

OSMP Microminiature Push-On Coaxial Connectors

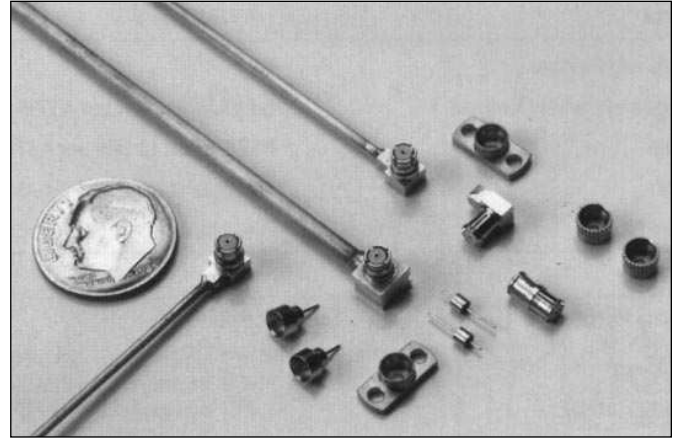
- Intermateable with Gilbert GPO™ Series
- DESC approved
- Enhanced performance features
- Simplified Assembly

M/A-COM's OSMP microminiature push-on coaxial connectors provide solutions for today's modular designs with denser packaging requirements. The extremely small size of the OSMP offers a versatile solution for high density packaging allowing connector center-to-center spacing of 0.170". The push-on interface facilitates easier assembly and test with a positive snap-in feature to indicate a fully mated connection. The rugged OSMP interface can withstand harsh environments of mechanical shock and vibration, typically found in military or aerospace related applications. M/A-COM's OSMP connector interface is the standard used by Defense Electronics Supply Center (DESC) to generate the SMP push-on connector series.

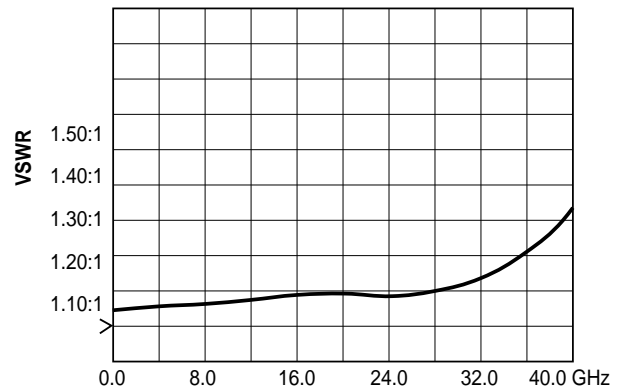
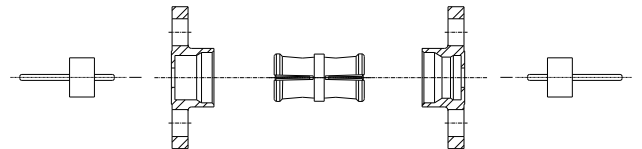
OSMP connectors can be your design solution for mechanical packaging and frequency response. The OSMP interface provides 0.020" of radial misalignment for critical blindmate applications. Mating forces are strictly controlled to ensure reliable connections per mated pair or when simultaneously mating multiple connectors. Cable jacks include an anti-rocking ring to ensure reliable mechanical performance regardless of the operating environment. OSMP connectors offer enhanced broadband VSWR performance of 1.15:1 max thru 26GHz and 1.40:1 max thru 40GHz.

Standard design OSMP configurations include cable connectors, straight and right angle, for 0.047 and 0.085 semi-rigid cable, full detent, limited detent and smooth bore mating shrouds that can be bulkhead or flange mounted and glass feedthroughs for coax to circuit launchers. In-series adapters for module to module intermating and between series adapters for integrating or testing systems or components parameters.

OSMP connectors are an ideal solution for upgrading existing systems or creating new high density designs for next generation RF packaging. Years of design experience has made M/A-COM an industry leader in blindmate modular interconnect technology. Call your local M/A-COM Sales Office or authorized Distributor for more information or samples of our new OSMP series.



