

# TMAT Series ( Rev. 1.0 )



## Features

- \* High current and Low DCR
- \* Low profile for machine placement
- \* Minimize electromagnetic interference
- \* Prevent EMI Effect via precise impedance
- \* Custom design available

## Product Identification

TMAT      6030      -      1R5      M  
 1              2                              3              4

1. Product Code
2. Size Code
3. Inductance: 1.5uH
4. Tolerance: M=±20%, N=±30%

**Designed** with low RDC and ultra large current. Molded magnetic shielded type is suitable for high -density mounting & ultra low buzz noise. Soldering can be easily confirmed when mounting onto board.

## Applications

- \* High density DC/DC converters
- \* POL convertes
- \* High current VRM/VRD for notebook / Server / desktop CPUs
- \* High speed charger

## Operating & Storage Condition

- \* Operating Temp :Stand Type:-25 to +125°C
- \* Storage Temp : Stand Type: -25 to +125°C
- \* Storage Life Time :12 Months @25°C, RH40~65%

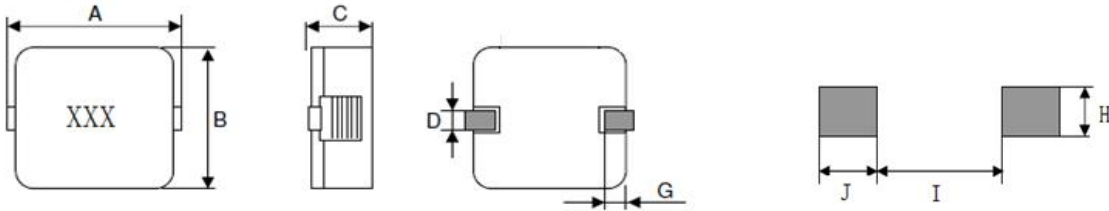
## Test Equipment

- \* HP4284A,HP42841A- L,IDC,Q,RDC
- \* HP8753D Network Analyzer - SRF

## Standard Atmospheric Conditions

- \* Ambient Temp : 20 ± 15°C
- \* Relative Humidity : 65 ± 20%

## Dimension & Recommended PAD Layout: [ mm ]



Size Code	A(±0.5)	B(±0.5)	C(max.)	D	G(±0.5)	H(ref.)	I(ref.)	J(ref.)
6030	7.0±0.4	6.9±0.4	3.3	1.2±0.3	1.8	2.2	2.4	2.7
6040	7.0±0.4	6.9±0.4	4.0	1.2±0.3	1.8	2.2	2.4	2.7
6050	7.0±0.4	6.9±0.4	5.0	1.2±0.3	1.8	2.2	2.4	2.7
1030	10.5	10.2	3.1	2.0±0.5	2.6	3.5	3.9	3.8
1040	10.5	10.2	4.2	2.5±1.0	2.0	4.0	3.8	3.9
1050	10.5	10.2	5.0	2.0±0.5	2.0	4.0	3.8	3.5
1335	13.0±1.0	12.8	3.5	2.5±0.5	3.0±1.0	5.0	6.3	3.9
1350	13.0±1.0	12.8	5.0	2.5±0.5	3.0±1.0	5.0	6.0	4.5
1365	13.0±1.0	12.8	6.5	3.0±1.0	3.0±1.0	5.0	6.0	4.5
1890	18.3±1.0	18.2	9.2	3.5±1.5	5.0±1.0	6.0	7.3	6.0



