









Raychem Molded Parts

Visual Reference Guide

Seal, Protect, and Strain-Relieve with Heat-Shrinkable Molded Parts in a Range of Shapes and Materials to Help Withstand Harsh Environments

Raychem Molded Parts
Visual Reference Guide

Contents

Introduction 3

- System Options 4
- Molded Parts Materials 7
- Adhesive/Sealant Product Characteristics 8

Part Numbering System 9

Visual Reference 10

- **Boots** 10
- Lipped Boots for Use with a Circular Connector Adapter 10
- Nonlipped Boots for Direct Attachment to Circular Connectors 11
- Slim-Line Boots 12
- Uniboots 12
- Rectangular Boots 13
- Micromolded Boots 14
- **Transitions** 15
- Bulbous Transitions 15
- Slim-Line Transitions 17
- **Covers** 18
- **Sleeves** 19
- **Caps** 19
- **Feedthroughs** 19
- **Miscellaneous Cable Management** 19
- **Selected Molded Shape Families** 20

Boot Selection Tables 23

Raychem Application Tooling 27

With one of the largest varieties of heat-shrinkable molded parts available, the TE Connectivity (TE) Raychem brand offers both the components and system-level solutions for complete harnesses.

This visual guide provides photos of common configurations, both in their expanded and fully recovered forms. Because the photos do not indicate relative sizes, the individual product photos are followed by family shots to show the range of each family.

Heat-shrinkable molded parts are useful for a wide range of harnessing needs, including:

- **Connector sealing**
- **Cable strain relief**
- **Cable breakouts and transitions**
- **End caps**

TE Components . . . TE Technology . . . TE Know-how . . .

AMP | AGASTAT | CII | HARTMAN | KILOVAC | MICRODOT | NANONICS | POLAMCO | Raychem | Rochester | DEUTSCH
SEACON Phoenix | LL ROWE | Phoenix Optix | AFP | SEACON

Get your product to market faster with a smarter, better solution.



HAZARD MATCHED

- Different families meet a wide range of challenging environments
- Custom material formulation for enhanced performance

SYSTEM MATCHED

- Molded parts, adhesives, tubing, and cable insulations and jackets—all designed to work together

VERSATILE

- Wide range of shapes and sizes
- Custom features available
- With or without pre-applied adhesive

HIGH PERFORMANCE

- High dielectric strength
- Mechanical robustness
- Superior chemical and fluid resistance
- Wide temperature ranges
- Excellent sealing

Molding Expertise in Materials to Work for You

Expertise in crosslinked polymer chemistry allows TE to create unique formulations that go beyond off-the-shelf polymers to provide exceptional performance in heat-shrinkable tubing, molded parts, and wire insulation and jackets.

Crosslinking and specialized chemical formulations combine to provide demanding markets with reliable high-temperature and fluid-resistant products. Not only did TE's Raychem business pioneer crosslinking and invent heat-shrinkable tubing, we have continually innovated the technology, evolving it into new materials, new applications, and new levels of performance and quality.

Matched to Your Application Needs

TE's Raychem heat-shrinkable molded parts meet a wide range of harsh environmental conditions. Mechanically robust molded parts are easy to install and available in a variety of sizes and shapes.

We have leveraged our expertise in materials well suited to applications requiring:

- **Low and high-temperature environments**
- **Fluid resistance**
- **Flame resistance**
- **Mechanical abuse**
- **Environmental sealing**
- **Strain relief**
- **Transitions**





A System-Level Approach to Harnessing

Engineered component systems of matched performance is the key to simplifying product choice for a variety of markets. From commercial applications to high-end demands in the aerospace industry, TE has a variety of material systems designed to survive the temperature and harsh environments required by the various markets.

Systems

Components	System 10	System 20	System 25	System 30	System 100	System 200	System 300
Tubing	VERSAFIT	NTFR	DR-25	VPB	ZHTM	RW-200	RT555
Molded Part	-3,-4,-71	-51	-25, -25L	-50	-100	-12	-55
Adhesive	S1017, S1030	S1124, S1048	S1048, S1125	S1125, S1255-04	S1030, S1125	S1125, S1255-04	S1255-04
Precoat	/42, /180	/164, /86	/86, /225	—	/180	—	—



INSTALITE Lightweight Molded Parts

INSTALITE boots are a lighter weight alternative of our -25 heat-shrink boots. Using our expertise in fluid-resistant, modified elastomers, we've created semi-rigid, abrasion-resistant boots that are up to 30% lighter than our standard -25 boots. INSTALITE boots offer the same balance of high-temperature fluid resistance and long-term heat resistance.

Shaped to Your Needs

Also available is an extensive line of adapters and heat-shrinkable tubing to further integrate and strengthen harness assemblies.

Whatever your application, our molded parts almost always meet the performance characteristics you require.

Application Requirements → **Select Shape** → **Select Material** → **Select Adhesive** (Preinstalled or as Separate Component)





BULBOUS SHAPES

Raychem bulbous-shaped molded parts are VG approved and help provide rugged mechanical and environmental protection, meet numerous specifications, and have been used successfully in military wire and cable harnesses for more than 30 years.

Most connector strain relief boots come in two versions:

- **Lipped** A molded adapter lip locks into the groove on the backshell adapter. Lipped part numbers are identified with a “D” or “K.”
- **Nonlipped** The boot may be installed directly on the rear of connector threads 12 mm or longer. Nonlipped part numbers are identified with an “A.”