OSMP Shroud and Jack to Jack Adapter Assembly



Typical VSWR for OSMP Jack to Jack Adapter Part Numbers 2980-0000-62 and 2998-5001-02

OSMP Specifications

Requirement	Detail
General	
Materials and Finishes	
Housings and Center Contacts	Beryllium Copper per ASTM-B-196; gold plate over nickel plate
Dielectric	PTFE Fluorocarbon per ASTM-D-1457
Shrouds	Stainless steel per ASTM-A582 Type 303; passivate per ASTM-A380
Hermetic Seal	Glass bead
Electrical	
Frequency Range	dc - 40.0 GHz
VSWR	1.10:1 Maximum dc - 23.0 GHz 1.15:1 Maximum 23.0 - 26.0 GHz 1.40:1 Maximum 26.0 - 40.0 GHz
Voltage Rating	335 VRMS maximum at sea level
Insertion Loss	0.10 \sqrt{f} (GHz) maximum
Insulation Resistance	5000 megohms minimum
Dielectric Withstanding Voltage	500 volts (VRMS minimum)
RF High Potential	325 volts (VRMS minimum) @ 5 MHz
Impedance	50 ohms nominal
RF Leakage	-80dB to 3 GHz, -65dB from 3 to 26.5 dB minimum
Contact Resistance	Initial center contact 6.0 milliohms maximum Outer contact 2.0 milliohms maximum
Mechanical	
Durability	100 mating cycles minimum
Radial Misalignment	± 0.020 minimum
Axial Misalignment	.000/.010
Force to Engage	full detent 10.0 lbs. maximum half detent 5.0 lbs. maximum smooth bore 2.0 lbs. maximum
Force to Disengage	full detent 2.0 lbs. minimum half detent 1.5 lbs. minimum smooth bore 0.5 lbs. minimum
Center Contact Retention	1.5 lbs. minimum axial force
Environmental	
Operating Temperature	-65°C to +165°C
Vibration	per MIL-STD-202, method 204, test condition D
Shock	per MIL-STD-202, method 213, test condition I
Thermal Shock	per MIL-STD-202, method 107, test condition B
Moisture Resistance	per MIL-STD-202 method 106, except step 7b shall be omitted. Resistance shall be 200 megohms within 5 minutes after removal from humidity.

Note: Specifications apply to 2980-0000-62. Performance may vary depending on connector selected.

Specifications Subject to Change Without Notice.

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M/A-COM, Inc.

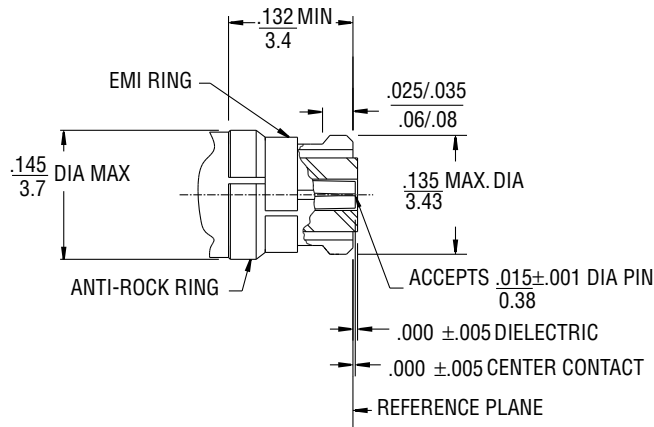
North America: Tel. (800) 366-2266
Fax (800) 618-8883

■ Asia/Pacific: Tel. +81 3 3263 8761
Fax +81 3 3263 8769

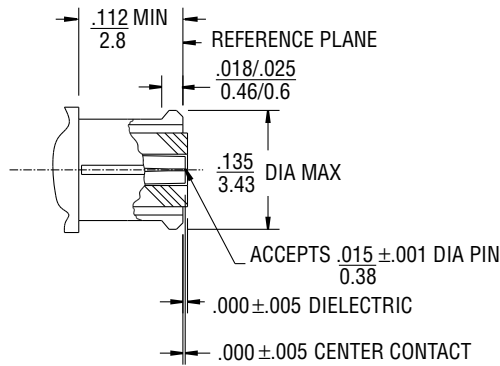
■ Europe: Tel. +44 (1344) 869 595
Fax +44 (1344) 300 020

