Measurement condition

Ambient temperature T_A:	23	°C
Input power level:	0	dBm
Terminating impedance:	50	Ohm (all ports)

Characteristics

D a t a L o w B a n d					**typ. value**		**tolerance / limit**		
Insertion loss RX1[1]			$a_{e,RX1}$		4.0	dB	max.	5.0	dB
Nominal frequency RX1[2]			$f_{N,RX1}$		-			1210.0	MHz
Passband RX1			PB_{RX1}		-		$f_{N,RX1}$ ±	44.0	MHz
Pass band variation RX1			$\Delta a_{e,RX1}$		1.3	dB	max.	3.0	dB
Absolute attenuation RX1[3]			$a_{abs,RX1}$						
600	MHz ...	1095	MHz		32	dB	min.	30	dB
1350	MHz ...	1525	MHz		37	dB	min.	30	dB
1525	MHz ...	1610	MHz		35	dB	min.	33	dB
1610	MHz ...	2400	MHz		32	dB	min.	30	dB
Group delay variation within PB_{RX1}					8.0	ns	max.	10	ns
Group delay variation (unit to unit)					± 2.0	ns	max.	± 5	ns
Return loss within PB_{RX1}					10.0	dB	min.	9	dB

D a t a H i g h B a n d					**typ. value**		**tolerance / limit**		
Insertion loss RX2[1]			$a_{e,RX2}$		4.0	dB	max.	5.0	dB
Nominal frequency RX2[2]			$f_{N,RX2}$		-			1567.5	MHz
Passband RX2			PB_{RX2}		-		$f_{N,RX2}$ ±	42.5	MHz
Pass band variation RX2			$\Delta a_{e,RX2}$		0.5	dB	max.	3.0	dB
Absolute attenuation RX2[3]			$a_{abs,RX2}$						
600	MHz ...	1166	MHz		32	dB	min.	30	dB
1166	MHz ...	1254	MHz		35	dB	min.	33	dB
1254	MHz ...	1425	MHz		35	dB	min.	30	dB
1705	MHz ...	2400	MHz		40	dB	min.	30	dB
Group delay variation within PB_{RX2}					4.0	ns	max.	6	ns
Group delay variation (unit to unit)					± 2.0	ns	max.	± 5	ns
Return loss within PB_{RX2}					10.0	dB	min.	9	dB

C o m m o n D a t a		**typ. value**		**tolerance / limit**	
Input power level		-		max. 25	dBm
Operating temperature range	OTR	-		- 40 °C ... + 85 °C	
Storage temperature range		-		- 40 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f[4]	-74	ppm/K	-	

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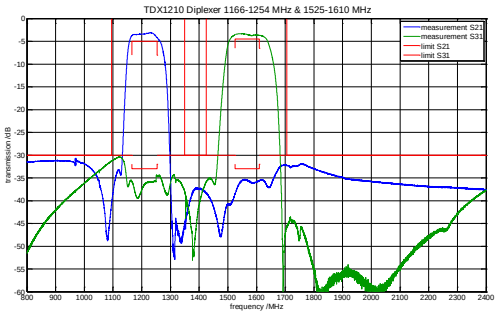
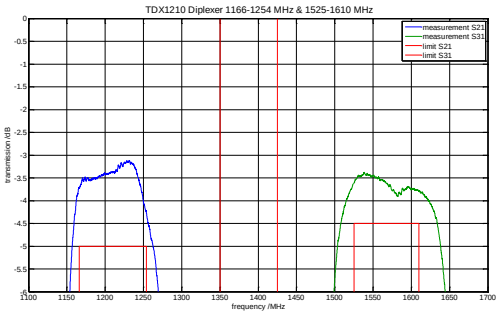
Remarks:
1) The maximum attenuation in the pass bands is defined as the insertion loss $a_{e,RXi}$ (i = 1, 2).
2) The nominal frequency $f_{N,RXi}$ (i = 1, 2) is fixed at 1210.0 MHz and 1567.5 MHz respectively without any tolerance or limit.
3) The values of absolute attenuation a_{abs} are guaranteed for the whole operating temperature range. The frequency shift of the diplexer in the operating temperature range is included in the production tolerance scheme.
4) $\Delta f = TC_f(T - T_A)f_N$

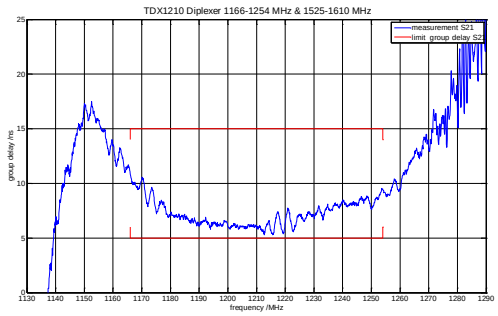
Generated:

