809S060, 809SL060, 809A060, 809B060 and 809SU060



### Shrink Boots – Straight, Long Tail, 90°, 45° and USB for Series 811 Connectors



**Protect Your Cable Harness** with heat-shrinkable boots. These easy-to-use boots provide excellent electrical, mechanical and environmental protection. Heating the boot causes the boot to shrink onto the connector and cable. An adhesive lining bonds the boot to the connector and cable and fills small gaps for a complete seal. Choose straight cable exit or right angle exit. These lipped boots attach directly to Series 811 Mighty Mouse HD connectors with integral band platform. After shrinking, the boot lip locks into groove. Choose Type 1 high performance elastomer for extreme temperatures and excellent resistance to fuels and oils or Type 2 non-halogenated flame-retardant polyolefin for use where limited fire hazard is required.

#### **Material Selection Guide**

Attribute	Type 1 High Performance Semi-Rigid Elastomer	Type 2 Zero Halogen Polyolefin	Type 9 Low-Temp Flexible Polyolefin – USB ONLY –
Continuous Operating Temp.	-75° to +150°C	-40° to +130°C	-40° to +100°C
Resistance to Fuels, Oils	Excellent	Very Good	Very Good
Low Toxicity, Zero Halogen	No	Yes	No

#### Type 1 High performance Elastomer

Semi-rigid high performance boots combine excellent resistance to fuels, oils and solvents with superior performance at extreme temperatures. Rated for 3000 hours continuous operation at +150° C, these boots fit most standard boot adapters for circular connectors. Material meets the requirements of VG95343 Type 6, BSG 198-5-DE, EN62329-102 and SAE AS5258 Type H. These boots are recommended for demanding applications such as military vehicles and petrochemical exploration. Standard Black color.

#### Type 2 Zero halogen

Halogen-free polyolefin boots meet low smoke and toxicity requirements of shipboard, transit and aircraft systems. These Low Smoke/Zero Halogen (LSZH) boots fit most standard shrink boot adapters, including M85049 types along with Glenair Series 31 and Series 44 adapters. Oxygen index greater than 30%, smoke index less than 20, and toxicity index under 3 per 100 grams. Material meets requirements of NAVSEA 5617649, VG95343 Part 29, BSG 198-5-DF, EN62329-101 and SAE AS5258 Type G. Resistance to oils, fuels and solvents. The boots provide strain relief and environmental protection to connector/cable transitions. Temperature rating -40° C to +130° C. Standard Black color.

#### Type 9 Low Temp Installable Flexibile Polyolefin (Standard for USB)

Lipped Straight USB Shrink Boots are available only in Type 9 Flexible Polyolefin which is designed for a low installation temperature of less than 80°C. Operating temperature range of -40°C to 100°C. Standard Black color.

Dimensions in Inches (millimeters) are subject to change without notice.



**Boot Material Properties** 

## **Adhesive Lined Boot Material Properties**

Heat-shrink boots are not watertight unless equipped with factory-installed or user-installed adhesives. When heat is applied to the boot, the adhesive melts and fixes the boot to the adapter and cable jacket to provide the necessary sealing as well as mechanical strain-relief. Hot melt thermoplastic polyamide adhesive is compatible with most cable jackets, economical and easy to install.