OSMP Interface Dimensions

Jack

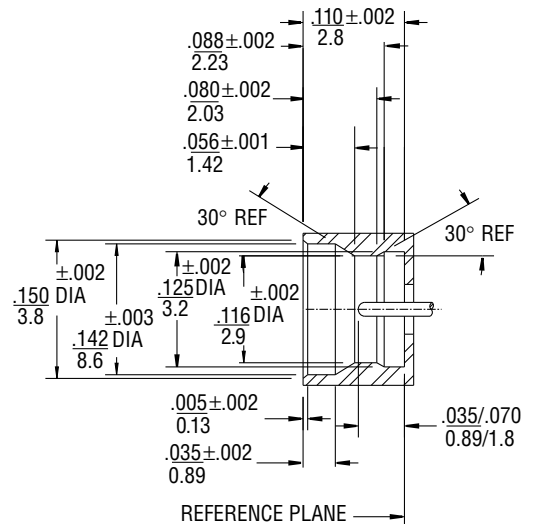


BULLET

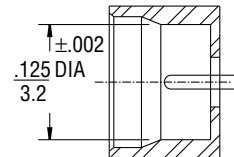


Shroud

FULL DETENT



SMOOTH BORE



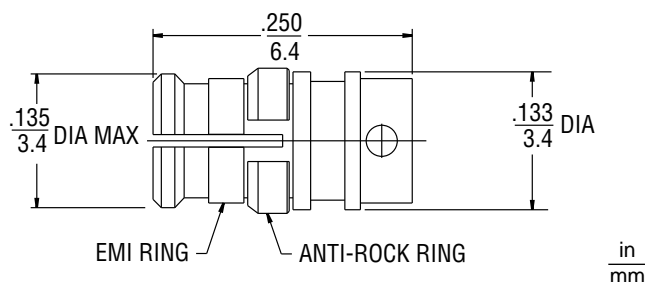
inch
mm

Note: The U.S. Government (DESC) has determined that the above specified interface dimensions are interchangeable and intermateable with Gilbert GPO™ Series Rf connectors.¹

1. Per DESC drawing numbers 94007 and 94008, series SMP.

OSMP Microminiature Push-On Coaxial Connectors

Straight Cable Jack Solder Attachment

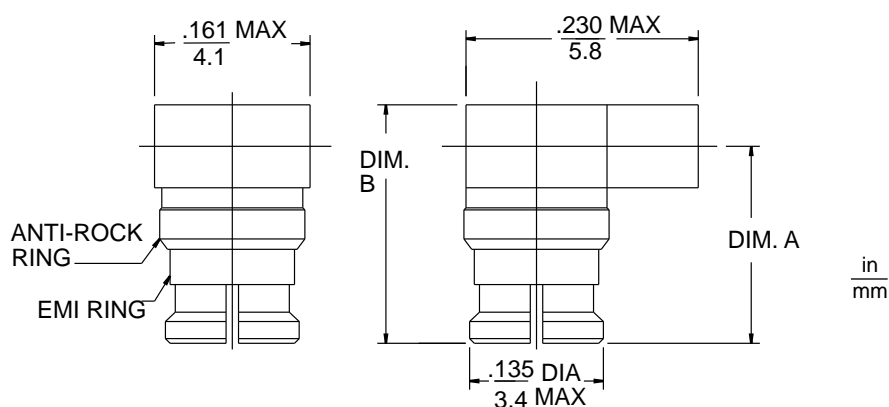


M/A-COM Part Number	DESC Part Number	Cable
2902-7947-62	—	.047 Semi-Rigid
2902-5005-62	94008ZCG-2	
2902-7985-62	—	.085 Semi-Rigid (RG-405)
2902-5006-62	94008ZCG-1	

Right Angle Cable Jack Solder Attachment

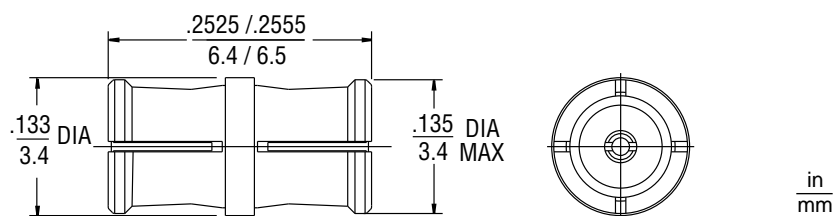
Solderless Right Angle Junction

M/A-COM Part Number	DESC Part Number	Cable	Dim. A inches	Dim. A mm	Dim. B inches	Dim. B mm
2908-7947-62	—	.047 Semi-Rigid	.190	4.8	.230	5.8
2908-5006-62	94008ZCG-4					
2908-7985-62	—	.085 Semi-Rigid (RG-405)	.209	5.3	.265	6.7
2908-5007-62	94008ZCG-3					



