

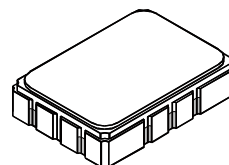
# Preliminary




For prototype or pre-production sample please contact RFM Sales.

## SF2067B

## 172.8 MHz SAW Filter



SMP-03

- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **50Ω Single Ended Input 200Ω Balanced Output**
- **Complies with Directive 2002/95/EC (RoHS)** 

### Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	30	VDC
Storage Temperature Range	-40 to +85	°C
Max Soldering Temperature	265°C for 10 s	


### Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Frequency	$f_N$	1	172.8			MHz
Minimum Insertion Attenuation	$\alpha_{min}$			10.6	12.5	dB
Amplitude Ripple (p-p)	$f_N \pm 4.42$ MHz	$\Delta\alpha$		0.8	1.5	
Group Delay Ripple (p-p)	$f_N \pm 4.42$ MHz	$\Delta\tau$		70	200	ns
Group Delay	@ $f_N$	$\tau$		780	1000	
VSWR	$f_N \pm 4.42$ MHz			1.3:1		
Phase Ripple (p-p)	$f_N \pm 4.42$ MHz	$\Delta\phi\tau$		10		
Pass Bandwidth	$\alpha_{rel} \leq 1.5$ dB	$B_{1.5dB}$	8.84	9.2		MHz
Adjacent Channel Selectivity		ACS	17	22		dB
Relative Attenuation (relative to $\alpha_{min}$ )	$f_N \pm 8.0$ to $f_N \pm 11.0$ MHz	$\alpha_{rel}$	27	32		dB
	$f_N \pm 11$ to $f_N \pm 25.0$ MHz		35	45		dB
	$f_N \pm 25$ to $f_N \pm 36.8$ MHz		45	60		dB
	$f_N \pm 36.8$ to $f_N \pm 100.0$ MHz		55	70		dB
Operating Temperature Range	$T_A$	1	-40		+85	°C
Case Style		5	SMP-03 7 x 5 mm Nominal Footprint			
Lid Symbolization (YY=year, WW=week, S=shift) See note 4			RFM SF2067B YYWWS			

