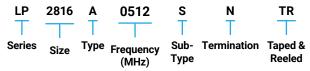
Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A0512SNTR - LGA Termination





HOW TO ORDER





FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

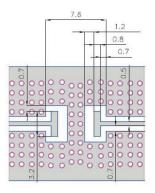
- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_p, 4 hours

Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and

POWER RATING

15W Continuous

RECOMMENDED PAD LAYOUT



ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

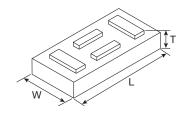
FEATURES

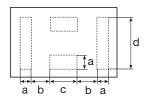
- Small size: 7x4x1.2 (LxWxT)
- Frequency: 512MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- · Mobile communications
- Satellite TV receivers
- · Vehicle location systems
- · Wireless LAN's

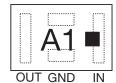
DIMENSIONS (BOTTOM VIEW): mm (inches)





L	7.00±0.30 (0.276±0.012)			
w	4.00±0.20 (0.157±0.008)			
Т	1.2 max (0.047 max)			

а	0.60±0.15 (0.024±0.006)				
b	1.40±0.15 (0.055±0.006)				
С	2.00±0.15 (0.079±0.006)				
d	3.00±0.15 (0.118±0.006)				

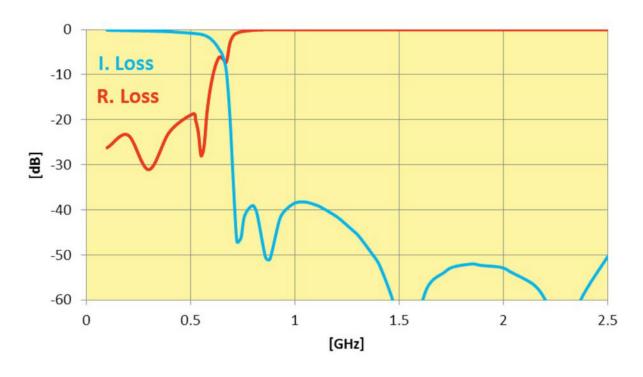


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A0512SNTR - LGA Termination



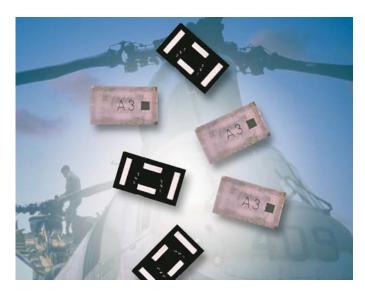
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	512	MHz	
Rejection @720MHz	-40	dB	Min.
Rejection @1024MHz	-35	dB	Min.
Rejection 1.5-2.5GHz	-50	dB	Min.
Insertion Loss @512MHz	-0.85	dB	Max.
R Loss @512MHz	-18	dB	
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A0680SNTR - LGA Termination





ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

FEATURES

- Small size: 7x4x1.2 (LxWxT)
- Frequency:680MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- · Mobile communications
- Satellite TV receivers
- GPS
- · Vehicle location systems
- · Wireless LAN's

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_D, 4 hours

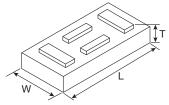
TERMINATION

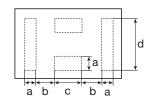
Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

POWER RATING

15W

DIMENSIONS (BOTTOM VIEW): mm (inches)

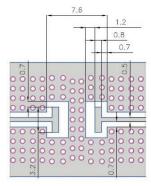


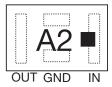


L	7.00±0.30 (0.276±0.012)		
w	4.00±0.20 (0.157±0.008)		
Т	1.2 max (0.047 max)		

а	0.60±0.15 (0.024±0.006)
b	1.40±0.15 (0.055±0.006)
С	2.00±0.15 (0.079±0.006)
d	3.00±0.15 (0.118±0.006)