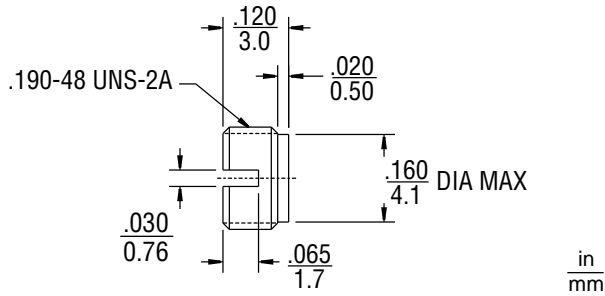
Jack to Jack Adapter (Bullet)

M/A-COM Part Number	DESC Part Number
2980-0000-62	—
2980-5004-62	94007ZCG-1



Specifications Subject to Change Without Notice.

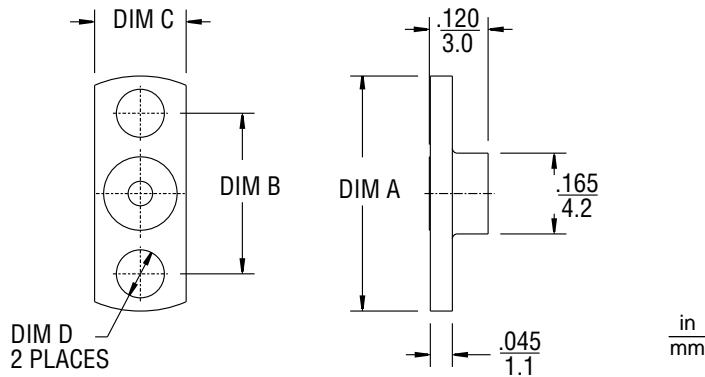
Shroud - Threaded



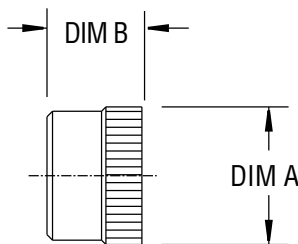
Full Detent Part Number	Limited Detent Part Number	Smooth Bore Part Number
2998-5045-02	2998-5043-02	2998-5044-02

Shroud - 2 Hole Flange Surface Mount

M/A-COM Full Detent Part Number	DESC Full Detent Part Number	Limited Detent Part Number	Smooth Bore Part Number	Dim A Inch mm	Dim B Inch mm	Dim C Inch mm	Dim D Inch mm
2998-5001-02	-	2998-5028-02	2998-5031-02	.480 12.2	.328 8.3	.187 4.7	.098 2.5
2998-5039-02	94007ZSP-3	-	-	.480 12.2	.328 8.3	.187 4.7	.098 2.5
2998-5002-02	-	2998-5029-02	2998-5032-02	.625 15.8	.481 12.2	.223 5.7	.102 2.6
2998-5040-02	94007ZSP-4	-	-	.625 15.8	.481 12.2	.223 5.7	.102 2.6
2998-5003-02	-	2998-5030-02	2998-5049-02	.400 10.2	.282 7.2	.165 4.2	.073 1.9
2998-5041-02	94007ZSP-5	-	-	.400 10.2	.282 7.2	.165 4.2	.073 1.9

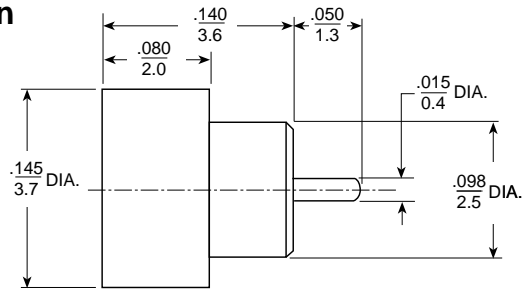


Shroud - Press Fit



Full Detent Part Number	Limited Detent Part Number	Smooth Bore Part Number	Dim A Inch mm	Dim B Inch mm
2998-5004-02	2998-5033-02	2998-5036-02	.174 4.4	.120 3.0
2998-5005-02	2998-5034-02	2998-5037-02	.182 4.6	.115 2.9
2998-5006-02	2998-5035-02	2998-5038-02	.154 3.9	.080 2.0