Shrink Boot Typical Material Properties			erties
Property	Type 1 High Performance Elastomer	Type 2 Zero Halogen Polyolefin	Type 9* Low Temperature Flexible Polyolefin
Flexibility	Semi-rigid	Semi-flexible	Flexible
Operating Temperature Range	-75°C to +150°C	-40°C to +130°C	-40°C to +100°C
Shrink Temperature (min.)	135°C	135°C	<80°C
Tensile Strength (psi)	1700	1100	1740
Elongation (% min.)	400	250	500
Long Term Heat Aging	3000 hrs, 150°C	3000 hrs, 135°C	168 hrs, 150°C
Heat Shock	4 hrs, 215°C	4 hrs, 215°C	4 hrs, 160°C
Heat Aging	168 hrs, 160°C	168 hrs, 160°C	168 hrs, 160°C
Dielectric Strength (V/mil)	300	380	10 M
Volume Resistivity (ohms-cm)	10 <sup>13</sup>	10 <sup>12</sup>	10 <sup>12</sup>
Water Absorption (%)	0.5	0.5	0.5
Flammability	Burn Time <15 sec Burn Length <25mm	Burn Time <15 sec Burn Length <25mm	Burn Time <120 sec Burn Length <25mm
RoHS Compliant	Yes	Yes	Yes
Oxygen Index (% min.)	N/A	30	N/A
Temperature Index (°C)	N/A	250	N/A
Smoke Index (max.)	N/A	20	N/A
Toxicity Index (max.)	N/A	3	N/A

Shrink Boot Fluid Resistance		
Fluid	Type 1 High Performance Elastomer	Type 2 Zero Halogen Polyolefin
Lubricating Oil	Very good	Good
Hydraulic Fluid	Very Good	Good
Aviation Fuel	Very Good	Good
Gasoline	Very Good	Fair
De-Icing Fluid	Excellent	Very Good
Automotive Diesel	Good	Fair

W1 and W2	W1 and W2 Adhesive Properties	
Attribute	W1 Standard High Temperature Hot Melt Adhesive (All Boots Except USB)	W2 Standard Hot Melt Adhesive For USB Type 9 Boots Only
Boot Material Compatibility	Type 1 and 2	Type 9 Only
Continuous Operating Temp.	-55° to +125°C	-40° to +80°C
Resistance to Fuels, Oils & Fluids	Good	Good
Low Toxicity, Zero Halogen	Yes	Yes

<sup>\*</sup> Note: Type 9 Low-Temp Flexible Polyolefin is the standard material for the USB Shrink Boot.

	Material Color Options for Type 1 High Performance Elastomer Only Add Optional Color Mod Code to End of Any Type 1 Material Part Number				
Mod Code	Color	Similar to (Reference)	Mod Code	Color	Similar to (Reference)
632 B	Blue	PANTONE 3005U	632 R	Red	PANTONE 1797U
632 E	Grey	FED-STD-595; #36270	632 T	Tan	FED-STD-595; #33446
632 G	Green	PANTONE 355U	632 W	White	FED-STD-595; #37875
632 P	Purple	FED-STD-595; #37100	632 Y	Yellow	PANTONE YELLOW U
632 O	Orange	FED-STD-595; #32300	Standard	Black	FED-STD-595; #37038

809S060, 809A060 and 809B060



#### **Lipped Straight Shrink Boots-Type I High Performance Elastomer**

- -75°C to +150°C
- Excellent resistance to fuels, oils, solvents and heat.



-		Shell Size	Part Number
	Boot	Series 811	Pre-Coated with W1 Hi-Temp
	Size	Mighty Mouse HD	Hot-Melt Adhesive
	1	5/6	809S060-1
	2	7	809S060-2
	3	8, 9	809S060-3

### Lipped Straight Shrink Boots-Type 2 Zero Halogen

- Low Smoke, Zero Halogen
- Meets U.S. and E.U. toxicity requirements.



	Shell Size	Part Number
Boot Size		Pre-Coated with <i>W1</i> Hi-Temp Hot-Melt Adhesive
1	5/6	809S060-1H
2	7	809S060-2H
3	8, 9	809S060-3H

#### Lipped 90° Right Angle Shrink Boots-Type I High Performance Elastomer

- -75°C to +150°C
- Excellent resistance to fuels, oils, solvents and heat.



	Shell Size	Part Number
Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with <i>W1</i> Hi-Temp Hot-Melt Adhesive
1	5/6	809A060-1
2	7	809A060-2
3	8, 9	809A060-3

### Lipped 90° Right Angle Shrink Boots-Type 2 Zero Halogen

- Low Smoke, Zero Halogen
- Meets U.S. and E.U. toxicity requirements.



