

Thin-Film RF/Microwave Directional Couplers

CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type



GENERAL DESCRIPTION

ITF (INTEGRATED THIN-FILM) TECHNOLOGY

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

APPLICATIONS

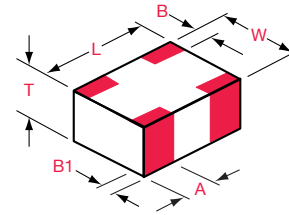
- 4G LTE
- 5G LTE
- Base Stations.
- Automotive
- Industrial
- Mobile Communications
- Satellite TV Receivers
- GPS
- Vehicle Location Systems
- Wireless LAN's

FEATURES

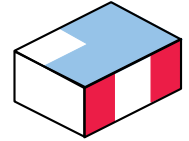
- Miniature Size: 0603
- Frequency Range: 800MHz - 3GHz
- Characteristic Impedance: 50Ω
- Operating / Storage Temp.: -40°C to +85°C
- Power Rating: 3W Continuous
- Low Profile
- Rugged Construction
- Taped and Reeled

DIMENSIONS:

millimeters (inches)



Bottom View



Top View

	0603
L	1.6±0.1 (0.063±0.004)
W	0.84±0.1 (0.033±0.004)
T	0.60±0.1 (0.028±0.004)
A	0.35±0.15 (0.014±0.006)
B	0.175±0.1 (0.007±0.004)
B1	0.00±0.1/0-0.0 (0.00±0.004/-0.0)

HOW TO ORDER

CP Style Directional Coupler	0603 Size 0603	X Type	**** Frequency MHz	X Sub-Type	S Termination Code W = Sn90, Pb10 **S = Sn100	TR Packaging Code TR = Tape and Reel
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**RoHS compliant

QUALITY INSPECTION

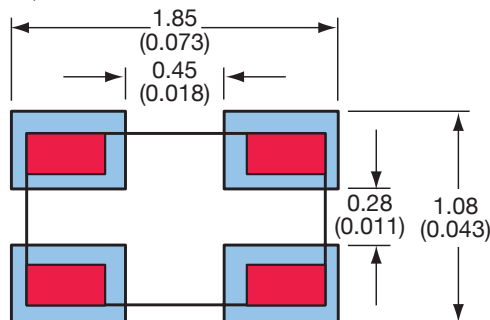
Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

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

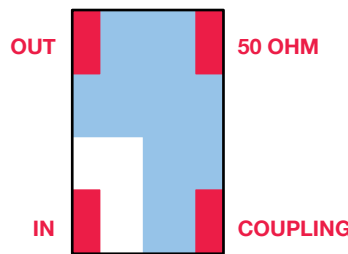
TERMINATION

Nickel/Solder coating compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

Recommended Pad Layout Dimensions mm (inches)



TERMINALS (TOP VIEW)



Not RoHS Compliant

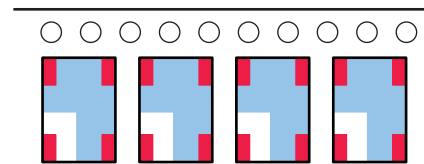


LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT

For RoHS compliant products,
please select correct termination style.



Orientation in tape

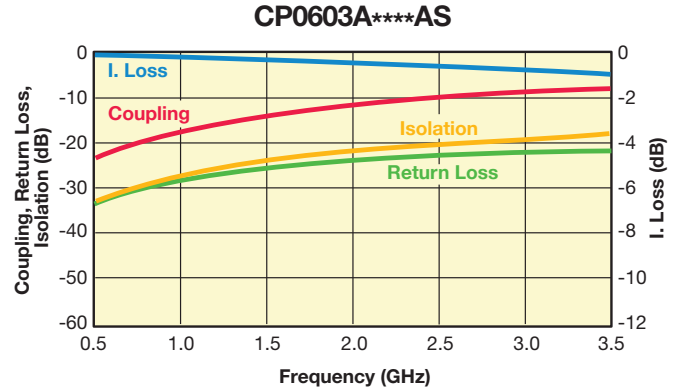
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CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type

