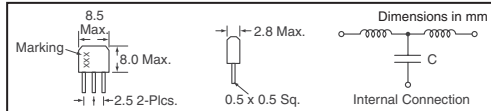


EMI Filters (For Electromagnetic Interference)



Applications: • Communication equipment, cordless phones, automotive phones
• Digital audio and video equipment • Electronic automotive equipment such as engine controls, panels and audio systems • Electronic musical instruments and other digital devices
Specifications: • Rated Current: 5A • Rated Voltage: 50VDC • DCR: 0.05Ω Maximum • Insulation Resistance: 10GΩ Minimum @ 50VDC • HI-Pot: 125VDC • Operating Temperature: -25°C - 85°C



Capacitance ±20% (pF)	25dB AH. Frequency (MHz)	15dB AH. Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each 10 100	Digi-Key Part No.	Tape and Box Pricing 2,000	J.W. Miller Part No.
22	800	220 - 800	M9936CT-ND	.35 .32	M9936TB-ND	103.46/M	EMI220T-RC
47	550 - 700	350 - 800	M9936CT-ND	.35 .32	M9936TB-ND	103.46/M	EMI470T-RC
100	350 - 500	200 - 800	M9941CT-ND	.35 .32	M9941TB-ND	103.46/M	EMI101T-RC
220	200 - 350	100 - 800	M9939CT-ND	.35 .32	M9939TB-ND	103.46/M	EMI221T-RC
270	200 - 300	80 - 800	M9940CT-ND	.35 .32	M9940TB-ND	103.46/M	EMI271T-RC
470	120 - 300	50 - 800	M9937CT-ND	.35 .32	M9937TB-ND	103.46/M	EMI471T-RC
1,000	70 - 200	30 - 800	M9934CT-ND	.35 .32	M9934TB-ND	103.46/M	EMI102T-RC
2,200	45 - 200	20 - 800	M9942CT-ND	.35 .32	M9942TB-ND	103.46/M	EMI222T-RC
10,000	15 - 200	6 - 800	M9935CT-ND†	.35 .32	M9935TB-ND†	103.46/M	EMI103T-RC

† Capacitance Tolerance: -20%, +80%



RF Wide Band Balun Transformers

The Pulse balun transformer offers an excellent insertion loss device in a low cost SMT format. The RF Baluns are ideal for balanced to unbalanced applications and have been designed for applications such as CATV Distribution/Drop Amplifiers, Set Top Boxes and Home Gateways. **Operating Temperature:** -40°C - 85°C

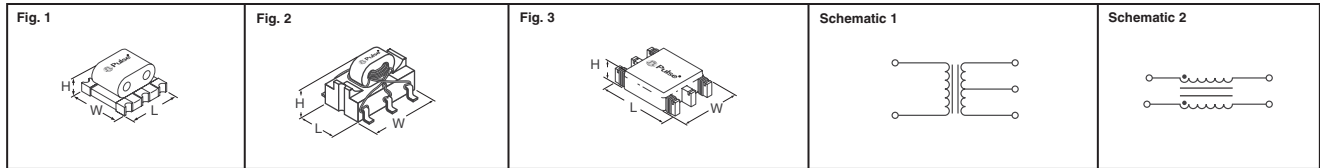


Fig.	Schematic	Impedance Ratio (+/-2%) Primary:Secondary	Turns Ratio (+/-2%) Primary:Secondary	Bandwidth (MHz Typ.) Midband Loss	Insertion Loss (dB Typ.)	Dimensions - Inches			Digi-Key Part No.	Price Each			Pulse Part No.
						L	W	H		1	10	500	
1	2	1:1	1:1	10 - 1000	0.4	0.202 ±0.015	0.204 ±0.015	0.14 Max.	553-1050-ND	1.27	.82	.63	.56
						0.8	0.15 ±0.015	0.15 ±0.02/-0.015		0.11 ±0.015	553-1052-ND	1.41	.94
2	1	1:1	1:1	2.3 - 2700	0.2	0.169 ±0.004	0.209 ±0.004	0.118 ±0.018/-0.012	553-1051-ND	1.41	.94	.72	.64
						0.3	0.272 Max.	0.272 Max.		0.173 Max.	553-1053-ND	1.30	.84
3	1	1:4CT†	1:2CT†	5 - 165	0.6	0.36 Max.	0.265 Max.	0.098 Max.	553-1054-ND	1.86	1.22	.99	.88

