

Microchip**Filter specification****TFS 480C****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	200	Ω
Output:	200	Ω

Characteristics

Remark:

The nominal frequency f_N is fixed at 480,0 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 480C is the insertion loss a_e . All specified data are met within the operating temperature range.

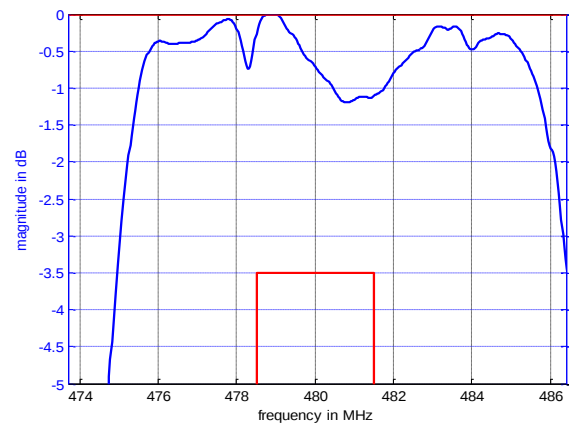
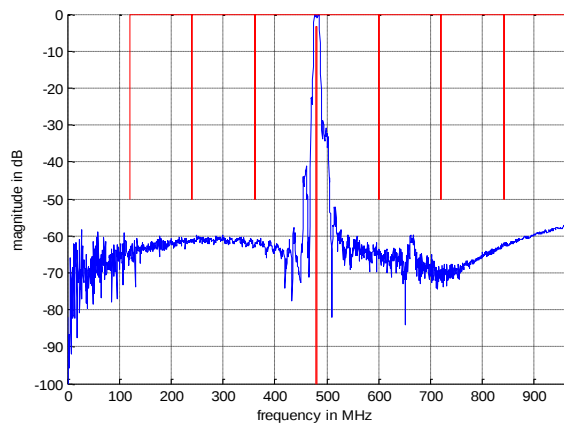
D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)		a_e	1,6	dB	3,5	dB
Nominal frequency		f_N	-		480,0	MHz
Centre frequency		f_C	480,0	MHz	-	
Bandwidth 3 dB		BW	11,4	MHz	-	
Relative attenuation		a_{rel}				
@	120,00 MHz		63	dB	min.	50 dB
@	240,00 MHz		61	dB	min.	50 dB
@	360,00 MHz		62	dB	min.	50 dB
@	600,00 MHz		62	dB	min.	50 dB
@	720,00 MHz		69	dB	min.	50 dB
@	840,00 MHz		63	dB	min.	50 dB
@	960,00 MHz		58	dB	min.	50 dB
Input power level			-		max.	5 dBm
Operating temperature range		OTR	-		- 40 °C ... + 90 °C	
Storage temperature range			-		- 45 °C ... + 95 °C	
Temperature coefficient of frequency		TC_f *	-32	ppm/K		

*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

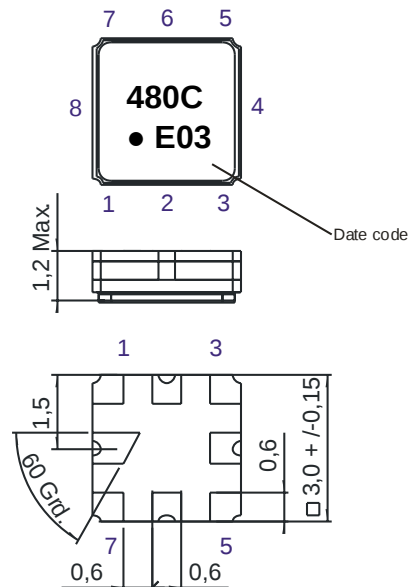
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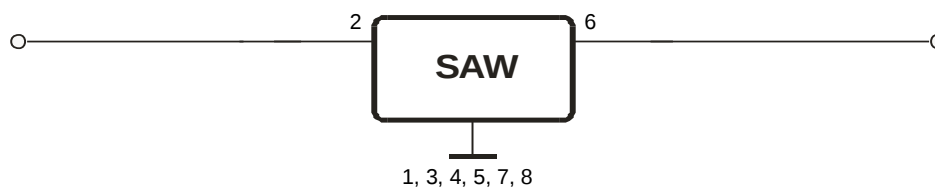
Filter characteristic**Construction and pin connection**

(All dimensions in mm)



1	Ground
2	Input
3	Ground
4	Ground
5	Ground
6	Output
7	Ground
8	Ground

Date code:	Year + week
E	2014
F	2015
G	2016
...	