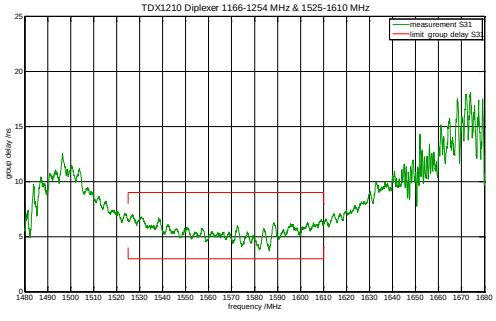
Checked / Approved:

Diplexer characteristic









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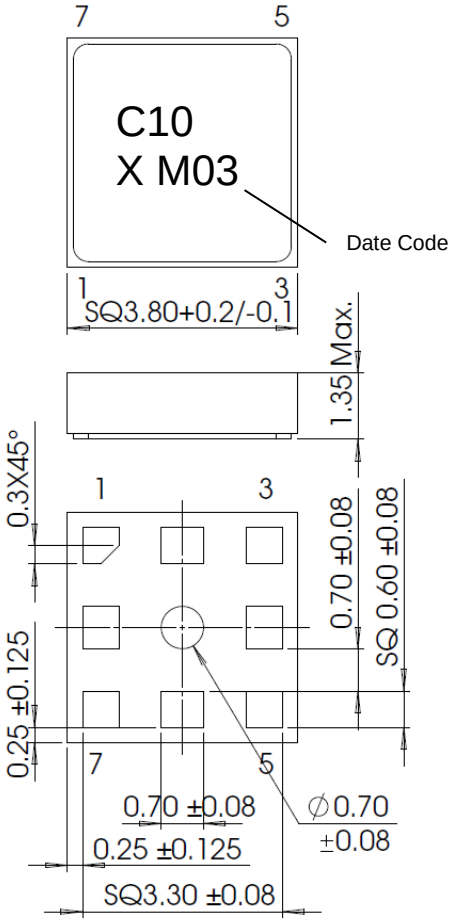
Construction and pin connection

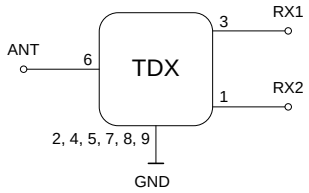
(All dimensions in mm)



1	RX2
2	GND
3	RX1
4	GND
5	GND
6	Input ANT
7	GND
8	GND
9	GND

Date code:	Year + week
M	2020
N	2021
P	2022
...	

50 Ω Test circuit



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Stability characteristics, reliability

After the following tests the filter shall meet the whole specification:

1. Shock: 500 g, 1 ms, half sine wave, 3 shocks each plane;
   DIN IEC 68 T2 - 27

2. Vibration: 10 Hz to 2000 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 68 T2 - 6

3. Change of temperature: -55 °C to 125 °C / 15 min. each / 100 cycles
   DIN IEC 68 part 2 – 14 Test N

4. Resistance to solder heat (reflow): reflow possible: three times max.;
   for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

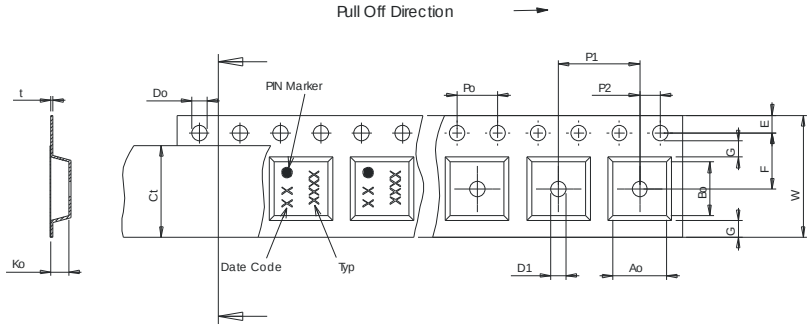
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

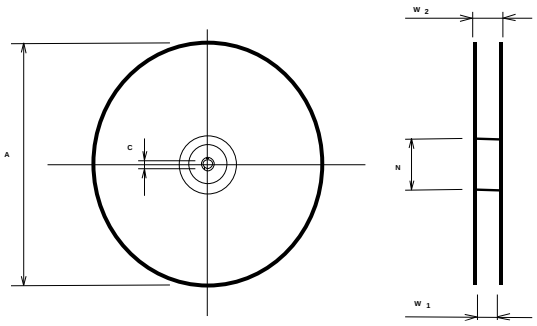
This filter is RoHS compliant (2011/65/EU)