### Electrical Connections

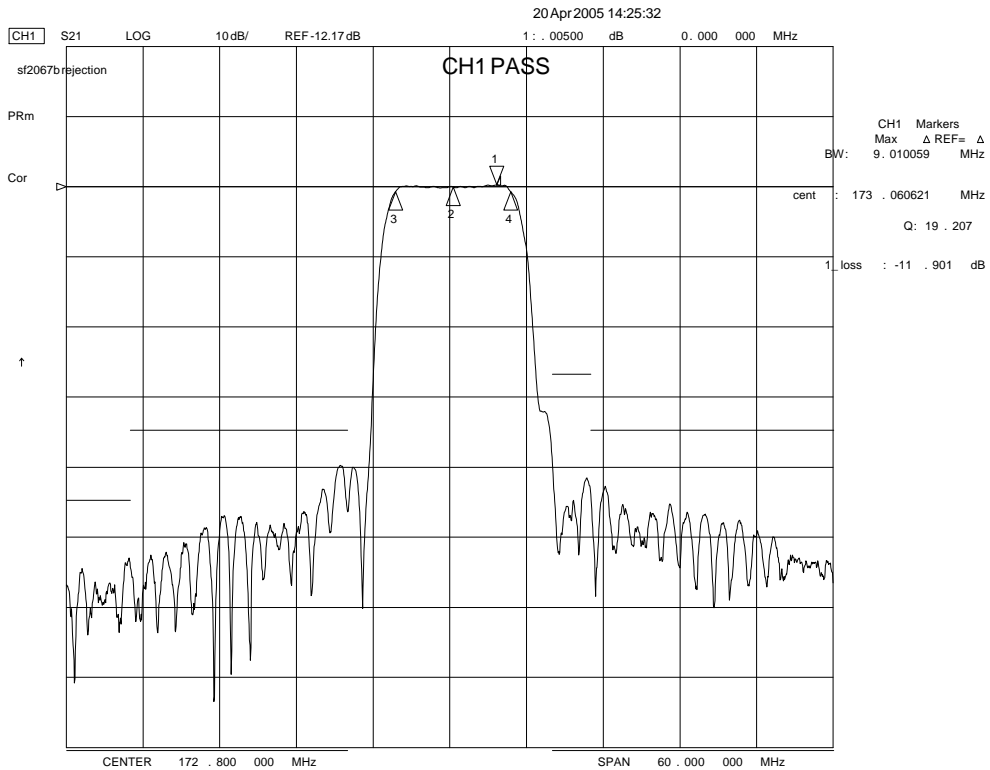
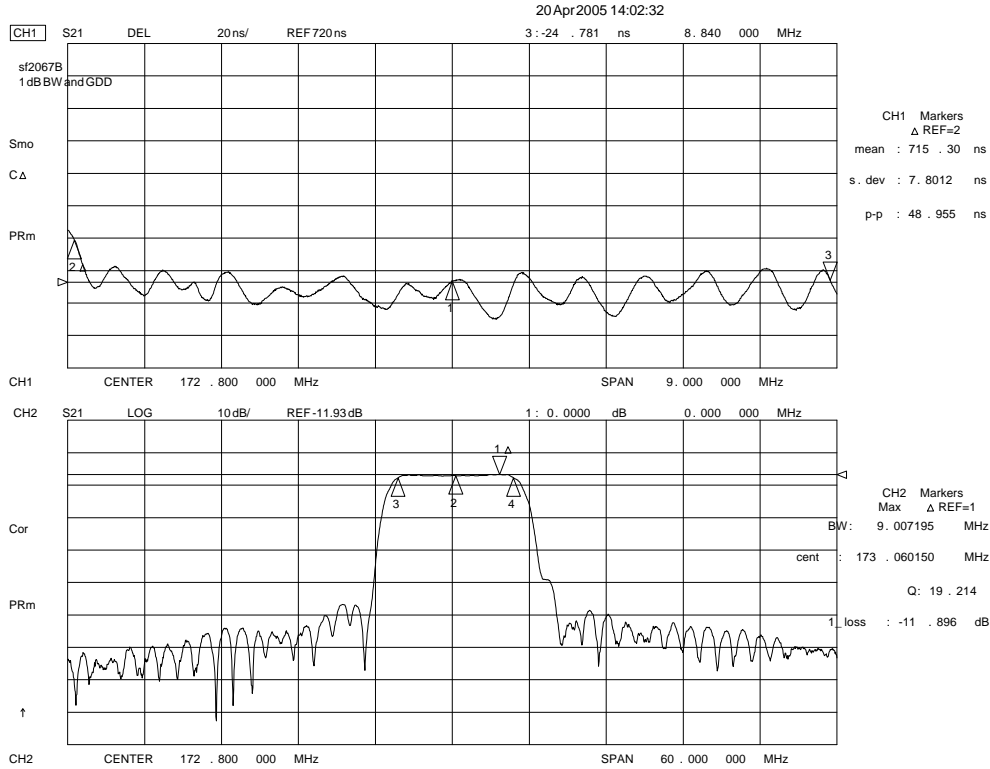
Connection	Terminals
Port 1 Hot	10
Port 1 Ground Return	1
Port 2 Hot	5
Port 2 Hot	6
Case Ground	All Others

