

VI TELEFILTER**Filter Specification****TFS 456 - 1/3****Measurement condition**

Ambient temperature:	23 °C
Input power level:	0 dBm
Input power level (impulse work):	+16 dBm
Source impedance:	50 Ω
Load impedance:	50 Ω

Construction and pin connection

see page 2

Characteristics**Remark:**

Reference level for the relative attenuation a_{rel} of the TFS 456 is the minimum of the pass band attenuation a_{min} . The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e . The centre frequency f_0 is the arithmetic mean value of the upper and lower frequencies at the 3dB filter attenuation level relative to the insertion loss a_e . The nominal frequency f_N is fixed on 456,3 MHz without tolerance. The given values for the relative attenuation a_{rel} and for the group delay ripple have to be reached at the frequencies given below also if the centre frequency f_0 is shifted due to the temperature coefficient of frequency TC_f in the operating temperature range and due to a production tolerance for the centre frequency f_0 .

D a t a		typ. value	Variation/ Limitation
Insertion loss (Reference level)	$a_e = a_{mi}$	-	max. 3,5 dB
Nominal frequency	f_N	-	456,3 MHz
Centre frequency	f_0	456,3 MHz	-
3 dB - bandwidth	BW	8,5 MHz	-
Ripple in pass band $f_N \pm 2$ MHz	BW	-	max. 3 dB
Relative attenuation	a_{rel}		
256.3 MHz ... 418 MHz		-	min. 65 dB
418 MHz ... 431.3 MHz		-	min. 40 dB
481.3 MHz ... 504 MHz		-	min. 40 dB
504 MHz ... 656.3 MHz		-	min. 65 dB
$f_N - 11,25$ MHz		-	min. 60 dB
Temperature coefficient of frequency	TC_f	-32 ppm/K	-
Operating temperature range			- 20 °C ... + 75 °C

Generated: _____**Checked / approved:** _____

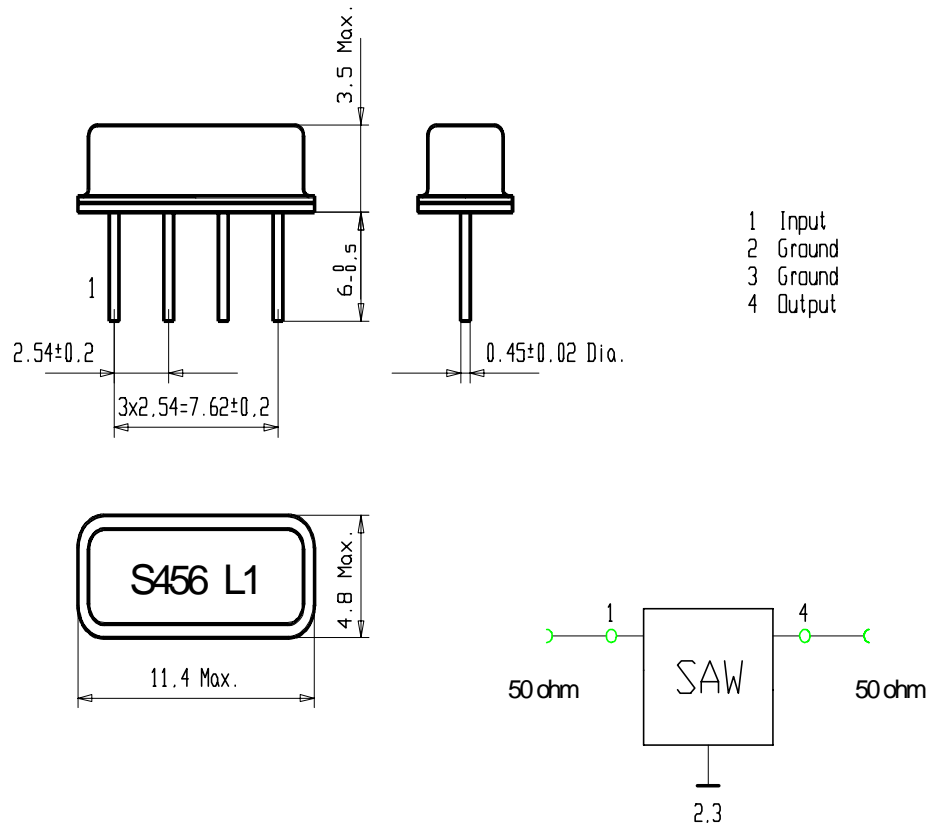
VI TELEFILTER
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-52 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

Vectron International, Inc.
 267 Lowell Road
 Hudson, NH 03051 / USA
 Tel: (603) 598-0070 Fax: (603) 598-0075
 E-Mail: vti@vtinh.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

VI TELEFILTER**Filter Specification****TFS 456 - 2/3****Construction, pin connection and 50 Ω matching network**

(All dimensions in mm)



Air reflow temperature conditions

1st and 2nd air reflow profile

Name:	pre-heating periods	main-heating periods	peak temperature
Temperature:	150 °C - 170 °C	over 200 °C	255 °C ± 5 °C
Time:	60 sec. - 90 sec.	20 sec. - 25 sec.	

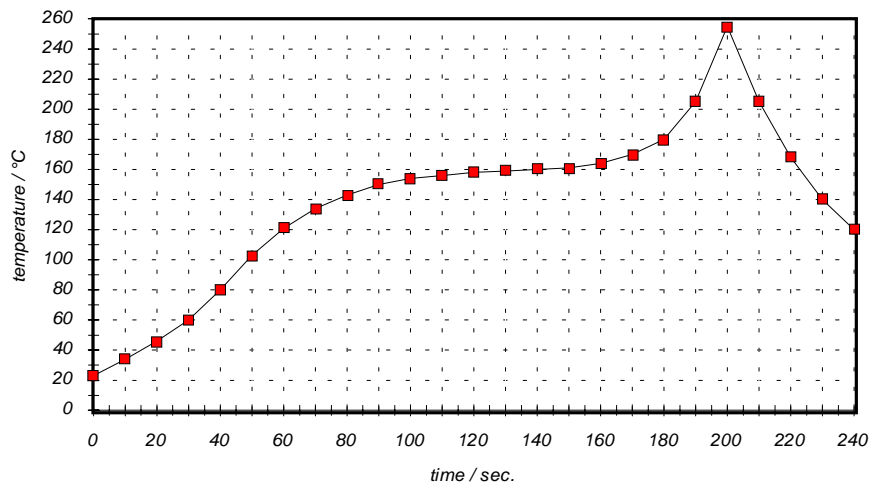
Chip-mount air reflow profile

Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

time / sec.	temperature / °C	time / sec.	temperature / °C
0	23	140	160
10	34	150	161
20	46	160	164
30	60	170	170
40	80	180	180
50	103	190	205
60	121	195	230
70	134	200	255
80	143	205	230
90	150	210	205
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120