RECOMMENDED PAD LAYOUT



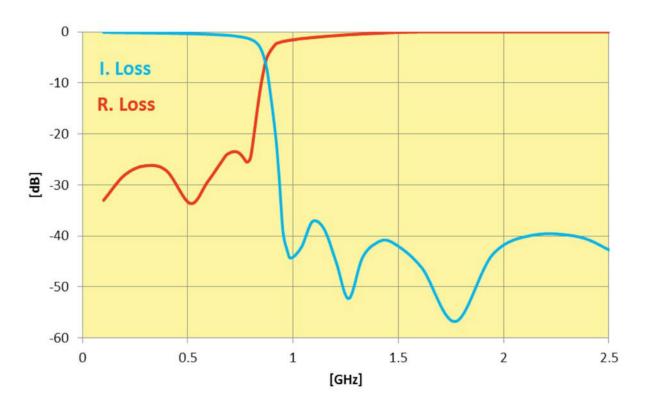


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A0680SNTR - LGA Termination



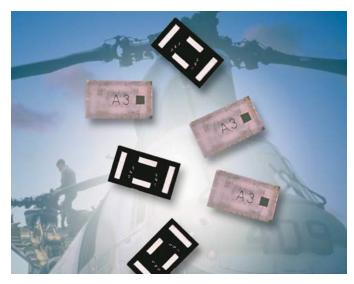
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	680	MHz	
Rejection @950MHz	-36	dB	Min.
Rejection 1.36GHz-2.5GHz	-40	dB	Min.
Insertion Loss @680MHz	-0.7	dB	Max.
R Loss @680MHz	-23	dB	
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1300SNTR - LGA Termination





ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

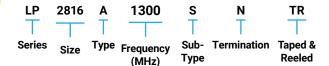
FEATURES

- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1300MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- · Mobile communications
- Satellite TV receivers
- GPS
- Vehicle location systems
- · Wireless LAN's

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_D, 4 hours

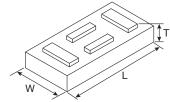
TERMINATION

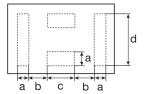
Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

POWER RATING

15W

DIMENSIONS (BOTTOM VIEW): mm (inches)

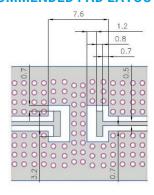


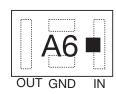


	7.00±0.30
_	(0.276±0.012)
147	4.00±0.20
W	(0.157±0.008)
-	1.2 max
	(0.047 max)

	0.60±0.15
а	(0.024±0.006)
b	1.40±0.15
В	(0.055±0.006)
	2.00±0.15
С	(0.0 9±0.006)
d	3.00±0.15
a	(0.118±0.006)

RECOMMENDED PAD LAYOUT



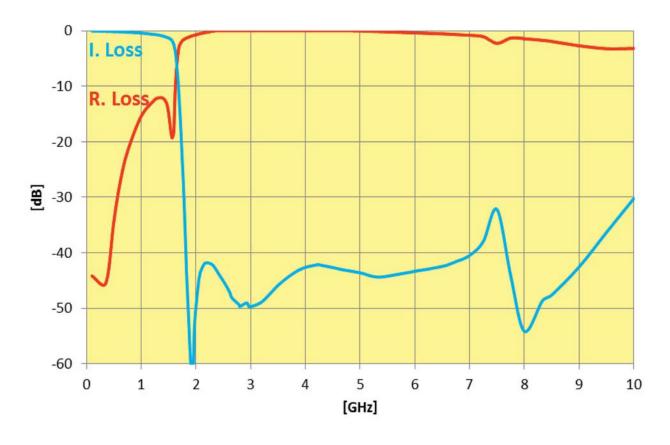


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1300SNTR - LGA Termination



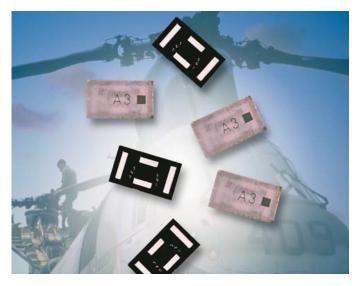
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1300	MHz	
Rejection @1.82GHz	-40	dB	Min.
Rejection 2GHz-7GHz	-40	dB	Min.
Rejection 7GHz-10GHz	-30	dB	Min.
Insertion Loss @1300MHz	-0.85	dB	Max.
Return Loss @1300MHz	-15	dB	Тур.
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1400SNTR - LGA Termination





ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

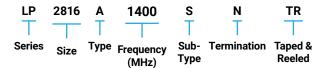
FEATURES

- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1400MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- · Mobile communications
- Satellite TV receivers
- **GPS**
- Vehicle location systems
- · Wireless LAN's

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_D, 4 hours

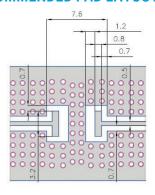
TERMINATION

Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

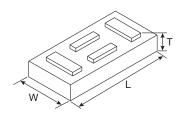
POWER RATING

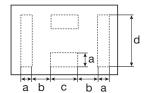
15W

RECOMMENDED PAD LAYOUT



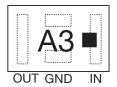
DIMENSIONS (BOTTOM VIEW): mm (inches)





L	7.00±0.30 (0.276±0.012)
W	4.00±0.20 (0.157±0.008)
Т	1.2 max (0.047 max)

а	0.60±0.15 (0.024±0.006)			
b	1.40±0.15 (0.055±0.006)			
С	2.00±0.15 (0.079±0.006)			
d	3.00±0.15 (0.118±0.006)			

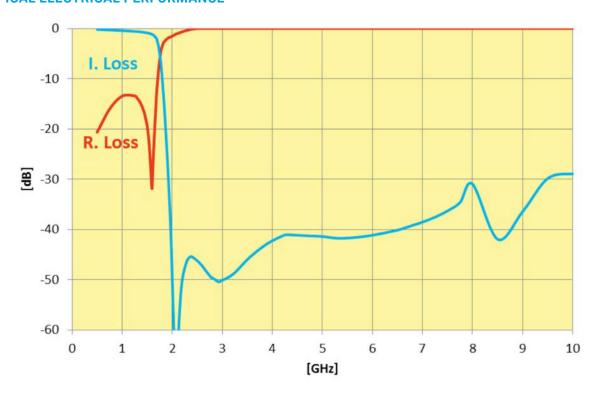


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1400SNTR - LGA Termination



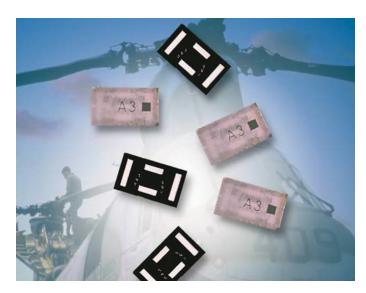
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1400	MHz	
Rejection @1960MHz	-35	dB	Min.
Rejection 2.1GHz-6GHz	-40	dB	Min.
Rejection 6GHz-9GHz	-30	dB	Min.
Insertion Loss @1400MHz	-0.75	dB	Max.
R Loss @1400MHz	-15	dB	
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1600SNTR - LGA Termination





- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1600MHz
- · Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- · RoHS compliant

ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

FEATURES

- · Taped and reeled

APPLICATIONS

- · Mobile communications
- · Satellite TV receivers
- GPS
- Vehicle location systems
- Wireless LAN's

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample

- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_R, 4 hours

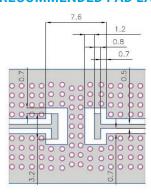
TERMINATION

Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

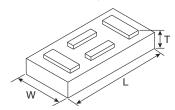
POWER RATING

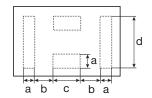
15W

RECOMMENDED PAD LAYOUT



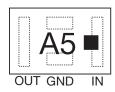
DIMENSIONS (BOTTOM VIEW): mm (inches)





L	7.00±0.30 (0.276±0.012)
W	4.00±0.20 (0.157±0.008)
Т	1.2 max (0.047 max)

а	0.60±0.15 (0.024±0.006)			
b	1.40±0.15 (0.055±0.006)			
С	2.00±0.15 (0.079±0.006)			
d	3.00±0.15 (0.118±0.006)			

