

Chip Inductors - MPC20000 Series

- Cesa qualified 3201/008 and as per Mil Spec M83446/10
- Excellent Q values even at high frequencies
- Very high self-resonant frequencies (SFRs)
- Extremely stable inductance values from -55 °C to +125 °C
- With or without tab terminations
- Tinned or gold plated terminations
- Frequency range: 790 KHz to 500 MHz
- Operating temperature range: -55 °C to +125 °C
- Weight: 0.15 gram

Electrical Data (25°C)

ID Code	Inductance* μH	Q Min	Test Freq. MHz	SFR Min. MHz	DCR Max. Ω	DC Current mA max	Tol** % Min
MPC20 000 010	0.010	60	150	2000	0.04	1000	10
MPC20 000 012	0.012	70	150	1800	0.04	1000	
MPC20 000 015	0.015	75	150	1500	0.04	1000	
MPC20 000 018	0.018	75	150	1500	0.04	1000	
MPC20 000 022	0.022	60	100	1300	0.05	1000	
MPC20 000 027	0.027	60	100	1300	0.05	1000	5
MPC20 000 033	0.033	60	100	1000	0.05	1000	
MPC20 000 039	0.039	60	100	1000	0.06	900	
MPC20 000 047	0.047	65	100	800	0.06	900	
MPC20 000 056	0.056	65	100	760	0.06	900	
MPC20 000 068	0.068	65	100	700	0.07	840	10
MPC20 000 082	0.082	65	100	650	0.07	840	
MPC20 000 100	0.100	65	50	570	0.07	840	
MPC20 000 120	0.120	65	50	520	0.07	840	
MPC20 000 150	0.150	75	50	400	0.08	790	
MPC20 000 180	0.180	75	50	360	0.08	790	5
MPC20 000 220	0.220	70	50	320	0.08	790	
MPC20 000 270	0.270	70	50	270	0.10	700	
MPC20 000 330	0.330	70	50	240	0.10	700	
MPC20 000 390	0.390	70	50	220	0.10	700	
MPC20 000 470	0.470	70	25	190	0.14	590	2
MPC20 000 560	0.560	70	25	170	0.19	510	
MPC20 000 680	0.680	70	25	160	0.26	430	
MPC20 000 820	0.820	75	25	150	0.30	400	
MPC20 001 000	1.00	75	25	130	0.34	380	
MPC20 001 200	1.20	65	7.9	120	0.45	330	2
MPC20 001 500	1.50	65	7.9	110	0.57	290	
MPC20 001 800	1.80	65	7.9	100	0.72	260	
MPC20 002 200	2.20	65	7.9	80	0.90	230	
MPC20 002 700	2.70	65	7.9	60	1.10	210	
MPC20 003 300	3.30	60	7.9	50	1.20	200	2
MPC20 003 900	3.90	60	7.9	45	1.40	180	
MPC20 004 700	4.70	60	7.9	42	1.60	170	
MPC20 005 600	5.60	65	7.9	40	1.80	160	
MPC20 006 800	6.80	65	7.9	37	2.40	140	

ID Code	Inductance* μH	Q Min	Test Freq. MHz	SFR Min. MHz	DCR Max. Ω	DC Current mA max	Tol** % Min
MPC20 008 200	8.20	65	7.9	34	3.00	130	2
MPC20 010 000	10.0	65	7.9	29	3.50	120	
MPC20 012 000	12.0	60	2.5	27	3.60	118	
MPC20 015 000	15.0	60	2.5	22	3.70	115	
MPC20 018 000	18.0	60	2.5	17	3.80	114	
MPC20 022 000	22.0	60	2.5	16	3.90	113	
MPC20 027 000	27.0	65	2.5	15	4.00	110	
MPC20 033 000	33.0	65	2.5	14	5.00	100	
MPC20 039 000	39.0	65	2.5	13	7.00	84	
MPC20 047 000	47.0	70	2.5	12	8.00	79	
MPC20 056 000	56.0	70	2.5	11	10.0	70	
MPC20 068 000	68.0	65	2.5	10	11.0	67	
MPC20 082 000	82.0	60	2.5	9	12.0	64	
MPC20 100 000	100	60	2.5	8	13.0	62	
MPC20 120 000	120	40	0.79	7	14.0	59	
MPC20 150 000	150	40	0.79	6	16.0	56	
MPC20 180 000	180	40	0.79	5	18.0	52	
MPC20 220 000	220	40	0.79	4	24.0	45	
MPC20 270 000	270	40	0.79	3.3	25.0	44	
MPC20 330 000	330	40	0.79	3.1	29.0	41	
MPC20 390 000	390	40	0.79	2.9	32.0	39	
MPC20 470 000	470	35	0.79	2.4	35.0	37	
MPC20 560 000	560	35	0.79	2.1	45.0	33	
MPC20 680 000	680	35	0.79	1.9	55.0	30	
MPC20 820 000	820	30	0.79	1.8	70.0	26	
MPC20 1000 000	1000	30	0.79	1.7	80.0	25	

