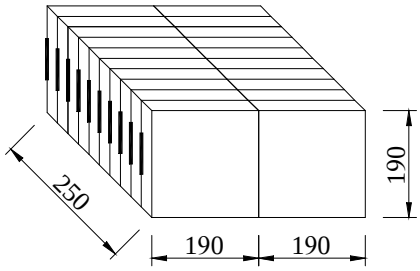
These information are given as an indication and are not contractual.

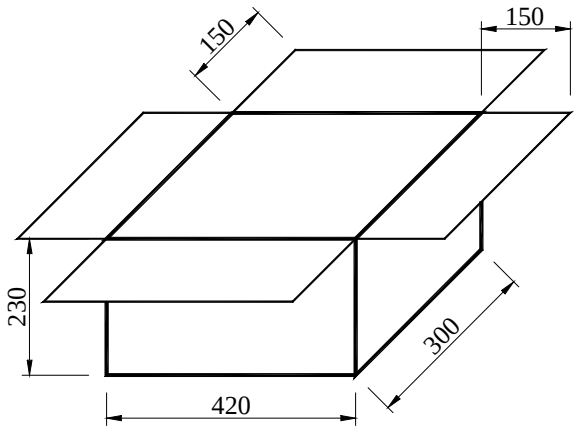




1 reel = 1 Inner box

Outer Box Dimension (unit : mm)





20 Inner boxes = 1 Carton
60kpcs = 1 Carton

Such carton is used only in case of shipment by 60Kpcs multiple. Outer Box could be different in case of lower quantities.

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I RELIABILITY SPECIFICATIONS

No.	Test Item	Test Conditions	Reference
1	High Temperature Storage	Temperature: 125℃±5℃ Time: 1000±12 Hours	MIL-STD-883E-1016
2	Temperature Cycle	Temperature 1: -55℃±5℃ Temperature 2: 125℃±5℃ Temperature change between T1 and T2 at soonest Run 1000 cycles, maintain T1 and T2 5minutes each in one cycle	JESD22 Method JA-104
3	Solder Heat Resistance	Pre-heat: 125℃ 60~120 Seconds Solder Temperature: 260℃±5℃ Time: 30 Seconds	MIL-STD-202F 210 E
4	Drop Test	3 Times Free Fall from 75cm height table to 3cm thickness hard wood board	MIL-STD-202F-203B
5	High Temperature, High Humidity Storage	Temperature: 85℃±5℃ Relative Humidity: 80%--85% Time: 250Hours±24 Hours	MIL-STD-202F-103B
6	Steam Aging	Temperature: 97℃±5℃ Time: 24 Hours 260℃ solder pot to check solderability	MIL-STD-883 C-1008.2B
7	Solderability	Dip in flux 5~10 seconds Temperature: 245℃±5℃ Time: 10 Seconds	MIL-STD-202F-208H
8	Aging	Temperature: 85℃±5℃ Time: 250±12Hours	MIL-STD-202 F-108A
9	Thermal Shock	Temperature 1: -55℃±5℃ Temperature 2: 125℃±5℃ Temperature change between T1 and T2: 5 seconds 100 cycles, maintain T1 and T2 for 30 minutes each in one cycle	MIL-STD-883E-1011.9B
10	Vibration	Frequency Range: 10Hz~2000Hz Amplitude: 1.5mm or 20G 4Hours in each direction, total 12Hours	MIL-STD-202F-204D