

TMDS Series (Rev. 1.0)



Features

- * RoHS compliant
- * Low profile type
- * Shielded construction
- * Ultra low buzz noise due to molding construction

Product Identification

<u>TMDS</u>	<u>6030</u>	-	<u>100</u>	<u>M</u>
1	2		3	4

1. Product Code
2. Size Code
3. Inductance: 10uH
4. Tolerance: M=±20%, N=±30%

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

Applications

- * High density DC/DC converters
- * POL converters/ High speed charger
- * High current VRM/VRD for notebook/Server/CPU's
- * Ultra thin NB/Monitor/TV/Tablet

Operating & Storage Condition

- * Operating Temp. : -55 to +125°C
- * Storage Temp. : -25 to +35°C
- * Storage Life Time : 12 Months @25°C , RH 70%

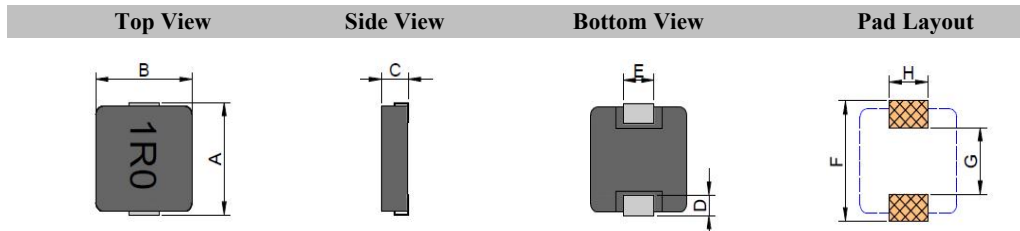
Test Equipment

- * Wayne kerr 3260B/G LCR Meter
- * Wayne kerr 3265B Bias Current Source

Standard Atmospheric Conditions

- * Ambient Temp : 20+/-15°C
- * Relative Humidity : 65+/-20%

Dimension & Recommended PAD Layout: [mm]



Size Code	A(max.)	B(max.)	C(max.)	D(±0.5)	E(±0.5)	F(ref.)	G(ref.)	H(ref.)
3020	3.6	3.2	2.0	0.7±0.2	1.2±0.2	4.1	1.9	1.5
4020	4.9	4.4	2.0	1.0±0.3	1.5±0.3	5.0	2.2	2.3
5020	5.9	5.2	2.0	1.0±0.3	2.0±0.3	7.0	3.0	2.5
5030	5.9	5.2	3.0	1.0±0.3	2.0±0.3	7.0	3.0	2.5
6020	7.6	6.9	2.0	1.5	3.0±0.3	7.6	3.7	3.4
6024	7.6	6.9	2.4	1.5	3.0±0.3	7.6	3.7	3.4
6030	7.6	6.9	3.0	1.5	3.0±0.3	7.6	3.7	3.4
6040	7.6	6.9	4.0	1.5	3.0±0.3	7.6	3.7	3.4
6050	7.9	7.0	5.0	1.5	3.0±0.3	7.8	3.7	3.4
8060	9.5	8.5	6.2	2.5	3.0±0.3	9.2	3.8	3.4
1030	11.8	10.8	3.0	2.2	3.2	13.6	5.4	4.1
1040	11.8	10.8	4.0	2.2	3.2	13.6	5.4	4.1
1050	11.8	10.8	5.2	2.2	3.2	13.6	5.4	4.1
1080	11.8	10.8	8.2	2.5	3.0±0.3	13.6	5.4	4.1
1235	14.5	13.0	3.5	2.5	3.5	14.5	6.0	4.5
1240	14.5	13.0	4.0	2.5	3.5	14.5	6.0	4.5
1250	14.5	13.0	5.0	2.5	3.5	14.5	6.0	4.5
1260	14.5	13.0	6.0	2.5	3.5	14.5	6.0	4.5
1265	14.5	13.0	6.8	2.5	3.5	14.5	6.0	4.5
1770	19.0	17.5	7.0	3.3	11.7±0.3	19.5	11.2	13.0



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Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance (\pm %)	DCR ($m\Omega$) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS3020-R47M	0.47	20	30.0	5.0	7.2
TMDS3020-R68M	0.68	20	40.0	4.0	6.1
TMDS3020-1R0M	1.00	20	60.0	3.0	5.5
TMDS3020-1R5M	1.50	20	85.0	3.3	4.0
TMDS3020-2R2M	2.20	20	115.0	3.0	3.4
TMDS3020-3R3M	3.30	20	210.0	2.0	3.1
TMDS3020-4R7M	4.70	20	293.0	1.6	2.8
TMDS3020-6R8M	6.80	20	400.0	1.4	2.0
TMDS3020-8R2M	8.20	20	463.0	1.2	1.7
TMDS3020-100M	10.00	20	550.0	1.0	1.4
TMDS4020-R10N	0.10	30	5.5	12.0	22.0
TMDS4020-R18N	0.18	30	7.5	10.0	15.0
TMDS4020-R22M	0.22	20	8.0	9.0	12.5
TMDS4020-R33M	0.33	20	14.0	9.0	18.0
TMDS4020-R36M	0.36	20	15.0	7.0	11.0
TMDS4020-R47M	0.47	20	14.0	7.0	9.5
TMDS4020-R56M	0.56	20	18.0	6.5	10.0
TMDS4020-R68M	0.68	20	21.0	5.2	8.0
TMDS4020-1R0M	1.00	20	27.0	4.5	7.0
TMDS4020-1R2M	1.20	20	27.0	4.5	7.0
TMDS4020-1R5M	1.50	20	48.0	4.0	6.0
TMDS4020-2R2M	2.20	20	58.0	3.0	4.0
TMDS4020-3R3M	3.30	20	87.0	2.0	3.0
TMDS4020-4R7M	4.70	20	105.0	2.0	3.0
TMDS4020-5R6M	5.60	20	150.0	1.5	2.0
TMDS4020-6R8M	6.80	20	150.0	1.8	2.0
TMDS4020-8R2M	8.20	20	220.0	1.8	2.0
TMDS4020-100M	10.00	20	290.0	1.5	1.8
TMDS4020-150M	15.00	20	374.0	1.5	1.7
TMDS4020-220M	22.00	20	500.0	1.2	1.4