## TMAT Series ( Rev. 1.0 )

## Electrical Characteristics

P/N	L ( $\mu$ H)	Tolerance	DCR ( $m\Omega$ ) typ.	DCR ( $m\Omega$ ) max.	Isat (A) max.	Irms (A) max.
TMAT6030-R13M	0.13	20%	0.91	1.00	48.0	22.0
TMAT6030-R24M	0.24	20%	1.80	1.98	40.0	18.0
TMAT6030-R52M	0.52	20%	3.70	4.07	20.0	14.0
TMAT6030-R95M	0.95	20%	6.20	6.82	13.0	11.0
TMAT6030-1R2M	1.20	20%	8.60	9.46	13.0	8.5
TMAT6030-1R5M	1.50	20%	12.70	13.97	12.0	7.5
TMAT6030-2R0M	2.00	20%	14.20	15.62	9.0	6.5
TMAT6040-R22M	0.22	20%	1.1	1.21	32.0	21.0
TMAT6040-R40M	0.40	20%	1.85	2.04	25.0	19.0
TMAT6040-R68M	0.68	20%	3.10	3.41	20.0	17.0
TMAT6040-1R0M	1.00	20%	4.60	5.06	19.0	15.0
TMAT6040-1R5M	1.50	20%	6.60	7.26	14.0	11.0
TMAT6040-2R2M	2.20	20%	11.40	12.54	13.0	9.0
TMAT6040-3R3M	3.30	20%	17.20	18.92	11.0	6.5
TMAT6040-4R7M	4.70	20%	19.50	21.45	7.0	6.0
TMAT6050-R24M	0.24	20%	1	1.1	28.0	20.0
TMAT6050-R47M	0.47	20%	1.35	1.49	20.0	18.0
TMAT6050-R76M	0.76	20%	2.25	2.48	15.0	15.5
TMAT6050-1R1M	1.10	20%	3.15	3.47	13.0	15.0
TMAT6050-1R5M	1.50	20%	4.30	4.73	11.0	13.0
TMAT6050-2R0M	2.00	20%	5.85	6.44	9.0	11.5
TMAT6050-3R3M	3.30	20%	9.00	9.90	8.0	9.0
TMAT6050-4R9M	4.90	20%	14.50	15.95	6.5	6.5
TMAT6050-6R5M	6.50	20%	21.50	23.65	6.0	6.0
TMAT6050-7R6M	7.60	20%	30.20	33.22	4.8	4.2
TMAT6050-8R5M	8.50	20%	32.50	35.75	4.5	4.0
TMAT6050-100M	10.00	20%	33.00	36.30	4.0	3.5
TMAT1030-R20M	0.20	20%	0.82	0.90	50.0	22.0
TMAT1030-R33M	0.33	20%	2.17	2.39	36.0	18.0
TMAT1030-R56M	0.56	20%	2.17	2.39	33.0	18.0
TMAT1030-R68M	0.68	20%	4.79	5.27	21.0	14.0
TMAT1030-1R0M	1.00	20%	4.79	5.27	21.0	14.0
TMAT1030-1R2M	1.20	20%	6.60	7.26	15.0	12.0
TMAT1030-1R5M	1.50	20%	6.60	7.26	18.0	12.0
TMAT1030-2R2M	2.20	20%	11.38	12.52	15.0	9.0
TMAT1040-R15M	0.15	20%	0.58	0.64	60.0	25.0
TMAT1040-R30M	0.30	20%	1.1	1.21	35.0	22.0
TMAT1040-R56M	0.56	20%	1.61	1.77	30.0	20.0
TMAT1040-1R0M	1.00	20%	3.30	3.63	20.0	16.0
TMAT1040-1R5M	1.50	20%	5.30	5.83	17.0	14.0
TMAT1040-2R2M	2.00	20%	7.30	8.03	13.0	11.0
TMAT1040-2R8M	2.80	20%	10.60	11.66	11.0	9.5
TMAT1040-4R3M	4.30	20%	14.10	15.51	8.0	8.0