Many other optional features are available, such as molded ports and drain holes. For other modifications and custom shapes, please contact TE.

MODIFICATIONS

Certain variations of the standard shapes, such as shorter leg lengths or specific overexpansions, are possible. Modifications must be requested prior to your order to determine feasibility.

SPECIALS

Complete design, tooling, and production of custom molded shapes and special adaptations are also possible. Estimates are made upon request.

HEAVY-DUTY CABLE BREAKOUTS

Heavy-duty breakouts provide mechanical strain relief and environmental sealing for power cables where the cable jacket is cut back and conductors broken out.

These boots are used widely in ship building and meet the requirements of the following:

- Lloyd's Register of Shipping
- Det Norske Veritas (DNV)
- American Bureau of Shipping (ABS)
- DOD-STD-2003
- MIL-I-81765/1A
- AS85049/142



SLIM-LINE SHAPES

With their low profile, these flexible shapes conform to cables better and create less bulk at transition points and connectors than bulbous shapes. Slim-line shapes include straight and right-angle boots as well as transitions. A small family of parts can provide a wide variety of expansions (under expansion, over expansion, cutoff).

MICROMOLDED SHAPES

With the continued miniaturization of electronic systems and connectors, our micromolded parts offer weight and size savings—and compatibility with today's miniature parts.



CABLE END CAPS

Heat-shrinkable end caps provide a reliable method of sealing power cables, pipes, conduit, and other cylindrical objects to help protect against corrosion and moisture penetration.

Rayaten EMI SHIELDED BOOTS

The Rayaten screen termination is a range of heat-shrinkable boots, transitions, and conductive adhesives that provide high levels of screening against electromagnetic radiation across a very wide frequency range.

Material ID	Material	Temperature Range	Shelf Life	TE Raychem Specification
Ruggedized Materials				
-3	Flame-retardant, semi-rigid polyolefin	-55°C to +135°C	5 years	RT-301
-4	Flame-retardant, flexible polyolefin	-55°C to +135°C	5 years	RT-1304
-12	Flexible, chemical-resistant fluoroelastomer	-55°C to +200°C	3 years	RT-1312
-25	Fluid resistant modified, semi-rigid elastomer	-75°C to +150°C	5 years	RW-2070
-25L	Light weight, flame-retardant, semi-rigid, elastomer	-75°C to 150°C	5 years	RW-3040
-71	Semi-rigid modified polyolefin	-55°C to 135°C	5 years	RT-1316
-100	Zerohal low-fire-hazard material	-30°C to +105°C	5 years	RW-2082
Slim-Line Materials				
-50	Fluid-resistant modified elastomer	-55°C to +150°C	15 months	RT-1313
-51	Chemical-resistant fluoroelastomer	-55°C to +135°C	15 months	RT-1321
-55	Flexible fluoropolymer	-65°C to +200°C	Unlimited	RT-1330
Chemical, Biological, Radiation, Nuclear-Resistant Materials				
-770	CBRN fluoropolymer	-55°C to +125°C	3 years	RT-770 Type II
-780	CBRN fluoropolymer	-55°C to +175°C	5 years	RT-780 Type II
-790	CBRN fluoropolymer	-55°C to +200°C	5 years	RT-790 Type II





Adhesive/Sealant Product Characteristics Tables

Product Type	Precoat Designation	Type	Operating Temperature Range	Product Designation	Available Form/ Packaging
Thermosets					
S1006		Epoxy/polyamide two-part paste	-55°C to 135°C [-67°F to 275°F]	S1006 Kit 1	Two 15-gram packs
				S1006 Kit 2	Four 7.5-gram packs
				S1006 Kit A	Ten 3-gram packs
S1009	—	Epoxy/polymercaptan two-part paste	-55°C to 135°C [-67°F to 275°F]	S1009 Kit A	Ten 3-gram packs
				S1009 Kit 8	50-ml dual syringe
S1255-04	—	One-part epoxy tape adhesive	-55°C to 200°C [-67°F to 392°F]	S1255-04	Tape [3/4 in. x .020 x 100 ft.]
S1125	—	Epoxy/polyamide two-part paste	-55°C to 150°C [-67°F to 302°F]	S1125 Kit 1	Five 10-gram packs
				S1125 Kit 2	Two 10-gram packs
				S1125 Kit 4	Five 10-gram packs
				S1125 Kit 5	One 10-gram pack
				S1125 Kit 8	50-ml dual syringe
S1264	—	Epoxy/polyamide two-part paste	-55°C to 150°C [-67°F to 302°F]	S1264 Kit 1	One 10-gram pack
				S1264 Kit 8	50-ml dual syringe
	/225	Precoated latent-curing epoxy/ polyamide	-75°C to 150°C [-103°F to 302°F]	Precoat only on -25 molded parts	—
Thermoplastics					
S1017	/42	Hot-melt, polyamide	-20°C to 60°C * [-4°F to 140°F]	S1017	Tape [1 in. x .010 in. x 50 ft.]
S1030	/180	Hot-melt, polyolefin	-80°C to 80°C [-112°F to 176°F]	S1030	Tape [3/4 in. x .010 in. x 33 ft.]
S1048	/86	Hot-melt, high performance	-55°C to 120°C [-67°F to 248°F]	S1048	Tape [1 in. x .026 in. x 100 ft.]
S1124	/164	Hot-melt, elastomeric polymer	-55°C to 105°C [-67°F to 221°F]	S1124	Tape [3/4 in. x .018 in.x 10 ft.]
S1297	/97	Hot-melt, polyamide adhesive	-20°C to 90°C [-4°F to 194°F]	S1297	Tape [1 in. x .010 in. x 10 ft.]
Sealants					
S1278	—	Hot-melt grey butyl sealant	-40°C to 90°C [-40°F to 194°F]	S1278-01	Tape [1 in. x .062 in. x 25 ft.]
				S1278-02	Tape [3-3/4 in. x .125 in. x 10 ft.]
S1305	—	Hot-melt grey butyl sealant, FR	-40°C to 90°C [-40°F to 194°F]	S1305-01	Tape [1 in. x .062 in. x 25 ft.]