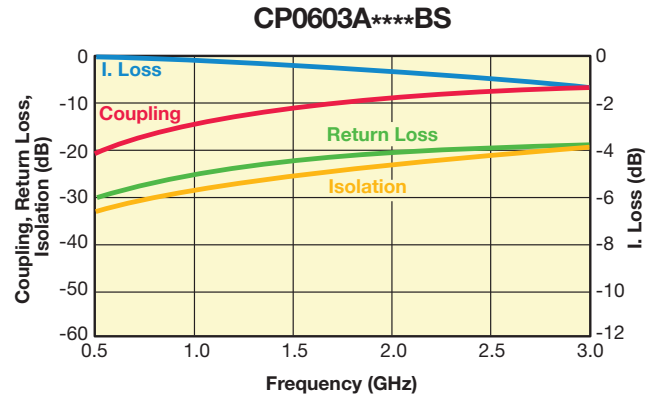
Coupler P/N CP0603A**AS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603A0836AS	824 - 849	18.5±1	0.25	1.2
CP0603A0881AS	869 - 894	18.5±1	0.25	1.2
CP0603A0902AS	890 - 915	18±1	0.25	1.2
CP0603A0947AS	935 - 960	17.5±1	0.25	1.2
CP0603A0897AS	880 - 915	18±1	0.25	1.2
CP0603A0942AS	925 - 960	17.5±1	0.25	1.2
CP0603A1441AS	1429 - 1453	14±1	0.4	1.2
CP0603A1747AS	1710 - 1785	12.5±1	0.6	1.2
CP0603A1842AS	1805 - 1880	12±1	0.6	1.2
CP0603A1880AS	1850 - 1910	12±1	0.6	1.2
CP0603A1960AS	1930 - 1990	11.5±1	0.65	1.2
CP0603A1907AS	1895 - 1920	12±1	0.6	1.2
CP0603A1890AS	1880 - 1900	12±1	0.6	1.2
CP0603A2442AS	2400 - 2484	10±1	0.85	1.2



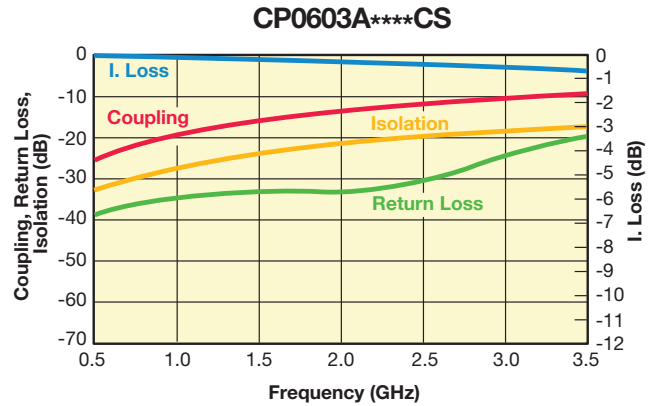
Coupler P/N CP0603A**BS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603A0836BS	824 - 849	16±1	0.25	1.2
CP0603A0881BS	869 - 894	15.5±1	0.25	1.2
CP0603A0902BS	890 - 915	15.5±1	0.25	1.2
CP0603A0947BS	935 - 960	15±1	0.25	1.2
CP0603A0897BS	880 - 915	15.5±1	0.25	1.2
CP0603A0942BS	925 - 960	15±1	0.25	1.2
CP0603A1441BS	1429 - 1453	11.5±1	0.55	1.2
CP0603A1747BS	1710 - 1785	10±1	0.8	1.3
CP0603A1842BS	1805 - 1880	9.5±1	0.8	1.3
CP0603A1880BS	1850 - 1910	9±1	0.8	1.4
CP0603A1960BS	1930 - 1990	9±1	0.8	1.4
CP0603A1907BS	1895 - 1920	9±1	0.8	1.4
CP0603A1890BS	1880 - 1900	9±1	0.8	1.4
CP0603A2442BS	2400 - 2484	7.5±1	1.1	1.4