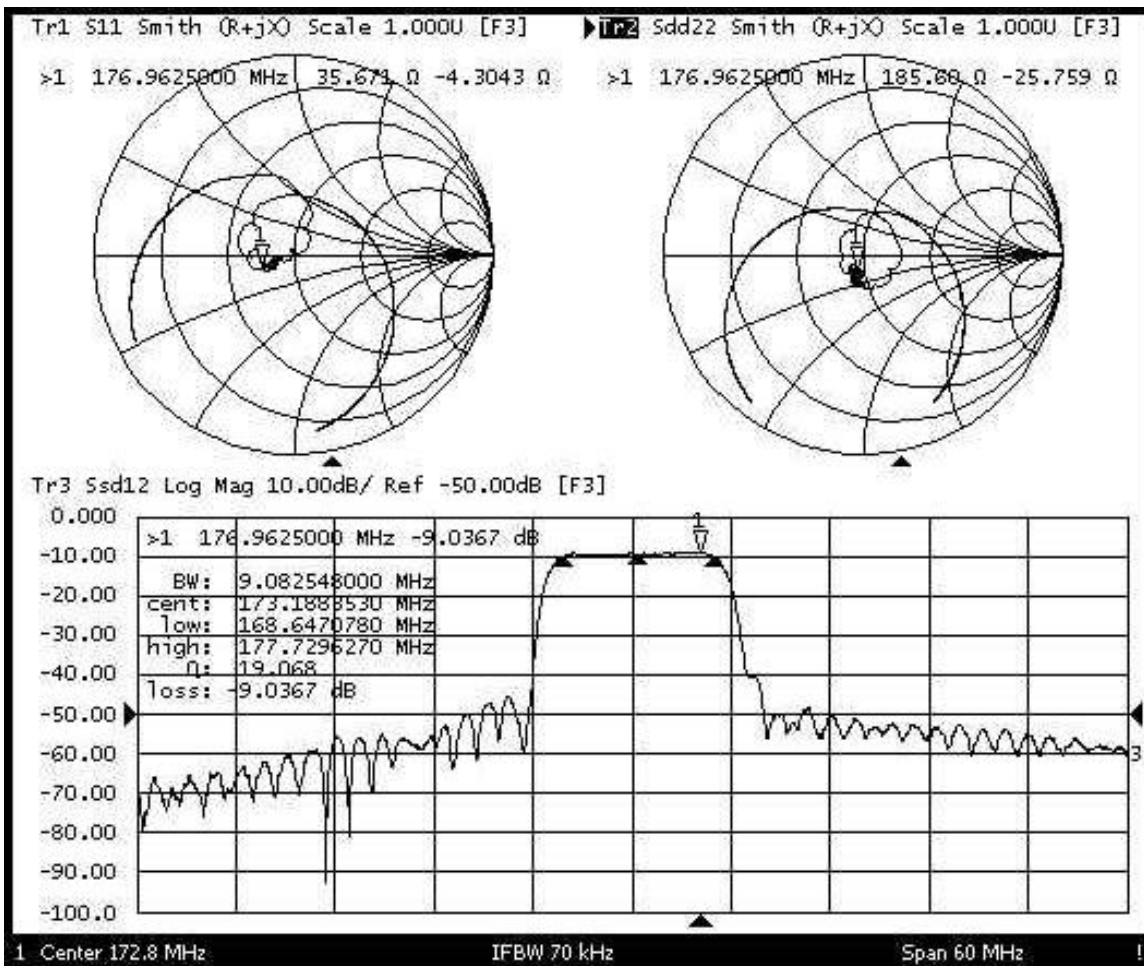
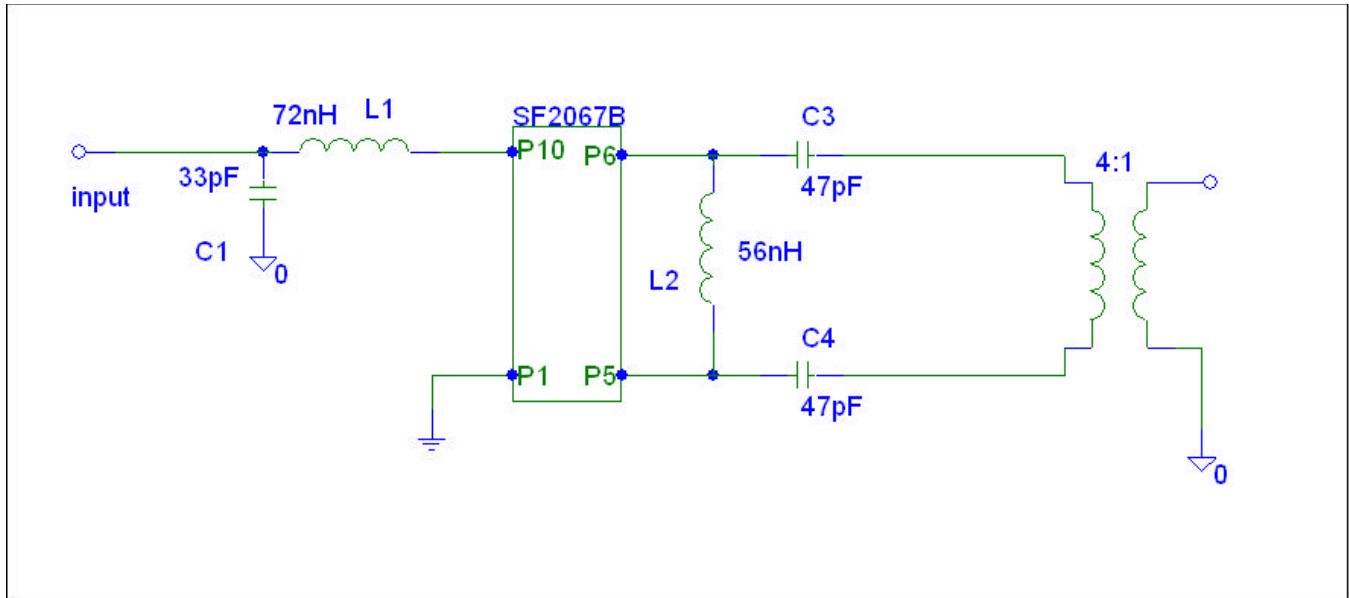
### Notes:

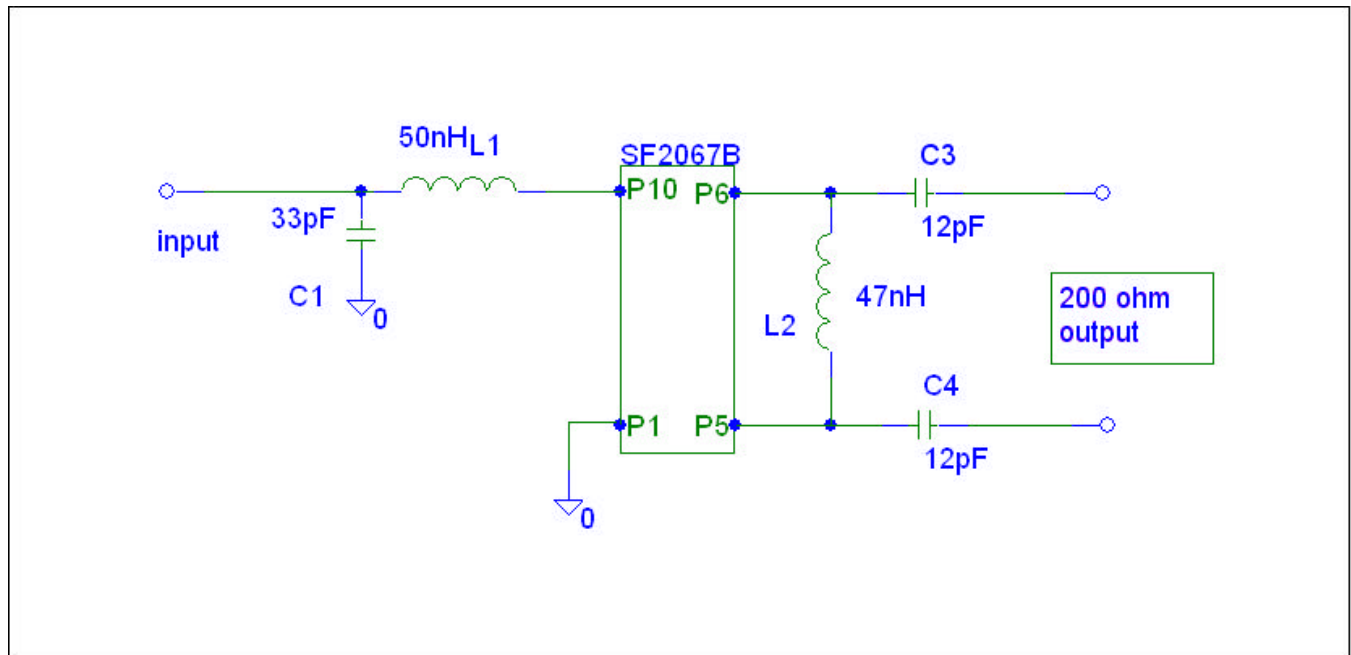
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_c$ .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. The design, manufacturing process, and specifications of this filter are subject to change.
5. Tape and Reel Standard Per ANSI / EIA 481.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
9. ©Copyright 1999, RF Monolithics Inc.
10. Electrostatic Sensitive Device. Observe precautions for handling 