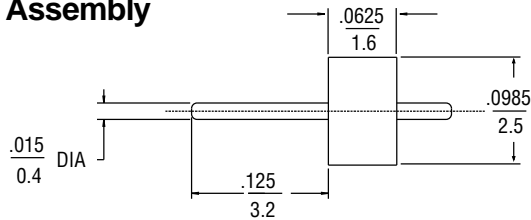
Shroud-Solder-In Hermetic



Full Detent Part Number	Limited Detent Part Number	Smooth Bore Part Number
2998-5054-94	2998-5055-94	2998-5056-94

in
mm

Glass Bead Assembly

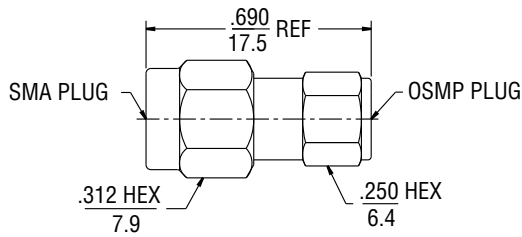


Part Number
2998-5022-94

in
mm

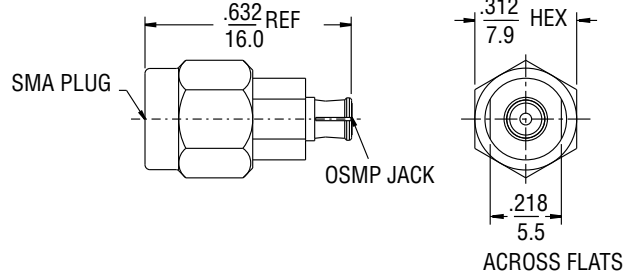
Between Series Adapters

OSMP Plug to SMA Plug



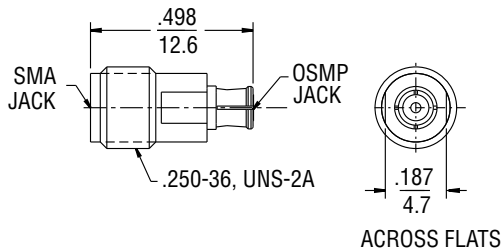
Part Number	2981-2241-00
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OSMP Jack to SMA Plug



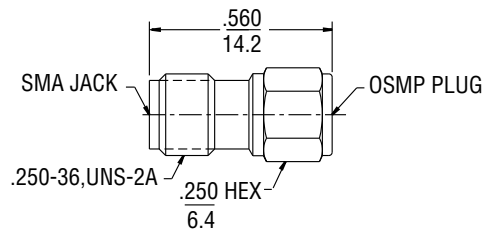
Part Number	2982-2241-00
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OSMP Jack to SMA Jack



Part Number	2980-2240-00
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OSMP Plug to SMA Jack



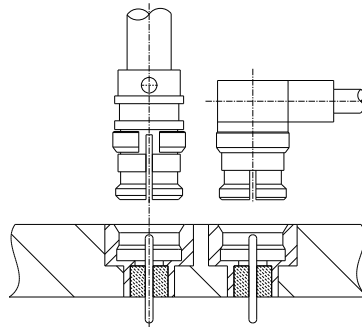
Part Number	2982-2240-00
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in
mm