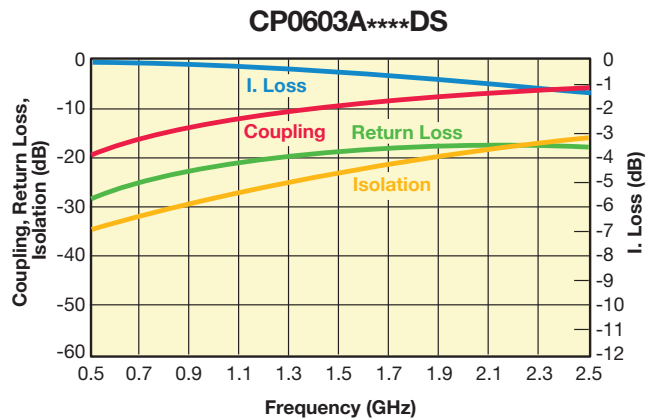
Coupler P/N CP0603A**CS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603A0836CS	824 - 849	21±1	0.25	1.2
CP0603A0881CS	869 - 894	20.5±1	0.25	1.2
CP0603A0902CS	890 - 915	20.5±1	0.25	1.2
CP0603A0947CS	935 - 960	20±1	0.25	1.2
CP0603A0897CS	880 - 915	20.5±1	0.25	1.2
CP0603A0942CS	925 - 960	20±1	0.25	1.2
CP0603A1441CS	1429 - 1453	16.5±1	0.55	1.2
CP0603A1747CS	1710 - 1785	15±1	0.8	1.2
CP0603A1842CS	1805 - 1880	14.5±1	0.8	1.2
CP0603A1880CS	1850 - 1910	14.5±1	0.8	1.2
CP0603A1960CS	1930 - 1990	14±1	0.8	1.2
CP0603A1907CS	1895 - 1920	14.5±1	0.8	1.2
CP0603A1890CS	1880 - 1900	14.5±1	0.8	1.2
CP0603A2442CS	2400 - 2484	12.5±1	1.1	1.2



Coupler P/N CP0603A**DS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603A0836DS	824 - 849	15.0±1	0.25	1.2
CP0603A0881DS	869 - 894	14.5±1	0.25	1.2
CP0603A0902DS	890 - 915	14.5±1	0.25	1.2
CP0603A0947DS	935 - 960	14±1	0.25	1.2
CP0603A0897DS	880 - 915	14.5±1	0.25	1.2
CP0603A0942DS	925 - 960	14±1	0.25	1.2
CP0603A1441DS	1429 - 1453	10.5±1	0.7	1.3
CP0603A1747DS	1710 - 1785	9±1	0.9	1.5
CP0603A1842DS	1805 - 1880	8.5±1	0.9	1.5
CP0603A1880DS	1850 - 1910	8.5±1	1.0	1.5
CP0603A1960DS	1930 - 1990	8±1	1.0	1.5
CP0603A1907DS	1895 - 1920	8.5±1	1.0	1.5
CP0603A1890DS	1880 - 1900	8.5±1	1.0	1.5
CP0603A2442DS	2400 - 2484	6.5±1	1.5	1.5



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

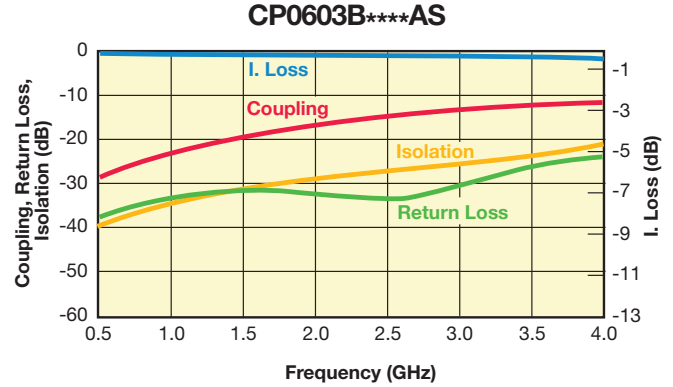
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type