† CT indicates Center Tap

TDK RF Balun Transformers HHM Series - Surface Mount

Dimensions in mm

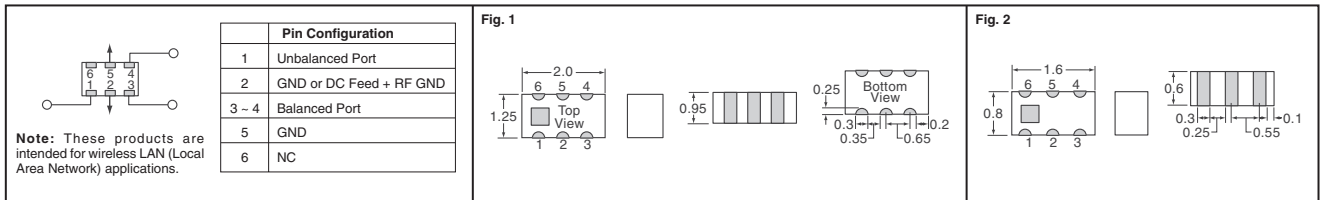


Fig.	Application	Operating Frequency (GHz)	Impedance In/Out (Ω)	Insertion Loss-Max. (dB)	Difference of Phase (Deg.)	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel		TDK Part No.
							1	10	100		Qty.	Pricing	
1	Bluetooth and IEEE802.11b/g	2.4 - 2.5	50/50	1.2	180 ±10	445-1233-1-ND	.77	.58	.39	445-1233-2-ND	2,000	238.86/M	HHM1517
	Bluetooth and IEEE802.11b/g	2.4 - 2.5	50/100	1.0	180 ±10	445-1234-1-ND	1.49	1.12	.75	445-1234-2-ND	2,000	461.15/M	HHM1520
	Bluetooth and IEEE802.11b/g	2.4 - 2.5	50/200	1.0	180 ±10	445-1229-1-ND	1.49	1.12	.75	445-1229-2-ND	2,000	461.15/M	HHM1521
	Wideband-LAN	4.9 - 5.95	50/100	1.0	180 ±10	445-1231-1-ND	1.49	1.12	.75	445-1231-2-ND	2,000	461.15/M	HHM1570B1
	Wideband-LAN	5.15 - 5.875	50/100	1.0	180 ±10	445-1230-1-ND	1.49	1.12	.75	445-1230-2-ND	2,000	461.15/M	HHM1562B
	Bluetooth	2.3 - 2.5	50/75	1.0	180 ±10	445-3249-1-ND	1.63	1.39	1.15	445-3249-2-ND	2,000	490.05/M	HHM1541E1
2	UWB	3.1 - 4.9	50/100	1.0	180 ±10	445-3250-1-ND	1.63	1.39	1.15	445-3250-2-ND	2,000	490.05/M	HHM1583B1
	UWB	3.1 - 4.9	50/100	1.0	180 ±15	445-3386-1-ND†	1.63	1.39	1.15	445-3386-2-ND†	2,000	490.05/M	HHM1596A1
	UWB	3.0 - 8.0	50/100	1.5	180 ±20	445-3387-1-ND	1.63	1.39	1.15	445-3387-2-ND	2,000	490.05/M	HHM1595A1
	Bluetooth and IEEE802.11b/g	2.4 - 2.5	50/100	1.2	180 ±10	445-1232-1-ND	1.49	1.12	.75	445-1232-2-ND	2,000	461.15/M	HHM1711D1
	Bluetooth and IEEE802.11b/g	2.4 - 2.5	50/50	1.2	180 ±10	445-3246-1-ND	1.63	1.39	1.15	445-3246-2-ND	4,000	474.08/M	HHM-1710D1
	Wideband-LAN	4.9 - 5.95	50/100	1.0	180 ±10	445-3247-1-ND	1.63	1.39	1.15	445-3247-2-ND	4,000	474.08/M	HHM1732B1
	Wideband-LAN	4.9 - 5.95	50/200	1.2	180 ±10	445-3248-1-ND	1.63	1.39	1.15	445-3248-2-ND	4,000	474.08/M	HHM1752A2

† Pin Configuration — Pin1 NC, Pin6 Unbalanced Port

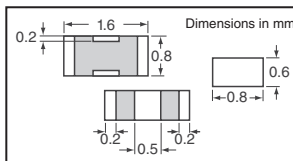


3 Terminal EMI Filters



The regulations for electromagnetic noise are becoming tight in many countries these days for the reason of its influence to human's body. Under this circumstance, Rohm's EMI filter (low internal resistance, three-terminal, 1.6x0.8mm 0603 size) is one of good solutions, for it can cancel the differential-mode noise on the board complying with large current of 4A in the power supply. Various capacitance are in the lineup which enable the noise cancellation at the frequency band.

Specifications:
• Rated Current: 4A • Rated Voltage: 25V • Insulation Resistance: 1000MΩ • Operating Temperature: -55°C - 125°C



Capacitance ±20% (pF)	Digi-Key Part No.	Cut Tape Pricing 10 100	Digi-Key Part No.	Tape and Reel Pricing 4,000	Rohm Part No.
1000	511-1617-1-ND	1.20 10.78	511-1617-2-ND	36.30/M	MCF182CN102M04AK
2200	511-1618-1-ND	1.20 10.78	511-1618-2-ND	36.30/M	MCF182CN222M04AK
3300	511-1619-1-ND	1.20 10.78	511-1619-2-ND	36.30/M	MCF182CN332M04AK
4700	511-1620-1-ND	1.20 10.78	511-1620-2-ND	36.30/M	MCF182CN472M04AK
10000	511-1621-1-ND	1.20 10.78	511-1621-2-ND	36.30/M	MCF182CN103M04AK
22000	511-1622-1-ND	1.20 10.78	511-1622-2-ND	36.30/M	MCF182CN223M04AK
47000	511-1623-1-ND	1.20 10.78	511-1623-2-ND	36.30/M	MCF182CN473M04AK

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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