*Passes cold bend at -40°C [-40°F] per RT-4204.

For full details on installation procedures and curing conditions, please refer to the applicable TE Code of Practice or installation document.



Part Numbering System

2 0 2D 1 21 - 3 01 / 42 - 0

NUMBER OF OPENINGS IN THE PART

ANGLE OF PART

All Openings		One Opening	
Circular		**Noncircular**	
0	Straight	**2**	90°
2	90°	**3**	90°
4	45°	**5**	45°
6	30°	**7**	30°

TYPE OF PART

- **A** Nonlipped Boots/Transitions
- **C** Lipped Boot
- **D** Lipped Boot
- **F** Lipped Boot
- **K** Lipped Boot
- **S** Rayaten
- **G** Lipped Boot
- **W** Other Shapes

FAMILY NUMBER

SIZE OF PART IN FAMILY

From **11** (Smallest) to **99** (Largest)

MATERIAL

- **3** Semirigid Polyolefin
- **4** Flexible Polyolefin
- **12** Flexible Fluoroelastomer
- **25** Fluid-Resistant Elastomer
- **100** Zero Halogen Semiflexible Polyolefin

MODIFICATION (Available on Request)

- Over Expansion
- Cutoff
- Molding Ports (Injection and Vent)

OPTIONAL ADHESIVE* COATING (Precoated in Factory)

COLOR

- **0** Black

Consult TE for Other Colors

Visual Reference

Lipped Boots
For Use with Adapters

As Supplied	Recovered	Part No.
		**202D121** through **202D196**
		**202D921** through **202D963**
		**222B012** through **222B063**
		**222D121** through **222D196**
		**222D921** through **222D963**
		**242A312** and **242A322**

As Supplied	Recovered	Part No.
		**202D211** through **202D299**
		**202K121** through **202K185**
		**222B112** and **222B123**
		**222D211** through **222D299**
		**222K121** through **222K185**



Available in INSTALITE -25L Material
Many of the shapes shown above are available as INSTALITE lightweight boots. Consult TE.

Visual Reference

Nonlipped Boots
For Direct Attachment on Connectors

As Supplied	Recovered	Part No.
		**202A011** through **202A096**
		**202A111** through **202A196**
		**202A212** through **202A264**
		**202A312** through **202A364**
		**202A512**
		**202A915**
		**202A921**
		**202B422** and **202B433**
		**203A021**

As Supplied	Recovered	Part No.
		**203A211**
		**203A312**
		**204A011**
		**204A311**
		**204A411**
		**204A511**
		**204A612**
		**208A011** through **208A098**
		**222A011** through **222A096***

*Shown with risers for potting

Visual Reference

Nonlipped Boots
For Direct Attachment on Connectors (continued)

As Supplied	Recovered	Part No.
		**222A111** through **222A196***
		**222A213** through **222A255**
		**222A313** through **222A355**
		**223A213** through **223A233**
		**224A012**

*Shown with risers for potting

As Supplied	Recovered	Part No.
		**226A045** and **226A075**
		**228A011** through **228A097**
		**242A142**
		**243A012** and **243A022**
		**246A166**
		**202B521** through **202B598**

Slim-Line Boots

As Supplied	Recovered	Part No.
		**202E334** through **202E346**
		**202F211** through **202F274** **202G211** through **202G253**
		**222F211** through **222F285**

Uniboots
Allow a Variety of Cable Exit Angles

As Supplied	Recovered	Part No.
		**202C611** through **202C663** **202G621** through **202G653**

Visual Reference

Rectangular Boots
For Rectangular Connectors

As Supplied	Recovered	Part No.
		**211A012**
		**214A011** through **214A052**
		**214A124** and **214A133**
		**214A311** through **214A352**
		**214A452**
		**214A511** through **214A552**
		**214A613**
		**214A814**
		**214A923**
		**214B623**
		**413A013** through **413A024**

As Supplied	Recovered	Part No.
		**214B713**
		**234A011** through **234A071**
		**234A111** through **234A152**
		**234A313** through **234A333**
		**234A413** through **234A434**
		**234A611** through **234A671**
		**234A711** through **234A752**
		**234A911** through **234A971**
		**234B011** through **234B052**
		453A215 and **453A225**

Visual Reference

Micromolded Boots

As Supplied	Recovered	Part No.
		202A111-25-G07-0
		203W301-25-G02-0
		224W221-25-0
		222A511-3-0
		223W601-25-0
		203W301-25-0

As Supplied	Recovered	Part No.
		202K111-25-01-0
		224W201-25-0
		204W221-25-0
		204W201-25-0
		302A115