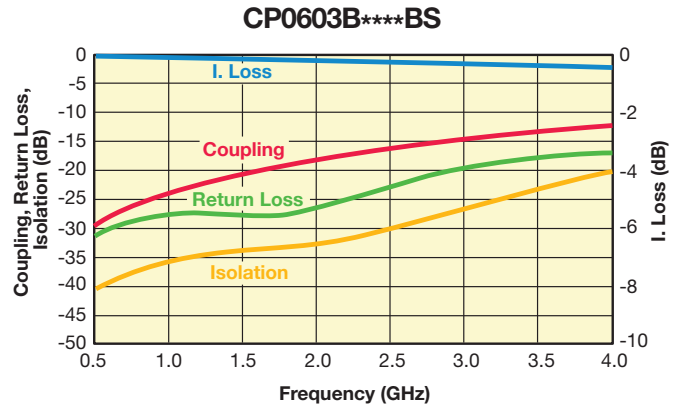
Coupler P/N CP0603B**AS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603B0836AS	824 - 849	24.5±1	0.2	1.2
CP0603B0881AS	869 - 894	24±1	0.2	1.2
CP0603B0902AS	890 - 915	24±1	0.2	1.2
CP0603B0947AS	935 - 960	23.5±1	0.2	1.2
CP0603B0897AS	880 - 915	24±1	0.2	1.2
CP0603B0942AS	925 - 960	23.5±1	0.2	1.2
CP0603B1441AS	1429 - 1453	20±1	0.25	1.2
CP0603B1747AS	1710 - 1785	18±1	0.25	1.2
CP0603B1842AS	1805 - 1880	17.5±1	0.3	1.2
CP0603B1880AS	1850 - 1910	17.5±1	0.3	1.2
CP0603B1960AS	1930 - 1990	17.5±1	0.3	1.2
CP0603B1907AS	1895 - 1920	17.5±1	0.3	1.2
CP0603B1890AS	1880 - 1900	17.5±1	0.3	1.2
CP0603B2442AS	2400 - 2484	15.5±1	0.45	1.2



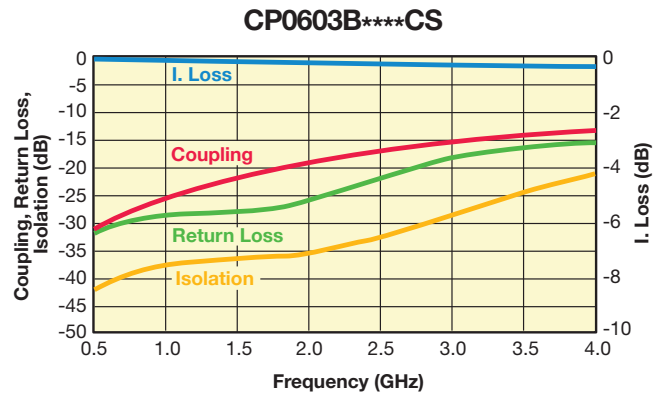
Coupler P/N CP0603B**BS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603B0836BS	824 - 849	25.5±1	0.2	1.2
CP0603B0881BS	869 - 894	25±1	0.2	1.2
CP0603B0902BS	890 - 915	25±1	0.2	1.2
CP0603B0947BS	935 - 960	24.5±1	0.2	1.2
CP0603B0897BS	880 - 915	25±1	0.2	1.2
CP0603B0942BS	925 - 960	24.5±1	0.2	1.2
CP0603B1441BS	1429 - 1453	21±1	0.2	1.2
CP0603B1747BS	1710 - 1785	19±1	0.25	1.2
CP0603B1842BS	1805 - 1880	19±1	0.25	1.2
CP0603B1880BS	1850 - 1910	18.5±1	0.25	1.2
CP0603B1960BS	1930 - 1990	18.5±1	0.25	1.2
CP0603B1907BS	1895 - 1920	18.5±1	0.25	1.2
CP0603B1890BS	1880 - 1900	18.5±1	0.25	1.2
CP0603B2442BS	2400 - 2484	16.5±1	0.35	1.2



Coupler P/N CP0603B**CS**

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max	VSWR max
CP0603B0836CS	824 - 849	26.5±1	0.2	1.2
CP0603B0881CS	869 - 894	26±1	0.2	1.2
CP0603B0902CS	890 - 915	26±1	0.2	1.2
CP0603B0947CS	935 - 960	25.5±1	0.2	1.2
CP0603B0897CS	880 - 915	26±1	0.2	1.2
CP0603B0942CS	925 - 960	25.5±1	0.2	1.2
CP0603B1441CS	1429 - 1453	22±1	0.2	1.2
CP0603B1747CS	1710 - 1785	20.5±1	0.25	1.2
CP0603B1842CS	1805 - 1880	20±1	0.25	1.2
CP0603B1880CS	1850 - 1910	20±1	0.25	1.2
CP0603B1960CS	1930 - 1990	19.5±1	0.25	1.2
CP0603B1907CS	1895 - 1920	20±1	0.25	1.2
CP0603B1890CS	1880 - 1900	20±1	0.25	1.2
CP0603B2442CS	2400 - 2484	18±1	0.35	1.3



Important: Couplers can be used at any frequency within the indicated range.