	Shell Size	Part Number
Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with <i>W1</i> Hi-Temp Hot-Melt Adhesive
1	5/6	809A060-1H
2	7	809A060-2H
3	8, 9	809A060-3H

#### **Lipped 45° Angle Shrink Boots- Type I High Performance Elastomer**

- -75°C to +150°C
- Excellent resistance to fuels, oils, solvents and heat.



	Shell Size	Part Number
Boot Size	Series 800, 801, 802, 803, 804	Pre-Coated with <i>W1</i> Hi-Temp Hot-Melt Adhesive
1	5/6	809B060-1
2	7	809B060-2
3	8, 9	809B060-3
		Boot Series 800, 801, 802, 803, 804  1 5/6 2 7



809B060, 809SL060 and 809SU060

#### Lipped 45° Angle Shrink Boots-Type 2 Zero Halogen

- Low Smoke, Zero Halogen
- Meets U.S. and E.U. toxicity requirements.



	Shell Size	Part Number
Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with <i>W1</i> Hi-Temp Hot-Melt Adhesive
1	5/6	809B060-1H
2	7	809B060-2H
3	8, 9	809B060-3H

#### Lipped Straight Long Tail Shrink Boots-Type I High Performance Elastomer

- -75°C to +150°C
- Excellent resistance to fuels, oils, solvents and heat.



		Shell Size	Part Number
	Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with <i>W1</i> Hi- Temp Hot-Melt Adhesive
	1	5/6	809SL060-1
ĺ	2	7	809SL060-2
	3	8/9	809SL060-3

#### Lipped Straight Long Tail Shrink Boots- Type 2 Zero Halogen

- Low Smoke, Zero Halogen
- Meets U.S. and E.U. toxicity requirements.



	Shell Size	Part Number
Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with <i>W1</i> Hi- Temp Hot-Melt Adhesive
1	5/6	809SL060-1H
2	7	809SL060-2H
3	8/9	809SL060-3H

#### Lipped Straight USB Shrink Boots-Type 9 Low-Temp Flexibile Polyolefin

- -40°C to +100°C
- Same excellent physical properties within a limited temperature range.



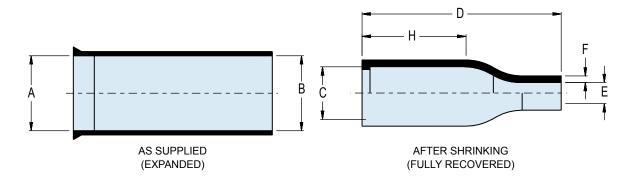
	Shell Size	Part Number
Boot Size	Series 811 Mighty Mouse HD	Pre-Coated with W2 Hot-Melt Adhesive
1	7/8	809SU060-1

Dimensions in Inches (millimeters) are subject to change without notice.

809S060 and 809A060

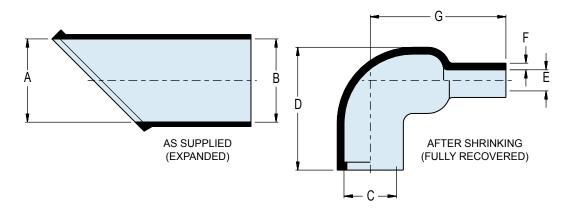


### **Lipped Straight Shrink Boots- Dimensions**



	A Min.		B Min.		C Max.		D Ref.		E Max.		F Ref.		НF	Ref.	Cable Range			
Boot	oot														Maximum		Minimum	
Size	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.
1	.390	9.91	.390	9.91	.260	6.60	1.370	34.80	.080	2.03	.030	0.76	.750	19.05	.230	5.84	.100	2.54
2	.669	16.99	.669	16.99	.300	7.62	1.500	38.10	.140	3.56	.032	0.81	.750	19.05	.500	12.70	.170	4.32
3	.945	24.00	.945	24.00	.390	9.91	1.500	38.1	.200	5.08	.035	0.89	.750	19.05	.800	20.32	.240	6.10