* Standard inductance tolerance: $\pm 10\%$

** Tightest achievable tolerances.

Other inductance values and S parameters on request.

Inductance variation: 60 PPM/°Cmax. in the range 0.01 to 1 μH

80 PPM/°Cmax. in the range 1.2 to 10 μH

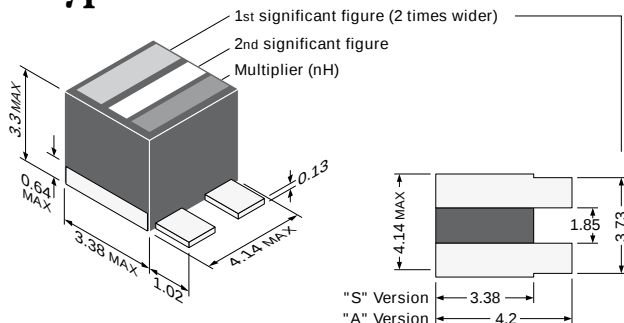
150 PPM/°Cmax. in the range 12 to 100 μH

300 PPM/°Cmax. in the range 120 to 1000 μH

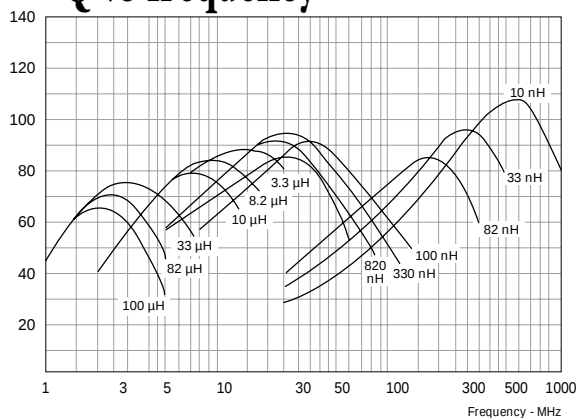
Packaging

Tape and Reel (without tab): 500 pieces
or Tray: 49 pieces

Typical Dimensions (mm)



Q vs frequency



Miniature Chip Inductors MSC120000

QPL Components

MPCI20000 series are usually installed on Military applications and breadboards for Space applications.

Since January 2003, Microspire has been manufacturing Radio Frequency Fixed Coils, MPCI20000 series fulfilling ESA ESCC Generic specification N° 3201 and detail specification N° 3201/008.

This range is named MSC1 (S for space applications).

This qualification approval includes final production tests Chart II, burn-in and electrical measurements to testing level B Chart III and qualification testing Chart IV.

For procurement, different quality levels are offered :

- Final production tests Chart II
- Burn-in and electrical measurements Chart III with level B or C (as required)
- Lot acceptance testing Chart V if required

Components delivered through this specification need to be processed and inspected in accordance with the Microspire Process Identification Document (P.I.D.).

Each component delivered is traceable to its production lot.