Packing

Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

max. number of components per reel:	3000
length of empty cavities at start:	min. 300 mm
length of empty cavities at start including leader:	min. 500 mm
length of trailer:	min. 300 mm





Tape (all dimensions in mm)

W	:	12.00	± 0.3
Po	:	4.00	± 0.1
Do	:	1.50	+0.1/-0
E	:	1.75	± 0.1
F	:	5.50	± 0.05
G(min)	:	0.75	
P2	:	2.00	± 0.05
P1	:	8.00	± 0.1
D1(min)	:	1.50	
Ao	:	4.30	± 0.1
Bo	:	4.30	± 0.1
Ct	:	9.5	± 0.1
K_0	:	1.8	± 0.1
t	:	0.30	± 0.05

Reel (all dimensions in mm)

A	:	330	
W1	:	12.4	+2/-0
W2(max)	:	18.4	
N(min)	:	50	
C	:	13.0	+0.5/-0.2

The minimum bending radius is 45 mm.

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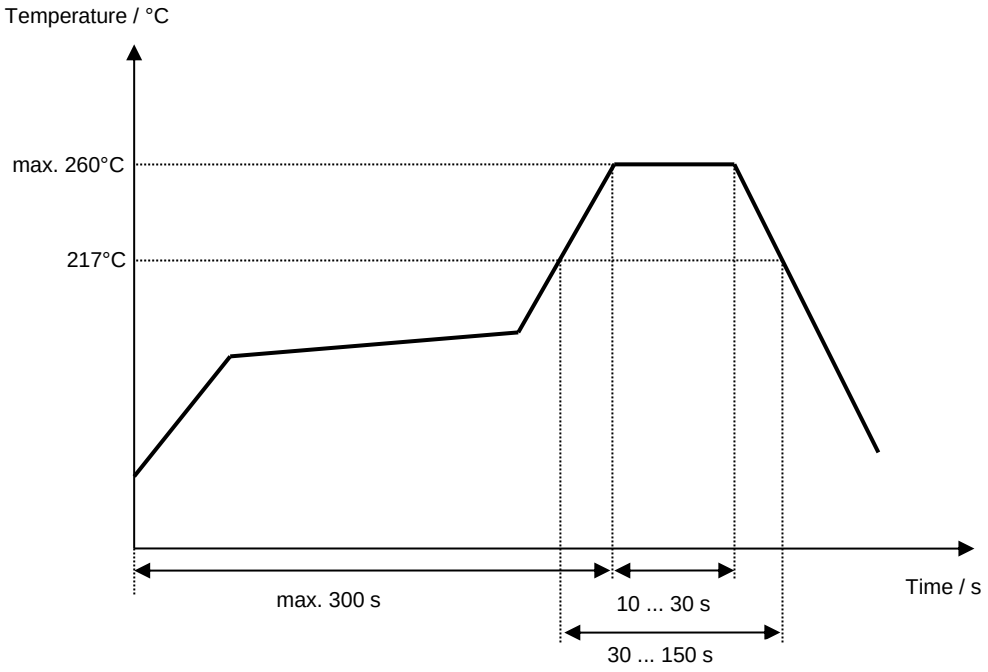
Air reflow temperature conditions

Conditions	**Exposure**
Average ramp-up rate (30°C to 217°C)	less than 3°C/second
> 100°C	between 300 and 600 seconds
> 150°C	between 240 and 500 seconds
> 217°C	between 30 and 150 seconds
Peak temperature	max. 260°C
Time within 5°C of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50°C)	less than 6°C/second
Time from 30°C to Peak temperature	no greater than 300 seconds

Chip-mount air reflow profile



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History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Buchleitner	10.09.2015
2.0	- High band 1567.5 +/- 42.5 MHz	Buchleitner	17.09.2015
3.0	- Frequency ranges for absolute attenuation adjusted to RX1 and RX2 passband frequencies, group delay variation in RX1 band max. 10 ns, absolute attenuation for RX2 in RX1 band min. 33 dB, correction data code (year code), stability characteristics and reliability acc. company standars, some format changes	Buchleitner	02.02.2016
3.1	Diplexer characteristic added	Buchleitner	04.02.2016
3.2	Diplexer characteristic format changed, missing unit for unit to unit variation of group delay inserted	Buchleitner	09.02.2016
3.3	Typo on page 2, remark 2	Buchleitner	18.01.2017
4.0	Construction and pin connection drawing	Buchleitner	22.01.2020

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