Visual Reference

Bulbous Transitions

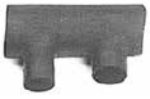
As Supplied	Recovered	Part No.
		**301A011** through **301A048**
		**302A012** through **302A037**
		**302A214**
		**322A012** through **322A037**
		**322A112** through **322A158**
		**322A315**
		**322A412** through **322A434**
		**322A514**

As Supplied	Recovered	Part No.
		**322B813**
		**341A015**
		**342A012** through **342A058**
		**342A112** through **342A138**
		**342A215**
		**342A313** and **342A323**
		**343A014** through **343A027**
		**362A014** through **362A114**

Visual Reference

Bulbous Transitions (continued)

As Supplied	Recovered	Part No.
		**363A018** and **363A020**
		**381A015**
		**381A115**
		**382A012** through **382A046**
		**402A013**
		**403A123** through **403A155**
		**422A011**
		**422A114**
		**422A414**
		**422A616**

As Supplied	Recovered	Part No.
		**422A716**
		**422A813**
		**423A014**
		**423A117**
		**453A017**
		**462A011** through **462A060**
		**462A214**
		**502A812** through **502A845**
		**522A013**
		**561A017**

Visual Reference

Bulbous Transitions (continued)

As Supplied	Recovered	Part No.
		**622A014**
		**562A011** through **562A067**
		**602A012**

As Supplied	Recovered	Part No.
		**602A022**
		**602A114**
		**602A212**

Lipped Bulbous Transitions

As Supplied	Recovered	Part No.
		**323A211**
		**323A222**

Slim-Line Transitions

As Supplied	Recovered	Part No.
		**301A511** through **301A514**
		**381A301** through **381A304**
		**462A421** through **462A424**

Visual Reference

Covers

As Supplied	Recovered	Part No.
		**102A911**
		**102A951**
		**102A961**
		**102A962**
		**102A981**
		**102A992**
		**102A993**
		**102A994**
		**202A817**
		**601A012**

As Supplied	Recovered	Part No.
		**220A012** through **220A023**
		**234A211**
		**234B111** and **234B122**
		**301A212, 301A222, 302A312**
		**302A734**
		**401A212** and **403A312**
		**401A414**
		**403A016**
		**501A012** and **502A212**

Visual Reference

Sleeves

As Supplied	Recovered	Part No.
		**200A413** and **200A426**
		**200D944** through **200D988**

As Supplied	Recovered	Part No.
		**202B811** through **202B821**

Caps

As Supplied	Recovered	Part No.
		**101A011** through **101A094**
		**102A811** through **102A865**
		**SSC**

Feedthroughs

As Supplied	Recovered	Part No.
		**207W213** through **207W264** with A-type nut
		**207W213-x-01** through **207W264-x-01** with B-type nut
		**Cable Entry Seals**

Cable Management

As Supplied	Recovered	Part No.
		**210W321** **203W302** **203W312** **203W342**

As Supplied	Recovered	Part No.
 		**400W242**

Visual Reference

Selected Molded Shape Families

As Supplied

Recovered



Lipped Boots (K Series)
202K121 through **202K185**
VG Approved

As Supplied

Recovered



Nonlipped Boots (A Series)
202A111 through **202A196**

As Supplied

Recovered



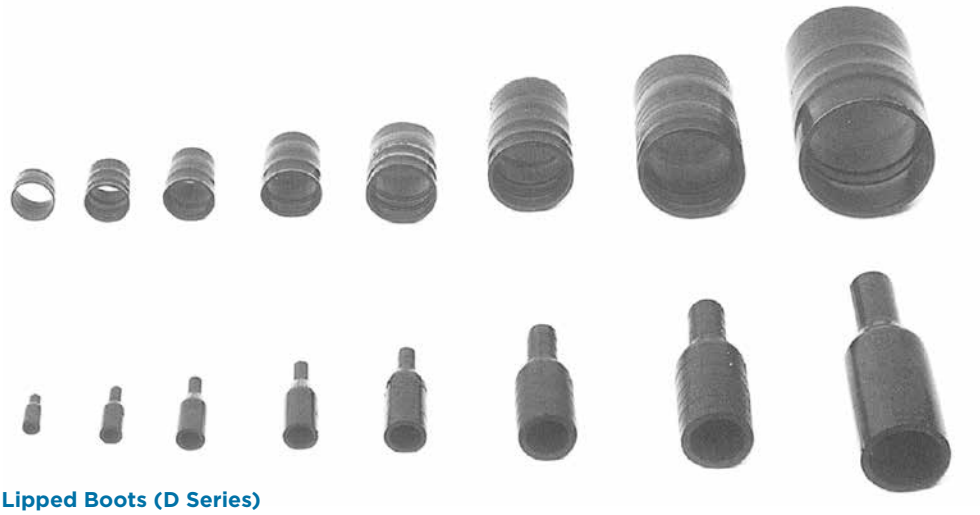
Nonlipped Boots (A Series)
202A212 through **202A264**

Visual Reference

Selected Molded Shape Families

As Supplied

Recovered



Lipped Boots (D Series)
202D121 through **202D196**

As Supplied

Recovered



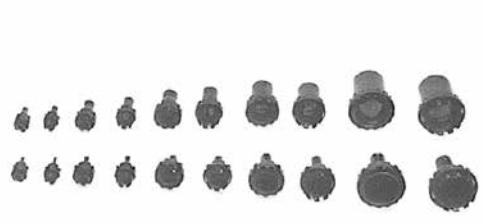
Lipped Boots (D Series)
202D211 through **202D299**
Mil Spec