# 172.8 MHz

# SAW Filter

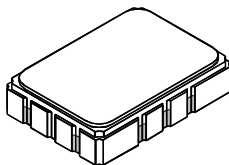




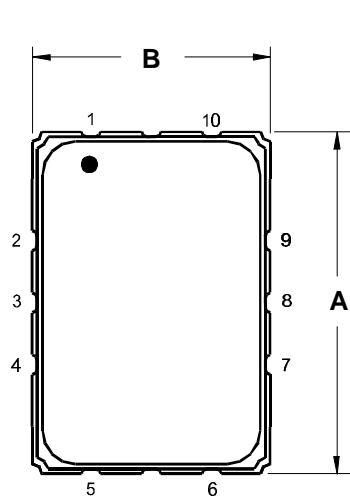
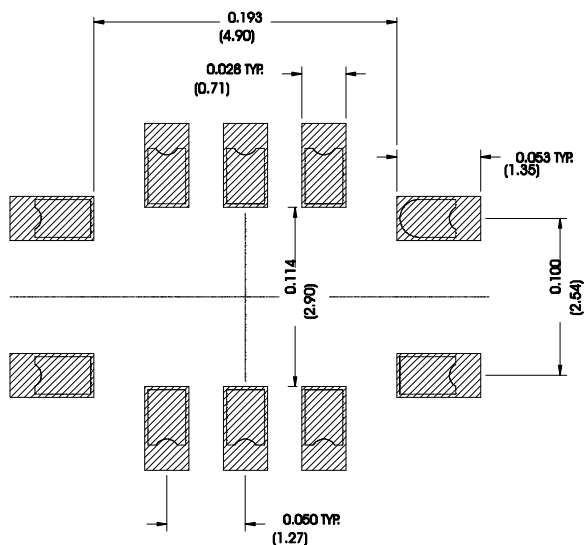


# SMP-03 Case

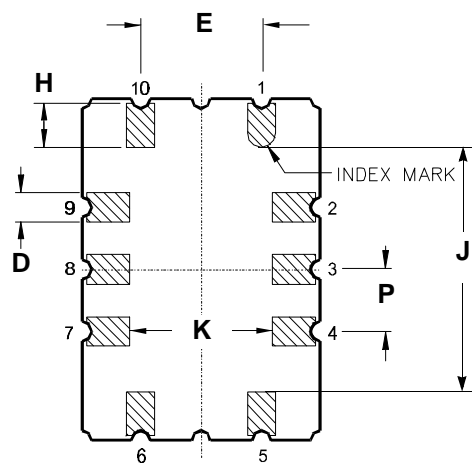
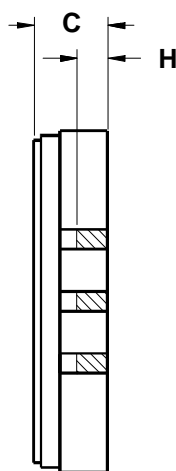
## 10-Terminal Ceramic Surface-Mount Case 7 x 5 mm Nominal Footprint