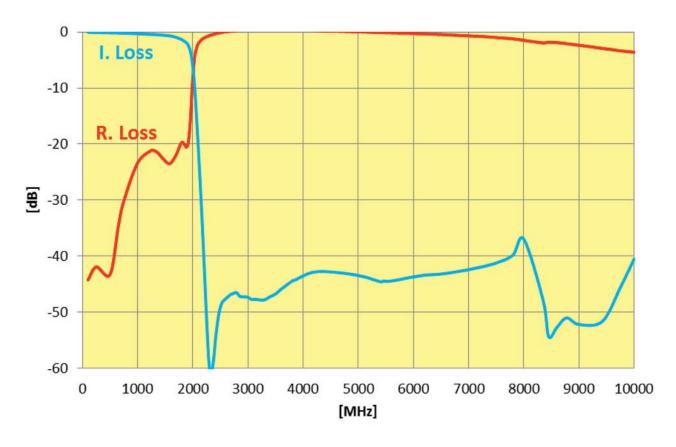


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1600SNTR - LGA Termination



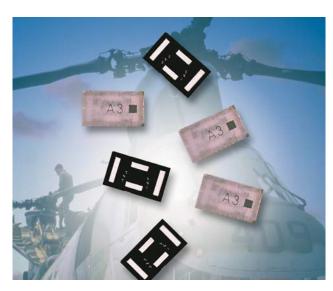
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1600	MHz	
Rejection @2.24GHz	-45	dB	Min.
Rejection 2.24GHz-7.5GHz	-40	dB	Min.
Rejection 7.5GHz-10GHz	-35	dB	Min.
Insertion Loss @1600MHz	-0.8	dB	Max.
Return Loss @1600MHz	-20	dB	Тур.
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		

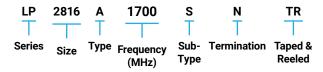


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1700SNTR - LGA Termination





HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample

- · Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_D, 4 hours

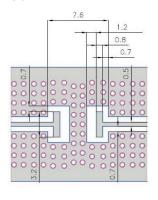
TERMINATION

Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

POWER RATING

15W

RECOMMENDED PAD LAYOUT



ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

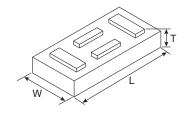
FEATURES

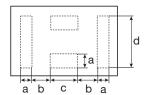
- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1700MHz
- · Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- · Low profile
- · Rugged construction
- · Taped and reeled
- · RoHS compliant

APPLICATIONS

- · Mobile communications
- · Satellite TV receivers
- GPS
- · Vehicle location systems
- Wireless LAN's

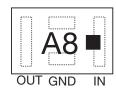
DIMENSIONS (BOTTOM VIEW): mm (inches)





	•
L	7.00±0.30 (0.276±0.012)
w	4.00±0.20 (0.157±0.008)
т	1.2 max (0.047 max)

а	0.60±0.15 (0.024±0.006)			
b	1.40±0.15 (0.055±0.006)			
С	2.00±0.15 (0.079±0.006)			
d	3.00±0.15 (0.118±0.006)			