Lipped Boots (D Series)
202D921 through **202D963**
Mil Spec

As Supplied

Recovered



Feedthroughs
207W213 through **207W264**



Rectangular Boots
214A011 through **214A052**

Visual Reference

Selected Molded Shape Families

As Supplied

Recovered



90° Nonlipped Boots
222A111 through **222A196**



90° Nonlipped Boots
222A213 through **222A255**

As Supplied

Recovered



90° Nonlipped Boots
222A313 through **222A355**



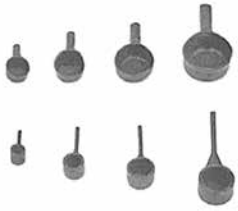
90° Lipped Boots
222D121 through **222D196**

As Supplied

Recovered



90° Lipped Boots
222D211 through **222D299**
Mil Spec



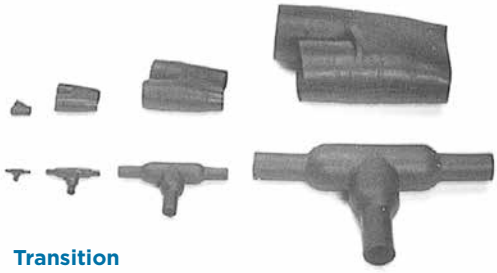
90° Lipped Boots
222D921 through **222D963**
Mil Spec

As Supplied

Recovered



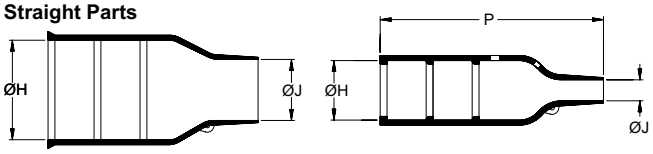
90° Lipped Boots
222K121 through **222K185**
VG Approved



Transition
301A011 through **301A048**

Boot Selection Tables

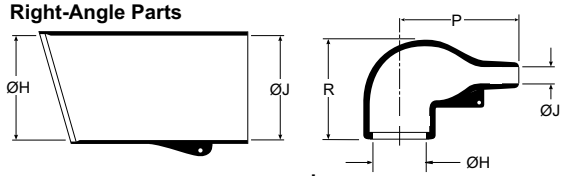
Straight Parts



a) Part as supplied

b) Part after unrestricted recovery

Right-Angle Parts



a) Part as supplied

b) Part after unrestricted recovery

Dimensions relate to -3, -4, -25 compounds, unless otherwise noted.
For expanded dimensions of -12 and -100 parts, please refer to latest TE drawing on TE.com

Lipped Molded Parts

202K Bulbous Straight Parts: VG Style

Part No.	H		J		P ±10%
	Min.	Max.	Min.	Max.	
	a	b	a	b	b
202K121	24 [0.95]	10.4 [0.41]	24 [0.95]	5.6 [0.22]	38 [1.50]
202K132	30 [1.18]	14.2 [0.56]	30 [1.18]	5.9 [0.23]	55 [2.17]
202K142	31 [1.22]	18.0 [0.71]	31 [1.22]	7.1 [0.28]	67 [2.64]
202K153	36 [1.42]	22.4 [0.88]	36 [1.42]	8.4 [0.33]	80 [3.15]
202K163	43 [1.69]	28.2 [1.11]	43 [1.69]	9.9 [0.39]	99 [3.90]
202K174	60 [2.36]	35.1 [1.38]	60 [2.36]	15.7 [0.62]	130 [5.12]
202K185	66 [2.60]	44.5 [1.75]	66 [2.60]	16.8 [0.66]	170 [6.69]

222K Bulbous Right-Angle Parts: VG Style

Part No.	H		J		P ±10%	R ±10%
	Min.	Max.	Min.	Max.		
	a	b	a	b	b	b
222K121	24 [0.95]	10.4 [0.41]	24 [0.95]	5.6 [0.22]	25 [0.98]	25 [0.98]
222K132	30 [1.18]	14.2 [0.56]	30 [1.18]	5.9 [0.23]	32 [1.26]	27 [1.06]
222K142	31 [1.22]	18.0 [0.71]	31 [1.22]	7.1 [0.28]	39 [1.54]	31 [1.22]
222K153	36 [1.42]	22.4 [0.88]	36 [1.42]	8.4 [0.33]	46 [1.81]	38 [1.50]
222K163	43 [1.69]	28.2 [1.11]	43 [1.69]	9.9 [0.39]	55 [2.17]	45 [1.77]
222K174	60 [2.36]	35.1 [1.38]	60 [2.36]	15.7 [0.62]	80 [3.15]	54 [2.13]
222K185	66 [2.60]	44.5 [1.75]	66 [2.60]	16.8 [0.66]	108 [4.25]	68 [2.68]