Thin-Film RF/Microwave Directional Couplers

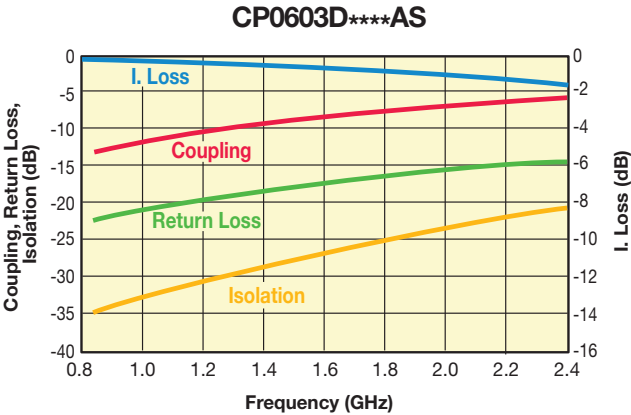
CP0302/CP0402/CP0603/CP0805 and DB0603N/DB0805 3dB 90°

CP0603 SMD Type – High Directivity



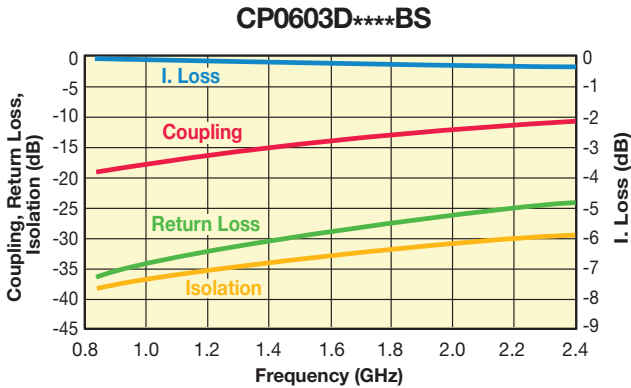
Coupler P/N CP0603D****AS

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
CP0603D0836AS	824 - 849	13.50	0.50	23	21
CP0603D0881AS	869 - 894	13.00	0.50	22	21
CP0603D0902AS	890 - 915	13.00	0.50	22	21
CP0603D0947AS	935 - 960	12.50	0.50	22	21
CP0603D0897AS	880 - 915	13.00	0.50	22	21
CP0603D0942AS	925 - 960	12.50	0.50	22	21
CP0603D1441AS	1429 - 1453	9.00	1.00	18	19
CP0603D1747AS	1710 - 1785	8.00	1.40	17	18
CP0603D1842AS	1805 - 1880	7.50	1.40	17	17
CP0603D1880AS	1850 - 1910	7.50	1.40	16	17
CP0603D1960AS	1930 - 1990	7.00	1.40	16	17
CP0603D1907AS	1895 - 1920	7.00	1.40	16	17
CP0603D1890AS	1880 - 1900	7.00	1.40	16	17
CP0603D2442AS	2400 - 2484	5.50	2.00	15	15



Coupler P/N CP0603D****BS

P/N Examples	Frequency Band [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
CP0603D0836BS	824 - 849	20.00	0.25	36	19
CP0603D0881BS	869 - 894	19.50	0.25	36	19
CP0603D0902BS	890 - 915	19.50	0.25	35	19
CP0603D0947BS	935 - 960	19.00	0.25	36	19
CP0603D0897BS	880 - 915	19.50	0.25	36	19
CP0603D0942BS	925 - 960	19.00	0.25	35	19
CP0603D1441BS	1429 - 1453	15.50	0.40	30	19
CP0603D1747BS	1710 - 1785	14.00	0.50	28	19
CP0603D1842BS	1805 - 1880	13.50	0.55	27	19
CP0603D1880BS	1850 - 1910	13.50	0.55	27	19
CP0603D1960BS	1930 - 1990	13.50	0.55	27	19
CP0603D1907BS	1895 - 1920	13.00	0.55	27	19
CP0603D1890BS	1880 - 1900	13.00	0.55	27	19
CP0603D2442BS	2400 - 2484	11.00	0.70	24	19



Important: Couplers can be used at any frequency within the indicated range.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Kyocera AVX:

<u>CP0603A0947BWTR</u>	<u>CP0603A1747DWTR</u>	<u>CP0603A2442CWTR</u>	<u>CP0603B0881CWTR</u>	<u>CP0603B2442BWTR</u>
<u>CP0603A1747BWTR</u>	<u>CP0603A2442BWTR</u>	<u>CP0603A1890AWTR</u>	<u>CP0603A0881DWTR</u>	<u>CP0603A1441DWTR</u>
<u>CP0603B1880BWTR</u>	<u>CP0603B1960BWTR</u>	<u>CP0603A2442CSTR</u>	<u>CP0603A0460AWTR</u>	<u>CP0603A0836AWTR</u>
<u>CP0603A0967DWTR</u>	<u>CP0603A0991DWTR</u>	<u>CP0603A1550AWTR</u>	<u>CP0603A1880AWTR</u>	<u>CP0603A1880DWTR</u>
<u>CP0603A1960CWTR</u>	<u>CP0603A2070AWTR</u>	<u>CP0603B0836BWTR</u>	<u>CP0603B0902BWTR</u>	<u>CP0603B1880AWTR</u>
<u>CP0603B1960AWTR</u>	<u>CP0603D0863BWTR</u>	<u>CP0603D0880AWTR</u>	<u>CP0603D1441AWTR</u>	<u>CP0603D2442AWTR</u>
<u>CP0603A0902DWTR</u>	<u>CP0603A0942BWTR</u>	<u>CP0603A1842DWTR</u>	<u>CP0603A1890DWTR</u>	<u>CP0603A1907DWTR</u>
<u>CP0603B1441BWTR</u>	<u>CP0603B1747AWTR</u>	<u>CP0603A0836BWTR</u>	<u>CP0603A0836CWTR</u>	<u>CP0603A0836DWTR</u>
<u>CP0603A0881AWTR</u>	<u>CP0603A0902AWTR</u>	<u>CP0603A0902BWTR</u>	<u>CP0603A0902CWTR</u>	<u>CP0603A0942AWTR</u>
<u>CP0603A0947DWTR</u>	<u>CP0603A1441AWTR</u>	<u>CP0603A1441BWTR</u>	<u>CP0603A1441CWTR</u>	<u>CP0603A1575DWTR</u>
<u>CP0603A1600CWTR</u>	<u>CP0603A1747CWTR</u>	<u>CP0603A1842CWTR</u>	<u>CP0603A1890BWTR</u>	<u>CP0603A1907BWTR</u>
<u>CP0603A1960AWTR</u>	<u>CP0603A1960BWTR</u>	<u>CP0603A1960DWTR</u>	<u>CP0603A1970BWTR</u>	<u>CP0603A2442AWTR</u>
<u>CP0603A2442DWTR</u>	<u>CP0603B0836AWTR</u>	<u>CP0603B0836CWTR</u>	<u>CP0603B0902CWTR</u>	<u>CP0603B0947CWTR</u>
<u>CP0603B1441CWTR</u>	<u>CP0603B1620AWTR</u>	<u>CP0603B1747CWTR</u>	<u>CP0603B1842CWTR</u>	<u>CP0603B1950BWTR</u>
<u>CP0603B1960CWTR</u>	<u>CP0603B2442AWTR</u>	<u>CP0603B2442CWTR</u>	<u>CP0603B3550CWTR</u>	<u>CP0603D0837AWTR</u>
<u>CP0603D0881AWTR</u>	<u>CP0603D1034AWTR</u>	<u>CP0603D1880BWTR</u>	<u>CP0603D1890BWTR</u>	<u>CP0603D2442BWTR</u>
<u>CP0603A0897DWTR</u>	<u>CP0603A0942DWTR</u>	<u>CP0603A1880BWTR</u>	<u>CP0603A1907AWTR</u>	<u>CP0603B0942CWTR</u>
<u>CP0603B1842BWTR</u>	<u>CP0603B3000AWTR</u>	<u>CP0603B3000BWTR</u>	<u>CP0603D0450AWTR</u>	<u>CP0603D0836AWTR</u>
<u>CP0603D0897AWTR</u>	<u>CP0603D0902AWTR</u>	<u>CP0603D0942AWTR</u>	<u>CP0603D0947AWTR</u>	<u>CP0603D1747AWTR</u>
<u>CP0603D3000AWTR</u>	<u>CP0603A1842AWTR</u>	<u>CP0603A0836DWTR</u>	<u>CP0603D0902BSTR</u>	<u>CP0603A0836CSTR</u>