\* Test Condition: @100KHz/ 0.1V

\* Irms DC current (A) that will cause an approximate  $\Delta T$  of 50°C

\* Isat DC current (A) that will cause L to drop approximately 30%



## TMAT Series ( Rev. 1.0 )

## Electrical Characteristics

P/N	L (uH)	Tolerance	DCR (mΩ) typ.	DCR (mΩ) max.	Isat (A) max.	Irms (A) max.
TMAT1050-R16M	0.16	20%	0.51	0.56	58.0	25.0
TMAT1050-R40M	0.40	20%	0.67	0.74	37.0	24.0
TMAT1050-R72M	0.72	20%	1.30	1.43	35.0	22.0
TMAT1050-1R2M	1.20	20%	1.80	1.98	25.0	20.0
TMAT1050-1R8M	1.80	20%	3.50	3.85	18.0	16.0
TMAT1050-2R4M	2.40	20%	4.75	5.23	17.0	14.0
TMAT1050-3R3M	3.30	20%	5.90	6.49	15.0	12.0
TMAT1050-4R2M	4.20	20%	7.10	7.81	14.0	11.0
TMAT1050-5R5M	5.50	20%	10.30	11.33	12.0	10.0
TMAT1050-6R5M	6.5	20%	12.50	13.75	10.0	8.4
TMAT1050-7R8M	7.8	20%	13.60	14.96	9.5	8.0
TMAT1050-100M	10.0	20%	16.30	17.93	8.5	7.2
TMAT1050-160M	16.0	20%	34.50	37.95	6.5	5.0
TMAT1335-R25N	0.25	30%	0.75	0.83	60.0	24.0
TMAT1335-R68M	0.68	20%	1.58	1.74	40.0	22.0
TMAT1335-1R2M	1.20	20%	2.85	3.14	28.0	17.0
TMAT1335-1R8M	1.80	20%	5.60	6.16	22.0	14.0
TMAT1335-2R2M	2.20	20%	5.70	6.27	18.0	14.0
TMAT1335-3R3M	3.30	20%	8.10	8.91	14.0	12.0
TMAT1350-R19M	0.19	20%	0.50	0.55	60.0	29.0
TMAT1350-R47M	0.47	20%	0.90	0.99	50.0	26.0
TMAT1350-R90M	0.90	20%	1.60	1.76	28.0	24.0
TMAT1350-1R4M	1.40	20%	2.40	2.64	26.0	22.0
TMAT1350-2R3M	2.30	20%	3.70	4.07	17.0	17.5
TMAT1350-3R2M	3.20	20%	5.30	5.83	15.0	16.0
TMAT1350-4R8M	4.80	20%	10.50	11.55	13.0	11.0
TMAT1350-6R0M	6.00	20%	13.50	14.85	11.5	9.5
TMAT1350-8R2M	8.20	20%	11.60	12.76	11.0	10.0
TMAT1350-100M	10.00	20%	14.10	15.51	10.0	8.5
TMAT1365-R22M	0.20	20%	0.35	0.39	65.0	32.0
TMAT1365-R47M	0.47	20%	0.67	0.74	50.0	30.0
TMAT1365-R82M	0.82	20%	0.90	0.99	35.0	27.0
TMAT1365-1R3M	1.30	20%	1.80	1.98	25.0	25.0
TMAT1365-2R0M	2.00	20%	2.60	2.86	22.0	23.0
TMAT1365-2R8M	2.80	20%	3.30	3.63	17.5	20.0
TMAT1365-3R7M	3.70	20%	4.90	5.39	16.0	17.0
TMAT1365-4R7M	4.70	20%	7.00	7.70	15.0	13.0
TMAT1365-6R0M	6.00	20%	8.40	9.24	14.0	12.0
TMAT1365-7R3M	7.30	20%	5.90	6.49	12.0	13.0
TMAT1365-9R2M	9.20	20%	7.80	8.58	10.5	12.0
TMAT1365-110M	11.30	20%	9.10	10.00	9.5	11.0
TMAT1365-130M	13.00	20%	11.20	12.32	9.0	10.0
TMAT1365-150M	15.40	20%	14.80	16.28	8.0	9.0
TMAT1365-220M	22.00	20%	24.70	27.17	6.5	6.0

\* Test Condition: @100KHz/ 0.1V

\* Irms DC current (A) that will cause an approximate ΔT of 50°C

\* Isat DC current (A) that will cause L to drop approximately 30%



## TMAT Series ( Rev. 1.0 )

## Electrical Characteristics

P/N	L ( $\mu$ H)	Tolerance	DCR (m $\Omega$ ) typ.	DCR (m $\Omega$ ) max.	Isat (A) max.	Irms (A) max.
TMAT1890-R82M	0.82	20%	0.54	0.58	65.0	41.5
TMAT1890-1R3M	1.30	20%	0.94	1.02	62.0	34.5
TMAT1890-1R9M	1.90	20%	1.20	1.30	52.0	32.5
TMAT1890-2R6M	2.60	20%	1.58	1.71	50.0	31.5
TMAT1890-3R6M	3.60	20%	3.10	3.35	37.0	22.5
TMAT1890-4R5M	4.50	20%	3.40	3.67	37.0	20.5
TMAT1890-5R6M	5.60	20%	3.70	4.00	33.0	19.0
TMAT1890-6R8M	6.80	20%	4.10	4.43	27.0	18.5
TMAT1890-100M	10.00	20%	6.90	7.45	21.5	15.0
TMAT1890-100MT	10.00	20%	7.10	7.67	18.5	16.5
TMAT1890-150M	15.00	20%	9.30	10.05	14.0	14.0
TMAT1890-220M	22.00	20%	14.60	15.77	11.0	11.0
TMAT1890-330M	33.00	20%	22.60	24.41	9.0	8.5
TMAT1890-470M	47.00	20%	34.00	36.72	7.0	6.8

\* Test Condition: @100KHz/ 0.1V

\* I<sub>rms</sub> DC current (A) that will cause an approximate  $\Delta T$  of 50°C

\* I<sub>sat</sub> DC current (A) that will cause L to drop approximately 30%