Nonlipped Molded Parts

202A Straight Parts

Part No.	H		J		P ±10%
	Min.	Max.	Min.	Max.	
	a	b	a	b	b
202A011	10.7 [0.42]	7.9 [0.31]	8.4 [0.33]	3.8 [0.15]	25.4 [1.00]
202A021	23.7 [0.54]	9.9 [0.39]	11.7 [0.46]	5.3 [0.21]	38.1 [1.50]
202A032	19.3 [0.76]	14.2 [0.56]	14.2 [0.56]	6.6 [0.26]	51.3 [2.02]
202A042	23.9 [0.94]	17.8 [0.70]	15.5 [0.61]	7.4 [0.29]	66.8 [2.63]
202A053	30.0 [1.18]	21.9 [0.86]	18.0 [0.71]	8.6 [0.34]	73.7 [2.90]
202A063	37.8 [1.49]	27.4 [1.08]	21.3 [0.84]	9.4 [0.37]	99.1 [3.90]
202A074	47.0 [1.85]	35.3 [1.39]	35.6 [1.40]	16.0 [0.63]	130.3 [5.13]
202A085	59.4 [2.34]	43.7 [1.72]	43.7 [1.72]	19.6 [0.77]	161.3 [6.35]
202A096	81.3 [3.20]	57.2 [2.25]	55.6 [2.19]	26.9 [1.06]	212.6 [8.37]



Nonlipped Molded Parts (continued)

222A Right-Angle Parts

Part No.	H		J		P ±10%	R ±10%
	Min.	Max.	Min.	Max.		
	a	b	a	b	b	b
222A011	10.7 [0.42]	7.9 [0.31]	8.4 [0.33]	3.8 [0.15]	17.3]0.68]	20.1 [0.79]
222A021	13.7 [0.54]	10.4 [0.41]	11.7 [0.46]	5.6 [0.22]	21.3 [0.84]	22.6 [0.89]
222A032	19.3 [0.76]	14.2 [0.56]	14.2 [0.56]	6.6 [0.26]	26.9 [1.08]	24.1 [0.85]
222A042	23.9 [0.94]	17.8 [0.70]	15.5 [0.61]	7.1 [0.28]	36.6 [1.44]	30.5 [1.20]
222A052	30.0 [1.18]	22.4 [0.88]	18.0 [0.71]	8.4 [0.33]	43.7 [1.72]	34.1 [1.38]
222A063	37.8 [1.49]	28.2 [1.11]	21.3 [0.84]	9.9 [0.39]	53.6 [2.11]	43.9 [1.73]
222A074	47.0 [1.47]	35.1 [1.38]	35.6 [1.40]	15.7 [0.62]	78.0 [3.07]	52.8 [2.08]
222A085	59.4 [2.34]	44.5 [1.75]	43.7 [1.72]	20.3 [0.80]	97.5 [3.84]	66.0 [2.60]
222A096	81.3 [3.20]	57.2 [2.35]	55.6 [2.19]	26.7 [1.05]	128.0 [5.04]	79.2 [3.12]

Lipped, Low-Profile Boots

202D2 Straight Boots: Mil Spec Variants

Part No.	H		J		P ±10%
	Min.	Max.	Min.	Max.	
	a	b	a	b	b
202D211	22.4 [.88]	11.4 [.45]	22.4 [.88]	6.4 [.25]	105.9 [4.17]
202D221	25.7 [1.01]	15.0 [.59]	25.7 [1.01]	7.4 [.29]	121.2 [4.77]
202D232	29.5 [1.16]	18.8 [.74]	29.5 [1.16]	8.4 [.33]	138.7 [5.46]
202D242	34.0 [1.34]	22.9 [.90]	34.0 [1.34]	9.7 [.38]	159.5 [6.28]
202D253	37.3 [1.47]	29.5 [1.16]	37.3 [1.47]	10.4 [.41]	177.8 [7.00]
202D263	43.7 [1.72]	34.0 [1.34]	43.7 [1.72]	12.2 [.48]	203.2 [8.00]
202D274	50.0 [1.97]	41.2 [1.62]	50.0 [1.97]	14.2 [.56]	203.2 [8.00]
202D285	62.7 [2.47]	47.0 [1.85]	62.7 [2.47]	17.5 [.69]	203.2 [8.00]
202D296	69.3 [2.73]	59.7 [2.35]	69.3 [2.73]	19.6 [.77]	203.2 [8.00]
202D299	81.8 [3.22]	67.1 [2.64]	81.8 [3.22]	22.9 [.90]	203.2 [8.00]

222D2 Right Angle Boots: Mil Spec Variants

Part No.	H		J		P ±10%	R Ref.
	Min.	Max.	Min. -3, -4, -25	Max.		
	a	b	a	b	b	b
222D211	22.4 [.88]	11.4 [.45]	22.4 [.88]	6.4 [.25]	105.2 [4.14]	18.5 [.73]
222D221	25.7 [1.01]	15.0 [.59]	25.7 [1.01]	7.4 [.29]	124.0 [4.88]	19.8 [.78]
222D232	29.5 [1.16]	18.8 [.74]	29.5 [1.16]	8.4 [.33]	146.3 [5.76]	20.8 [.82]
222D242	34.0 [1.34]	22.9 [.90]	34.0 [1.34]	9.7 [.38]	172.2 [6.78]	21.8 [.86]
222D253	37.3 [1.47]	29.5 [1.16]	37.3 [1.47]	10.4 [.41]	185.2 [7.29]	24.4 [.96]
222D263	43.7 [1.72]	34.0 [1.34]	43.7 [1.72]	12.2 [.48]	213.6 [8.41]	27.4 [1.08]
222D274	50.0 [1.97]	41.1 [1.62]	50.0 [1.97]	14.2 [.56]	224.5 [8.84]	29.5 [1.16]
222D285	62.7 [2.45]	47.0 [1.85]	62.7 [2.47]	17.5 [.69]	227.3 [8.95]	33.3 [1.31]
222D296	69.3 [2.73]	59.7 [2.35]	69.3 [2.73]	19.6 [.77]	233.4 [9.19]	35.1 [1.38]
222D299	81.8 [3.22]	67.1 [2.64]	81.8 [3.22]	22.9 [.90]	237.0 [9.33]	44.5 [1.75]