200 Ω Test circuit**Microchip Frequency Technology GmbH****Potsdamer Straße 18****D 14 513 TELTOW / Germany****Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30**

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Stability characteristics, reliability

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

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0.35 mm or 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, see page 4: "Air reflow temperature conditions"

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

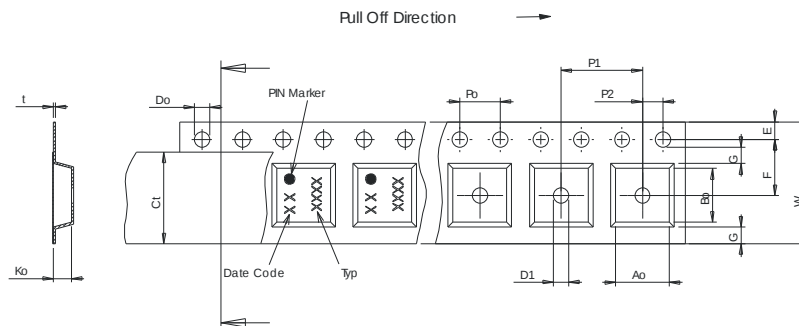
Packing

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;

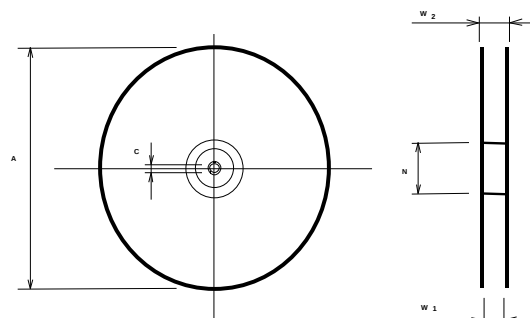
max. pieces of filters per reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 8,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 3,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 4,00 ± 0,1
D1(min)	: 1,50
Ao	: 3,25 ± 0,1
Bo	: 3,25 ± 0,1
Ct	: 5,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 8,4 +1,5/-0
W2(max)	: 14,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

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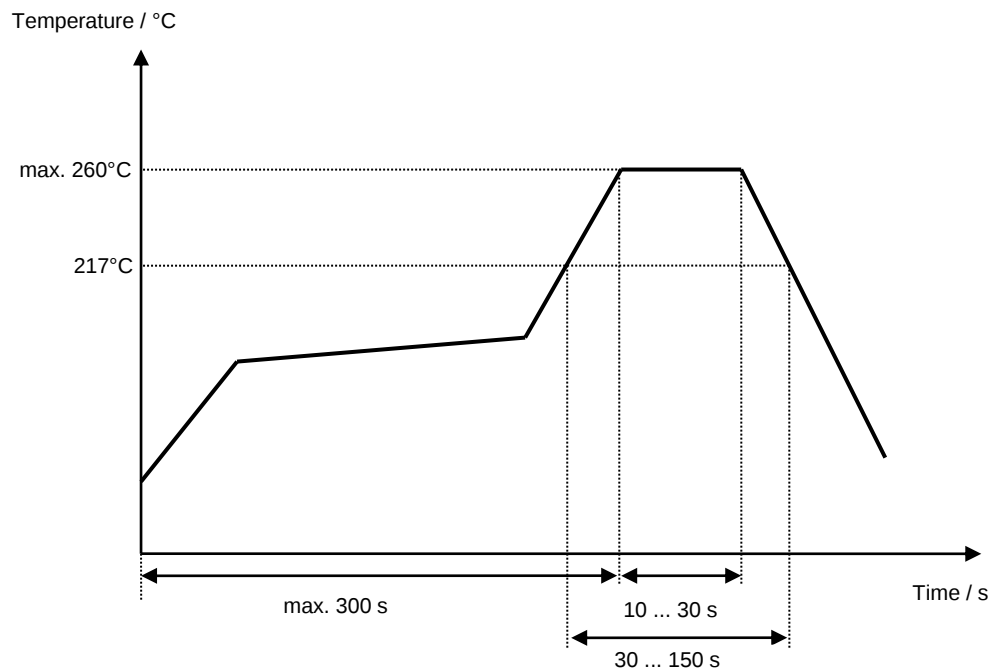
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Air reflow temperature conditions

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**Microchip Frequency Technology GmbH****Potsdamer Straße 18****D 14 513 TELTOW / Germany****Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30**

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Microchip**Filter specification****TFS 480C****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	11.10.2007
1.1	- Add typical values, Add filter characteristic - Generation of filter specification	S. Channaa	16.01.2008
2.0	- Changed pull off direction from reel	Schönbein	29.05.2012
2.1	- maximum input power updated	Kortenbeutel	16.01.2014

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