## **Lipped 90° Right Angle Shrink Boots- Dimensions**



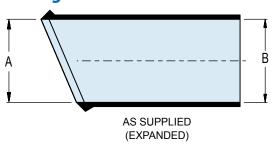
	A Min.		. B Min.		C Max.		D Ref.		E Max.		F Ref.		G F	Ref.	Cable Range			
Boot	Boot													Maximu		mum	num Minimum	
Size	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.
1	.390	9.91	.390	9.91	.260	6.60	.790	20.07	.095	2.41	.032	0.81	.750	19.05	.230	5.84	.100	2.54
2	.669	16.99	.669	16.99	.310	7.87	.790	20.07	.140	3.56	.032	0.81	.790	20.07	.500	12.70	.170	4.32
3	.945	24.00	.945	24.00	.390	9.91	.980	24.89	.200	5.08	.040	1.02	.980	24.89	.800	20.32	.240	6.10

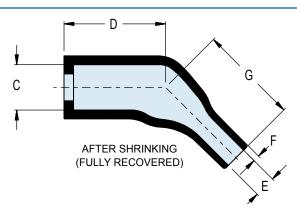
Dimensions in Inches (millimeters) are subject to change without notice.



809B060, 809SL060 and 809SU060

## **Lipped 45° Angle Shrink Boots- Dimensions**



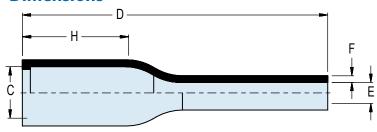


Boot	A Min.		B Min.		C Max.		D Ref		E Max.		F Ref.		G Ref.		Cable Range				
Size	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	Max. In.	Max. mm.	Min. In.	Min. mm.	
1	.390	9.9	.390	9.9	.260	6.60	.600	15.24	.080	2.03	.030	0.76	.560	14.22	.230	5.84	.100	2.54	
2	.669	17.0	.669	17.0	.300	7.62	.640	16.26	.140	3.56	.035	0.89	.620	15.75	.500	12.70	.170	4.32	
3	.945	24.0	.945	24.0	.390	9.91	.500	12.7	.160	4.06	.040	1.02	.750	19.05	.800	20.32	.240	6.10	

### **Lipped Straight Long Tail Shrink Boots- Dimensions**



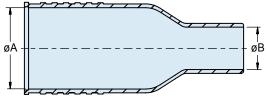


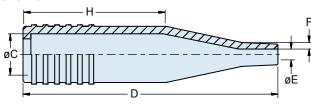


AFTER SHRINKING (FULLY RECOVERED)

Boot	ΑN	۱in.	B Min.		C Max.		D Ref		E Max.		F Ref.		H Ref.		Cable Range				
Size	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	Max. In.	Max. mm.	Min. In.	Min. mm.	
1	.390	9.9	.390	9.9	.280	7.11	2.500	63.50	.080	2.03	.045	1.14	.750	19.05	.230	5.84	.100	2.54	
2	.669	17.0	.669	17.0	.310	7.87	2.500	63.50	.140	3.56	.045	1.14	.750	19.05	.500	12.70	.170	4.32	
3	.945	24.0	.945	24.0	.390	9.91	2.500	63.50	.200	5.08	.045	1.14	.750	19.05	.800	20.32	.240	6.10	

#### **Lipped Straight USB Shrink Boots- Dimensions**





## AS SUPPLIED AFTER SHRINKING (EXPANDED) (FULLY RECOVERED)

Boot	A Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		B Min.		CN	lax.	DI	Ref	ΕN	lax.	FR	Ref.	H	Ref.		Cable	Range	
Size	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	Max. In.	Max. mm.	Min. In.	Min. mm.																																								
1	.550	13.97	.360	9.14	.330	8.38	2.000	50.80	.090	2.29	.055	1.40	1.130	28.70	.250	6.35	.090	2.29																																								

Dimensions in Inches (millimeters) are subject to change without notice.

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