Lipped, Bulbous Boots

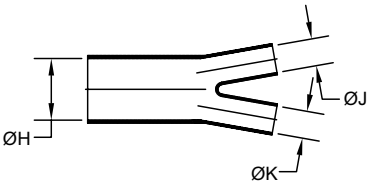
202D1 Straight Boots: Mil Spec Variants

Part No.	H		J		P ±10%
	Min.	Max.	Min.	Max.	
	a	b	a	b	b
202D121	23.3 [0.92]	10.5 [0.41]	23.3 [0.92]	5.6 [0.22]	38.1 [1.50]
202D132	28.4 [1.12]	14.3 [0.56]	28.4 [1.12]	6.6 [0.26]	54.9 [2.16]
202D142	31.0 [1.22]	17.8 [0.70]	31.0 [1.22]	7.2 [0.28]	66.8 [2.63]
202D153	36.0 [1.42]	22.4 [0.88]	36.0 [1.42]	8.4 [0.33]	80.0 [3.15]
202D163	42.7 [1.68]	28.2 [1.11]	42.7 [1.68]	9.9 [0.39]	103.6 [4.08]
202D174	51.8 [2.04]	35.1 [1.38]	51.8 [2.04]	15.8 [0.62]	130.3 [5.13]
202D185	66.0 [2.60]	44.5 [1.75]	66.0 [2.60]	20.4 [0.80]	165.1 [6.50]
202D196	81.7 [3.22]	57.6 [2.27]	81.7 [3.22]	25.4 [1.00]	177.8 [7.00]

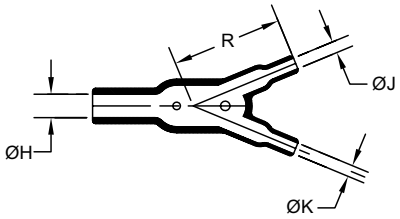
222D1 Right-Angle Boots: Mil Spec Variants

Part No.	H		J		P ±10%	R ±10%
	Min.	Max.	Min.	Max.		
	a	b	a	b	b	b
222D121	23.4 [0.92]	10.4 [0.41]	23.4 [0.92]	5.6 [0.22]	21.3 [0.84]	22.6 [0.89]
222D132	28.4 [1.12]	14.2 [0.56]	28.4 [1.12]	6.6 [0.26]	33.8 [1.33]	27.2 [1.07]
222D142	31.0 [1.22]	17.8 [0.70]	31.0 [1.22]	7.1 [0.28]	36.6 [1.44]	31.0 [1.22]
222D152	36.0 [1.42]	22.4 [0.88]	36.0 [1.42]	8.4 [0.33]	43.7 [1.72]	35.1 [1.38]
222D163	42.7 [1.68]	28.2 [1.11]	42.7 [1.68]	9.9 [0.39]	53.6 [2.11]	43.9 [1.73]
222D174	51.8 [2.04]	35.1 [1.38]	51.8 [2.04]	15.7 [0.62]	78.0 [3.07]	52.8 [2.08]
222D185	66.0 [2.60]	44.5 [1.75]	66.0 [2.60]	20.3 [0.80]	97.5 [3.84]	66.0 [2.60]
222D196	81.8 [3.22]	60.5 [2.38]	81.8 [3.22]	25.4 [1.00]	117.9 [4.64]	83.8 [3.30]

Transitions



a) Part as supplied



b) Part after unrestricted recovery

Part No.	H		J		K		P ±10%	R ±10%
	Min.	Max.	Min.	Max.	Min.	Max.		
	a	b	a	b	a	b	b	b
382A012	13.2 [0.52]	6.10 [0.24]	6.6 [0.26]	3.3 [0.13]	6.6 [0.26]	3.3 [0.13]	22.4 [0.88]	19.3 [0.76]
382A023	26.9 [1.06]	12.4 [0.49]	13.2 [0.52]	6.10 [0.24]	13.2 [0.52]	6.10 [0.24]	38.1 [1.50]	43.2 [1.70]
382A034	38.6 [1.52]	18 [0.71]	26.9 [1.06]	12.4 [0.49]	26.9 [1.06]	12.4 [0.49]	65.5 [2.58]	78.7 [3.10]
382A046	55.6 [2.19]	25.9 [1.02]	26.9 [1.06]	12.7 [0.50]	26.9 [1.06]	12.7 [0.50]	85.1 [3.35]	94 [3.70]

Micro-Molded Parts

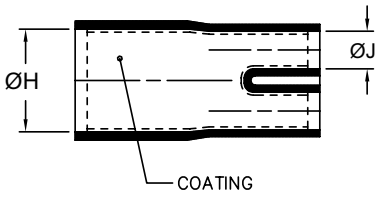
Straight Micro-Molded Parts

Part No.	H		J		P ±10%
	Min.	Max.	Min.	Max.	
	a	b	a	b	b
204W201	10 [0.39]	5.2 [0.20]	9 [0.35]	1.5 [0.06]	20 [0.79]
203W301	10 [0.39]	5.8 [0.23]	10 [0.39]	2.2 [0.09]	29 [1.14]
203W301-*-G02	10 [0.39]	5.8 [0.23]	6.0 [0.24]	2.2 [0.09]	19 [0.75]
202K111-*-01	17 [0.67]	6.9 [0.27]	17 [0.67]	3.0 [0.12]	29 [1.14]
202A111-X-G07	17 [0.67]	7.9 [0.31]	17 [0.67]	2.2 [0.09]	25 [0.98]
204W221	11 [0.43]	9.3 [0.37]	11 [0.43]	2.1 [0.08]	19 [0.75]