Cross reference chart

Microspire Non-QPL ID Code	Microspire QPL ID Code	ESA SCC Component Part Number	Microspire Non-QPL ID Code	Microspire QPL ID Code	ESA SCC Component Part Number
MPCI 20 000 010 x y 10	MSCI 20 000 010 x y 10	3201008 aa b L010 K	MPCI 20 005 600 x y 10/5/2	MSCI 20 005 600 x y 10/5/2	3201008 aa b 5L6 K/J/G
MPCI 20 000 012 x y 10	MSCI 20 000 012 x y 10	3201008 aa b L012 K	MPCI 20 006 800 x y 10/5/2	MSCI 20 006 800 x y 10/5/2	3201008 aa b 6L8 K/J/G
MPCI 20 000 015 x y 10	MSCI 20 000 015 x y 10	3201008 aa b L015 K	MPCI 20 008 200 x y 10/5/2	MSCI 20 008 200 x y 10/5/2	3201008 aa b 8L2 K/J/G
MPCI 20 000 018 x y 10	MSCI 20 000 018 x y 10	3201008 aa b L018 K	MPCI 20 010 000 x y 10/5/2	MSCI 20 010 000 x y 10/5/2	3201008 aa b 100 K/J/G
MPCI 20 000 022 x y 10/5	MSCI 20 000 022 x y 10/5	3201008 aa b L022 K/J	MPCI 20 012 000 x y 10/5/2	MSCI 20 012 000 x y 10/5/2	3201008 aa b 120 K/J/G
MPCI 20 000 027 x y 10/5	MSCI 20 000 027 x y 10/5	3201008 aa b L027 K/J	MPCI 20 015 000 x y 10/5/2	MSCI 20 015 000 x y 10/5/2	3201008 aa b 150 K/J/G
MPCI 20 000 033 x y 10/5	MSCI 20 000 033 x y 10/5	3201008 aa b L033 K/J	MPCI 20 018 000 x y 10/5/2	MSCI 20 018 000 x y 10/5/2	3201008 aa b 180 K/J/G
MPCI 20 000 039 x y 10/5	MSCI 20 000 039 x y 10/5	3201008 aa b L039 K/J	MPCI 20 022 000 x y 10/5/2	MSCI 20 022 000 x y 10/5/2	3201008 aa b 220 K/J/G
MPCI 20 000 047 x y 10/5	MSCI 20 000 047 x y 10/5	3201008 aa b L047 K/J	MPCI 20 027 000 x y 10/5/2	MSCI 20 027 000 x y 10/5/2	3201008 aa b 270 K/J/G
MPCI 20 000 056 x y 10/5	MSCI 20 000 056 x y 10/5	3201008 aa b L056 K/J	MPCI 20 033 000 x y 10/5/2	MSCI 20 033 000 x y 10/5/2	3201008 aa b 330 K/J/G
MPCI 20 000 068 x y 10/5	MSCI 20 000 068 x y 10/5	3201008 aa b L068 K/J	MPCI 20 039 000 x y 10/5/2	MSCI 20 039 000 x y 10/5/2	3201008 aa b 390 K/J/G
MPCI 20 000 082 x y 10/5	MSCI 20 000 082 x y 10/5	3201008 aa b L082 K/J	MPCI 20 047 000 x y 10/5/2	MSCI 20 047 000 x y 10/5/2	3201008 aa b 470 K/J/G
MPCI 20 000 100 x y 10	MSCI 20 000 100 x y 10	3201008 aa b L10 K	MPCI 20 056 000 x y 10/5/2	MSCI 20 056 000 x y 10/5/2	3201008 aa b 560 K/J/G
MPCI 20 000 120 x y 10	MSCI 20 000 120 x y 10	3201008 aa b L12 K	MPCI 20 068 000 x y 10/5/2	MSCI 20 068 000 x y 10/5/2	3201008 aa b 680 K/J/G
MPCI 20 000 150 x y 10	MSCI 20 000 150 x y 10	3201008 aa b L15 K	MPCI 20 082 000 x y 10/5/2	MSCI 20 082 000 x y 10/5/2	3201008 aa b 820 K/J/G
MPCI 20 000 180 x y 10	MSCI 20 000 180 x y 10	3201008 aa b L18 K	MPCI 20 100 000 x y 10/5/2	MSCI 20 100 000 x y 10/5/2	3201008 aa b 101 K/J/G
MPCI 20 000 220 x y 10	MSCI 20 000 220 x y 10	3201008 aa b L22 K	MPCI 20 120 000 x y 10/5/2	MSCI 20 120 000 x y 10/5/2	3201008 aa b 121 K/J/G