OSMP Application Notes

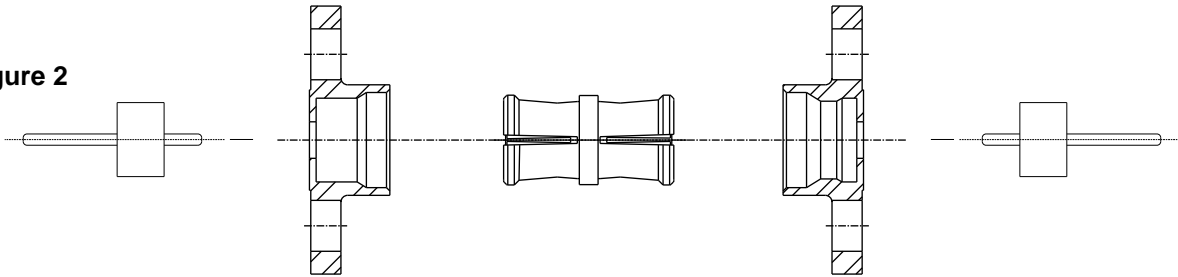
OSMP connectors are designed with maximum packaging density in mind. Their low profile construction allows for module to module flush mounting with a center to center spacing of .170 inches. Connectors are user friendly with simple self contained designs which equates to low installation costs and reduced fabrication time for cable assemblies and circuit packages.

Figure 1



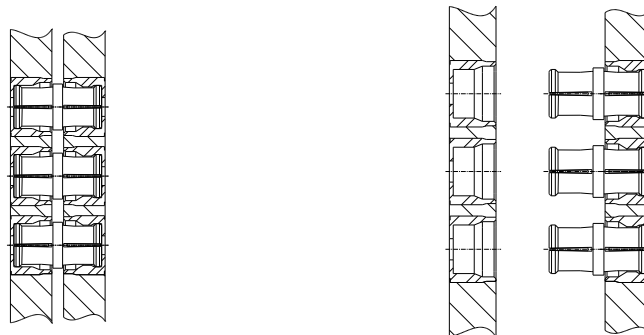
Cable connectors are designed for miniature .047 and .085 semi rigid cables to support density packaging solutions with reduced cross talk of transmission lines and low EMI characteristics. Standard connector configurations are right angle and straight female interface designs, (Fig 1). The right angle connector design requires solder attachment of the cable jacket to connector housing only. Internal assembly is self aligning with a solderless right angle contact junction which facilitates assembly.

Figure 2



Circuit packages will employ bulkhead press-in or solder-in shrouds or if space permits a 2 hole flange mount shroud is available (Fig 2). The shrouds are the coupling mechanism to engage mating connections. The shrouds are used with a glass bead sub-assembly to form the entire coaxial mating interface structure. The glass bead is the internal conductor and the shroud will be the outer conductor. Solder-in shrouds with internal glass beads are available to eliminate the two stage assembly required for separate bead and shroud combination.

Figure 3



The OSMP push-on interface with smooth bore detent shrouds allows the packaging engineer to mate multiple connectors simultaneously. Modular designed systems can also be constructed using the blindmate concept with full detent and limited detent shrouds where positive locking is required. A full detent shroud offers maximum locking engagement for stationary input interfaces. A limited detent with reduced engagement forces can be utilized for internal modular construction where multiple mates may occur. The basic design of this microminiature series provides for a variety of interface configurations that can be a versatile and reliable design solution.

Competitive Cross Reference List

Gilbert Engineering Co. Part Number	Connecting Devices Inc. Part Number	M/A-COM Part Number
00219-105-3	—	2980-2240-00
00219-110-3	—	2982-2240-00
00219-205-3	—	2982-2241-00
00219-210-3	—	2981-2241-00
0119-742-3	—	2998-5049-02
0119-802-3	—	2998-5036-02
0119-803-3	—	2998-5033-02
0119-820-3	—	2998-5038-02
0119-821-3	—	2998-5030-02
0119-822-3	—	2998-5043-02
0119-823-3	—	2998-5044-02
0119-833-3	—	2998-5029-02
0119-845-1	—	2908-7947-62
0119-925-1	P651-2CC	2902-7985-62
0119-930-1	P651-1CC	2902-7947-62
0119-945-1	P650-1CC	2980-0000-62
0119-946-3	P670-1SF	2998-5001-02
0119-948-3	P670-2SF	2998-5002-02
0119-949-3	—	2998-5004-02
0119-950-3	P670-3SF	2998-5003-02
0119-954-3	—	2998-5031-02
0119-955-3	P671-2SF	2998-5032-02
0119-957-3	—	2998-5028-02
0119-959-3	—	2998-5006-02
0119-960-1	P652-2CC	2908-7985-62
0119-972-3	—	2998-5005-02
0119-994-3	—	2998-5045-02
0270-018-1	—	2998-5022-94
—	P671-3SF	2998-5033-02

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