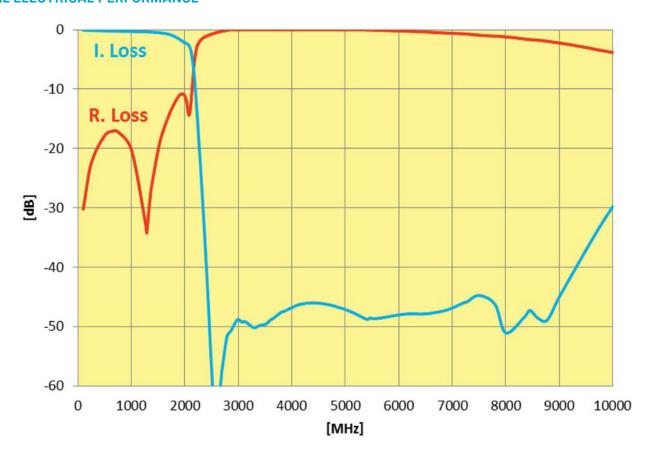


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1700SNTR - LGA Termination



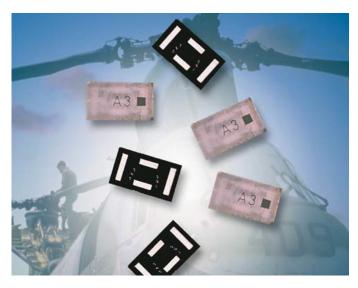
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1700	MHz	
Rejection @2.38GHz	-30	dB	Min.
Rejection 2.5GHz-7GHz	-45	dB	Min.
Rejection 7GHz-10GHz	-30	dB	Min.
Insertion Loss @1700MHz	-0.85	dB	Max.
Return Loss @1700MHz	-14	dB	Тур.
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1800SNTR - LGA Termination





ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

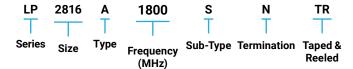
FEATURES

- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1800MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- Mobile communications
- Satellite TV receivers
- **GPS**
 - Vehicle location systems
- · Wireless LAN's

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

- Static Humidity: 85°C, 85% RH, 160 hours
- · Endurance: 125°C, IR, 4 hours

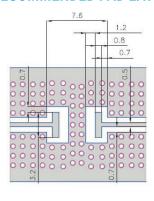
TERMINATION

Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

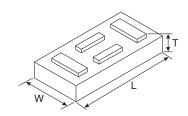
POWER RATING

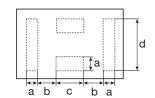
15W

RECOMMENDED PAD LAYOUT



DIMENSIONS (BOTTOM VIEW): mm (inches)





L	7.00±0.30 (0.276±0.012)			
W	4.00±0.20 (0.157±0.008)			
Т	1.2 max (0.047 max)			

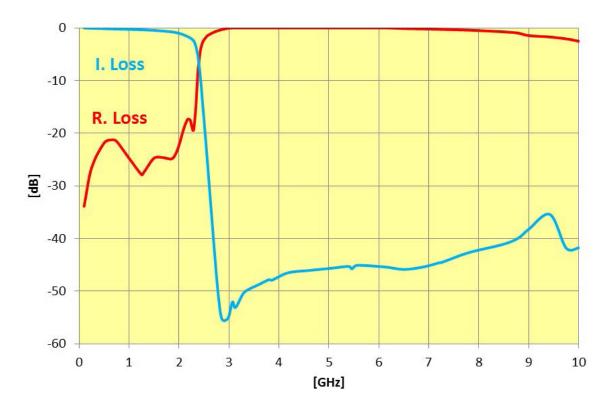
а	0.60±0.15 (0.024±0.006)			
b	1.40±0.15 (0.055±0.006)			
С	2.00±0.15 (0.079±0.006)			
d	3.00±0.15 (0.118±0.006)			





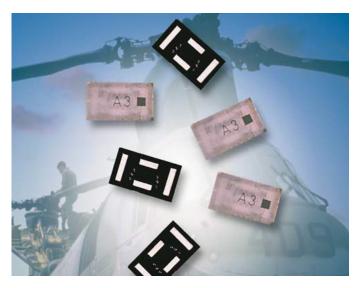
ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1800	MHz	
Rejection @2.52GHz	-19	dB	Min.
Rejection 2.8GHz-8.5GHz	-40	dB	Min.
Rejection 8.5GHz-10GHz	-35	dB	Min.
Insertion Loss @1800MHz	-0.75	dB	Max.
Return Loss @1800MHz	-20	dB	Typ.
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1900SNTR - LGA Termination





ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

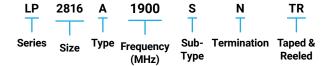
FEATURES

- Small size: 7x4x1.2 (LxWxT)
- Frequency: 1900MHz
- Steep attenuation
- Characteristic impedance: 50Ω
- Operating/Storage temp: -40°C +85°C · Wireless LAN's
- Low profile
- Rugged construction
- Taped and reeled
- RoHS compliant