MPCI 20 000 270 x y 10	MSCI 20 000 270 x y 10	3201008 aa b L27 K	MPCI 20 150 000 x y 10/5/2	MSCI 20 150 000 x y 10/5/2	3201008 aa b 151 K/J/G
MPCI 20 000 330 x y 10	MSCI 20 000 330 x y 10	3201008 aa b L33 K	MPCI 20 180 000 x y 10/5/2	MSCI 20 180 000 x y 10/5/2	3201008 aa b 181 K/J/G
MPCI 20 000 390 x y 10	MSCI 20 000 390 x y 10	3201008 aa b L39 K	MPCI 20 220 000 x y 10/5/2	MSCI 20 220 000 x y 10/5/2	3201008 aa b 221 K/J/G
MPCI 20 000 470 x y 10/5	MSCI 20 000 470 x y 10/5	3201008 aa b L47 K/J	MPCI 20 270 000 x y 10/5/2	MSCI 20 270 000 x y 10/5/2	3201008 aa b 271 K/J/G
MPCI 20 000 560 x y 10/5	MSCI 20 000 560 x y 10/5	3201008 aa b L56 K/J	MPCI 20 330 000 x y 10/5/2	MSCI 20 330 000 x y 10/5/2	3201008 aa b 331 K/J/G
MPCI 20 000 680 x y 10/5	MSCI 20 000 680 x y 10/5	3201008 aa b L68 K/J	MPCI 20 390 000 x y 10/5/2	MSCI 20 390 000 x y 10/5/2	3201008 aa b 391 K/J/G
MPCI 20 000 820 x y 10/5	MSCI 20 000 820 x y 10/5	3201008 aa b L82 K/J	MPCI 20 470 000 x y 10/5/2	MSCI 20 470 000 x y 10/5/2	3201008 aa b 471 K/J/G
MPCI 20 001 000 x y 10/5	MSCI 20 001 000 x y 10/5	3201008 aa b L10 K/J	MPCI 20 560 000 x y 10/5/2	MSCI 20 560 000 x y 10/5/2	3201008 aa b 561 K/J/G
MPCI 20 001 200 x y 10/5/2	MSCI 20 001 200 x y 10/5/2	3201008 aa b 1L2 K/J/G	MPCI 20 680 000 x y 10/5/2	MSCI 20 680 000 x y 10/5/2	3201008 aa b 681 K/J/G
MPCI 20 001 500 x y 10/5/2	MSCI 20 001 500 x y 10/5/2	3201008 aa b 1L5 K/J/G	MPCI 20 820 000 x y 10/5/2	MSCI 20 820 000 x y 10/5/2	3201008 aa b 821 K/J/G
MPCI 20 001 800 x y 10/5/2	MSCI 20 001 800 x y 10/5/2	3201008 aa b 1L8 K/J/G	MPCI 20 1000 000 x y 10/5/2	MSCI 20 1000 000 x y 10/5/2	3201008 aa b 102 K/J/G
MPCI 20 002 200 x y 10/5/2	MSCI 20 002 200 x y 10/5/2	3201008 aa b 2L2 K/J/G			
MPCI 20 002 700 x y 10/5/2	MSCI 20 002 700 x y 10/5/2	3201008 aa b 2L7 K/J/G			
MPCI 20 003 300 x y 10/5/2	MSCI 20 003 300 x y 10/5/2	3201008 aa b 3L3 K/J/G			
MPCI 20 003 900 x y 10/5/2	MSCI 20 003 900 x y 10/5/2	3201008 aa b 3L9 K/J/G			
MPCI 20 004 700 x y 10/5/2	MSCI 20 004 700 x y 10/5/2	3201008 aa b 4L7 K/J/G			
			aa	b	K/J/G (tolerance)
			aa = 03 for Au Termination	b = B for Chart III level B	K for ±10%
			aa = 04 for SnPb Termination	b = C for Chart III level C	J for ±5%
					G for ±2%

To Order

MPCI 20 ### ## x y z

MPCI	20	### ##	x	y	z
Radio Frequency Fixed Coils	Size	Inductance Value (nH) from 000 010 to 010 000	Terminations x = T for Tinned x = G for Tinned	Terminations shape y = S without tab y = A with tab (Not valid for space use)	Tolerance : z = 10 for ±10% z = 5 for ±5% z = 2 for ±2%