### Recommended PCB Footprint



TOP VIEW



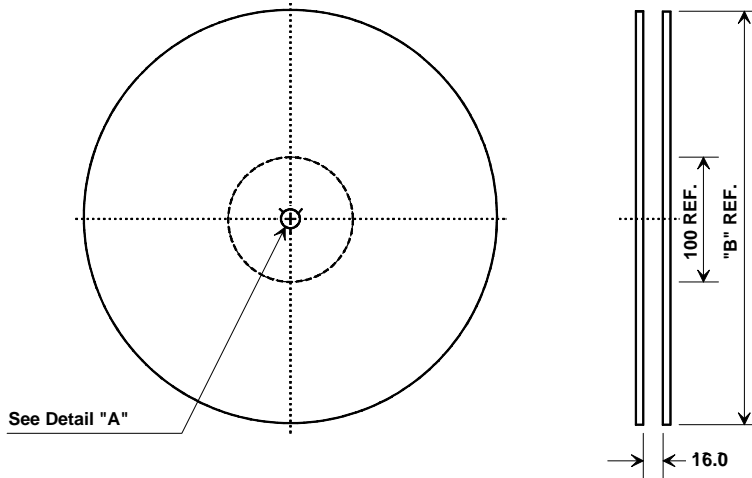
BOTTOM VIEW

Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.50	1.65	2.00	0.059	0.065	0.079
D	.47	0.60	.73	0.019	0.024	0.029
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.0	1.13	0.034	0.039	0.044
J	4.87	5.00	5.13	0.192	0.197	0.202
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

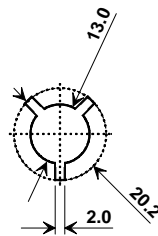
Materials	
Solder Pad Termination	Au plating 30 - 60 μinches (76.2-152 μm) over 80-200 μinches (203-508 μm) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 μinches Thick
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

Electrical Connections		
Connection		Terminals
Port 1	Input or Return	10
	Return or Input	1
Port 2	Output or Return	5
	Return or Output	6
Ground		All others
Single Ended Operation		Return is ground
Differential Operation		Return is hot

## Tape and Reel Specifications

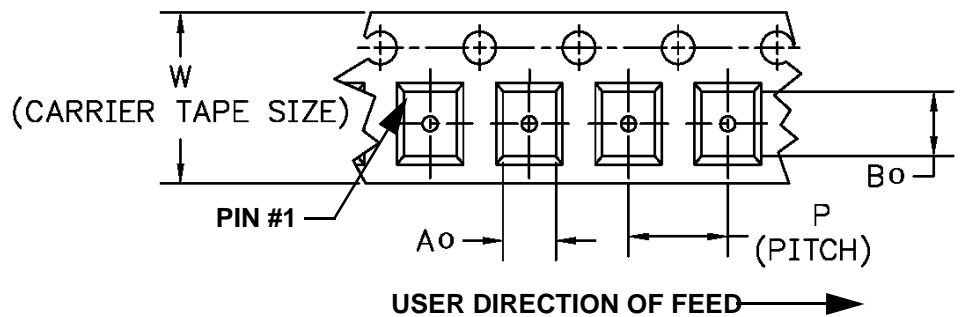
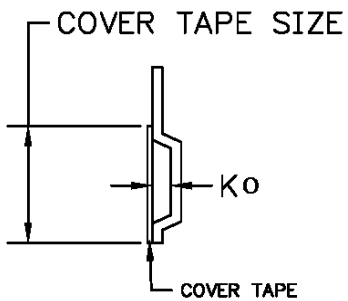


"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000



### COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
<b>Ao</b>	5.5 mm
<b>Bo</b>	7.5 mm
<b>Ko</b>	2.0 mm
<b>Pitch</b>	8.0 mm
<b>W</b>	16.0 mm



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