APPLICATIONS

- · Mobile communications
- Satellite TV receivers
- GPS
- · Vehicle location systems

HOW TO ORDER



FINAL QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual/ mechanical characteristics. Each production lot is evaluated on a sample basis for:

- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, I_D, 4 hours

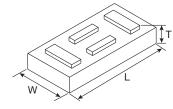
TERMINATION

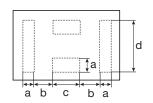
Nickel/ Lead free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

POWER RATING

15W

DIMENSIONS (BOTTOM VIEW): mm (inches)

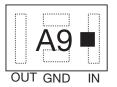




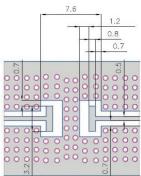
L	7.00±0.30 (0.276±0.012)
w	4.00±0.20 (0.157±0.008)
Т	1.2 max (0.047 max)

а	0.60±0.15 (0.024±0.006)			
b	1.40±0.15 (0.055±0.006)			
С	2.00±0.15 (0.079±0.006)			
d	3.00±0.15 (0.118±0.006)			

TERMINALS (TOP VIEW)



RECOMMENDED PAD LAYOUT

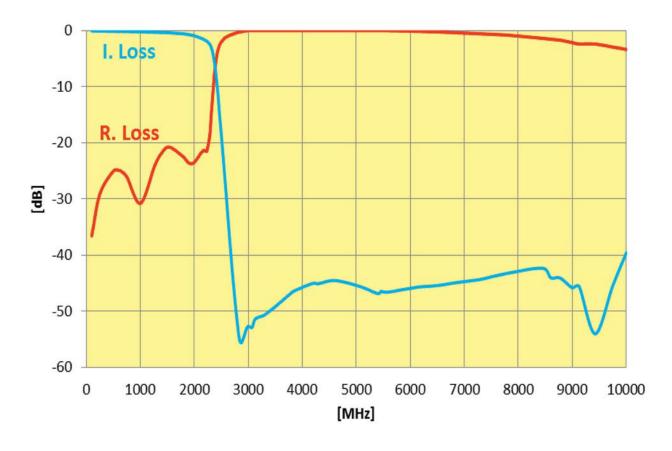


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1900SNTR - LGA Termination



ELECTRICAL CHARACTERISTICS

Parameter	Value	Unit	Notes
Fc	1900	MHz	
Rejection @2.66GHz	-35	dB	Min.
Rejection 2.5GHz-10GHz	-40	dB	Min.
Insertion Loss @1900MHz	-0.8	dB	Max.
Return Loss @1900MHz	-23	dB	Тур.
Power Handling	15	W	RF Continuous
Impedance	50	Ohm	
Operating Temp.	-40 to +85	°C	
Size	7x4x1.2mm		



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A1900SNTR - LGA Termination



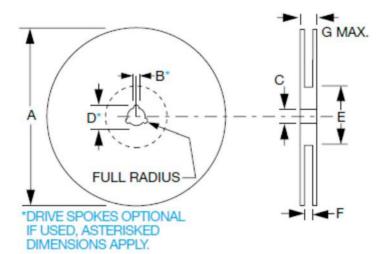
TAPE & REEL

All tape and reel specifications are in compliance with EIA 481-1-A. (equivalent to IEC 286 part 3).

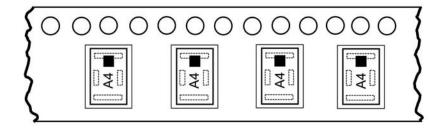
- · 12mm carrier
- Reeled quantities: Reels of 2,000 per 7" reel

REEL DIMENSIONS MM (INCHES)

CARRIER

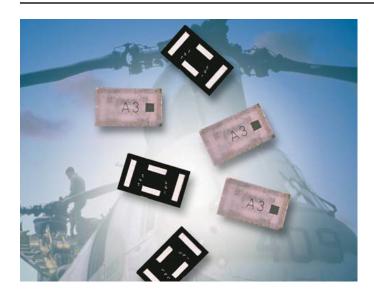


Α	180±1.00 (7.087±0.039)			
В	1.5 min. (0.059 min.)			
С	13.0±0.20 (0.511±0.008)			
D	20.2 min. (0.795 min.)			
E	50 min. (1.969 min.)			
F	13.6±0.10 (0.535±0.004)			
G	G 16.6 (0.654)			