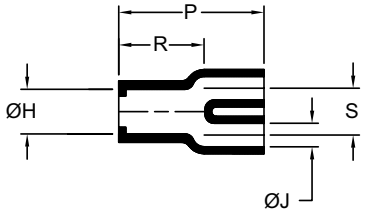
Right-Angled Micro-Molded Parts

Part No.	H		J		P ±10%	R ±10%
	Min.	Max.	Min.	Max.		
	a	b	a	b	b	b
224W201	11 [0.43]	5.2 [0.20]	9 [0.35]	1.6 [0.06]	13 [0.51]	11.5 [0.45]
223W601	10 [0.39]	6.3 [0.25]	6 [0.24]	2 [0.08]	12.5 [0.49]	11.5 [0.45]
224W221	11 [0.43]	9.3 [0.37]	11 [0.43]	2.1 [0.08]	12.3 [0.48]	13 [0.51]
222A511	2.3 [0.09]	1.7 [0.07]	2.3 [0.09]	1 [0.04]	12.7 [0.50]	6.1 [0.24]
203W301	10 [0.39]	5.8 [0.23]	10 [0.39]	2.2 [0.09]	29 [1.14]	21 [0.83]

Micro-Molded Transitions



a) Part as supplied



b) Part after unrestricted recovery

Part No.	H		J		P ±10%	R ±10%	S ±10%
	Min.	Max.	Min.	Max.			
	a	b	a	b	b	b	b
302A115-X-XX	11.05 [0.44]	6.35 [0.25]	5.59 [0.22]	2.54 [0.10]	20.62 [0.81]	14.27 [0.56]	4.77 [0.19]

Raychem Application Tooling

The Tools to Make Every Connection Count

HIGH QUALITY

- Manufactured to TE Connectivity's strict quality standards
- Tools are designed to make every job easy and trouble-free
- Made from the highest quality materials for low cost of ownership

EASY TO USE

- Designed and developed with the operator in mind
- Convenient, easy to use features make installations faster and easier
- More choice in tooling, from simple hand tools to advanced, automatic operation

APPLICATION SPECIFIC

- Tools offered by TE are designed to aid in the installation of TE wire and cable products
- Decades of experience are applied to the development of all TE installation tools
- Choose from a wide range of tools for any cable management task

For more information on tooling, order our Raychem Application Tooling brochure, literature number 1-1773872-1. Or visit te.com/raychem-tooling

TE Connectivity (TE) offers a variety of dependable hand and bench-mount tools for crimping Raychem devices and heating heat-shrinkable products. The tools help give you more accuracy in terminations—increasing productivity, reducing rework, and taking the guesswork out of procedures. With easy-to-use controls and ergonomic design, Raychem tools help make the job go faster and easier.



CV1981 and CV1983 Series ThermoGun Heating Tools
ThermoGun heating tools are used for installation of TE heat-shrink products, molded parts, and SolderSleeve terminations.



Raychem Heat Guns
Tools are designed for installation of TE heat-shrink products and SolderSleeve devices.

LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. Just call your local support number or visit www.te.com/industrial to chat with a Product Information Specialist.

Technical Support

te.com/support-center

North America	+1 800 522 6752	Asia Pacific	+86 400 820 6015
North America (Toll)	+1 717 986 7777	Japan	+81 044 844 8180
EMEA/South Africa	+800 0440 5100	Australia	+61 2 9554 2695
EMEA (Toll)	+31 73 624 6999	New Zealand	+64 (0) 9 634 4580
India (Toll-Free)	+800 440 5100		

te.com/moldedparts

AMP, AGASTAT, CII, DEUTSCH, HARTMAN, INSTALITE, KILOVAC, LL ROWE, MICRODOT, NANONICS, POLAMCO, Rayaten, Raychem, SEACON, SolderSleeve, Tinel-Lock, Uniboot, VERSAFIT, Zerohal, TE, TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other products, logos, and company names mentioned herein may be trademarks of their respective owners.

While TE Connectivity (TE) has made every reasonable effort to ensure the accuracy of the information herein, nothing herein constitutes any guarantee that such information is error-free, or any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. The TE entity issuing this publication reserves the right to make any adjustments to the information contained herein at any time without notice. All implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose are expressly disclaimed. The dimensions herein are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice.

Consult TE for the latest dimensions and design specifications.

© 2016 TE Connectivity Ltd. family of companies All Rights Reserved.

1-1773853-4 12/16

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

TE Connectivity:

1393454-9 1897725-2 2310537-1 U5254-000005-030PA 2-521104-2 MPT100C18RF SBCHE154R7K SBCHE64R7K 917688-1 HSHC4508K2J HT-CT-50M-1-OUT-0 RH73H2A40MKTN 170376-2 175977-2 2380312-2 292206-2 354022KFT 2005330-1 CPF0402B37K4E1 SMV1W220KJT 282680-1 T4133012081-000 TE50BR39J ROX05SJ18R 1903112-2 2-520263-2 3-1447221-5 3631B101LL 1-962915-1 2098557-4