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A2500SNTR - LGA Termination





tested for electrical parameters and visual/mechanical characteristics. Each production lot is evaluated on a sample basis for:

- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, IR, 4 hours

Nickel/ Lead freeSolder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

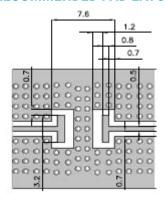
PART NUMBER CODE

LP2816A2500SNTR

POWER RATING

15W

RECOMMENDED PAD LAYOUT



ITF TECHNOLOGY

The ITF LGA Filter is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

FEATURES

- Small size: 7x4x1.2mm (LxWxT)
- Frequency: 2500MHz
- · Steep attenuation
- Characteristic impedance: 50Ω
- Operating / Storage temp: -40°C ÷ +85°C
- Low profile
- Rugged construction
- · Taped and reeled
- · RoHS compliant

APPLICATIONS

· Mobile communications

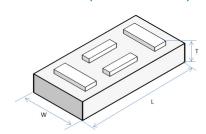
· Satellite TV receivers

- GPS
- Vehicle location systems
- · Wireless LAN's

FINAL QUALITY INSPECTION

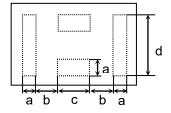
Finished parts are 100%

DIMENSIONS (BOTTOM VIEW): mm (inches)



L	7.0±0.3	
W	4.0±0.2	
Т	1.2 max	

а	0.60±0.15		
b	1.40±0.15		
С	2.00±0.15		
d	3.00±0.15		



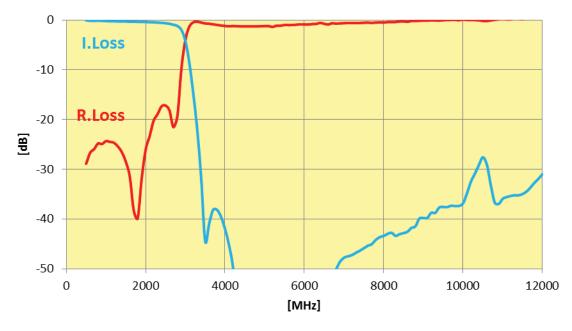


Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A2500SNTR - LGA Termination



ELECTRICAL CHARACTERISTICS

LP2816A2500SNTR						
Parameter	Value	Unit	Notes			
Fc	2500	MHz				
Rejection @3500MHz	-35	dB	Min.			
Insertion Loss @2500MHz	-0.8	dB	Max.			
R Loss @2500MHz	-15	dB				
Rejection 5GHz	-45	dB	Min.			
Rejection 7.5GHz	-40	dB	Min.			
Rejection 10GHz	-35	dB	Min.			
Power Handling	15	W	RF Continuous			
Impedance	50	Ohm				
Operating Temp.	-40 to +85	degC				
Size	7x4x1.2mm					



Thin-Film RF/Microwave Filters 2816 High Performance Low Pass 15W LP2816A2500SNTR - LGA Termination

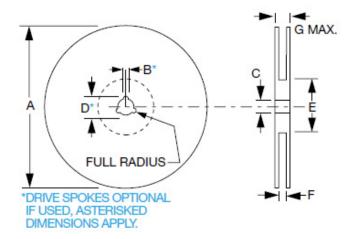


TAPE & REEL

All tape and reel specifications are in compliance with EIA 481-1-A (equivalent to IEC 286 part 3).

- · 12mm carrier
- · Reeled quantities: Reels of 2,000 per 7" reel

REEL DIMENSIONS: millimeters



Α	В	С	D	E	F	G
180±1.0	1.5 min.	13±0.2	20.2 min.	50 min.	13.6±0.1	16.6

CARRIER