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* I_{rms} DC current (A) that will cause an approximate ΔT of 40°C

* I_{sat} DC current (A) that will cause L to drop approximately 30%

* Tolerance: M= \pm 20%, N= \pm 30%



TMDS Series (Rev. 1.0)

Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance (\pm %)	DCR ($m\Omega$) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS5020-1R0M	1.0	20	22.0	6.0	8.0
TMDS5020-1R5M	1.5	20	36.0	4.5	7.0
TMDS5020-2R2M	2.2	20	48.0	4.5	7.0
TMDS5020-3R3M	3.3	20	80.0	3.5	6.0
TMDS5020-4R7M	4.7	20	90.0	2.5	4.0
TMDS5020-6R8M	6.8	20	90.0	2.0	3.0
TMDS5030-1R0M	1.0	20	16.0	7.0	11.0
TMDS5030-1R2M	1.2	20	16.0	6.5	10.5
TMDS5030-1R5M	1.5	20	33.0	4.5	7.0
TMDS5030-2R2M	2.2	20	37.4	4.5	7.0
TMDS5030-3R3M	3.3	20	60.0	3.5	6.0
TMDS5030-4R7M	4.7	20	85.0	3.0	4.5
TMDS5030-5R6M	5.6	20	86.0	3.0	4.5
TMDS5030-6R8M	6.8	20	90.0	2.0	4.0
TMDS5030-100M	10.0	20	100.0	1.5	2.5
TMDS6020-1R0M	1.0	20	20.0	7.0	14.0
TMDS6020-1R5M	1.5	20	30.0	6.0	12.0
TMDS6020-2R2M	2.2	20	64.0	5.0	10.0
TMDS6020-3R3M	3.3	20	68.0	3.3	7.0
TMDS6020-4R7M	4.7	20	70.0	3.0	5.0
TMDS6020-6R8M	6.8	20	115.0	3.0	4.0
TMDS6020-100M	10.0	20	154.0	2.8	3.5
TMDS6024-R10M	0.1	20	3.5	20.0	50.0
TMDS6024-R68M	0.7	20	9.4	9.0	18.0
TMDS6024-1R0M	1.0	20	15.0	7.0	14.0
TMDS6024-1R5M	1.5	20	22.0	6.5	12.0
TMDS6024-2R2M	2.2	20	30.0	6.0	10.0
TMDS6024-3R3M	3.3	20	50.0	5.0	8.5
TMDS6024-4R7M	4.7	20	63.0	3.5	8.0
TMDS6024-6R8M	6.8	20	90.0	3.0	5.5
TMDS6024-100M	10.0	20	110.0	2.0	3.5

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* I_{rms} DC current (A) that will cause an approximate ΔT of 40°C

* I_{sat} DC current (A) that will cause L to drop approximately 30%

* Tolerance: M= $\pm 20\%$, N= $\pm 30\%$



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Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance (\pm %)	DCR ($m\Omega$) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS6030-R22M	0.22	20	3.5	20.0	40.0
TMDS6030-R33M	0.33	20	3.9	20.0	30.0
TMDS6030-R47M	0.47	20	4.5	17.5	25.0
TMDS6030-R56M	0.56	20	5.5	15.5	24.0
TMDS6030-R68M	0.68	20	5.5	14.0	23.0
TMDS6030-R75M	0.75	20	6.6	14.0	23.0
TMDS6030-R82M	0.82	20	8.0	13.0	20.0
TMDS6030-1R0M	1.00	20	10.0	11.0	16.0
TMDS6030-1R5M	1.50	20	16.0	9.0	14.0
TMDS6030-1R8M	1.80	20	18.0	8.5	14.0
TMDS6030-2R2M	2.20	20	20.0	8.0	12.0
TMDS6030-2R5M	2.50	20	26.0	7.0	12.0
TMDS6030-3R3M	3.30	20	30.0	6.0	10.0
TMDS6030-4R7M	4.70	20	40.0	5.5	9.0
TMDS6030-5R6M	5.60	20	60.0	5.0	7.0
TMDS6030-6R8M	6.80	20	60.0	4.5	6.0
TMDS6030-8R2M	8.20	20	68.0	4.0	6.0
TMDS6030-100M	10.00	20	105.0	3.0	5.5
TMDS6030-150M	15.00	20	140.0	2.8	4.0
TMDS6030-220M	22.00	20	167.0	2.5	3.5
TMDS6040-R22M	0.22	20	3.00	23.00	35.00
TMDS6040-R50M	0.50	20	4.50	17.00	23.00
TMDS6040-1R1M	1.10	20	7.00	11.00	18.00
TMDS6040-1R5M	1.50	20	14.00	10.00	15.00
TMDS6040-2R2M	2.20	20	18.00	8.50	12.00
TMDS6040-3R3M	3.30	20	23.00	7.00	11.00
TMDS6040-4R7M	4.70	20	30.00	6.00	10.00
TMDS6040-5R6M	5.60	20	38.00	5.50	8.00
TMDS6040-6R8M	6.80	20	45.00	5.00	7.00
TMDS6040-8R2M	8.20	20	52.00	4.50	6.00
TMDS6040-100M	10.00	20	60.00	4.00	5.00
TMDS6040-120M	12.00	20	72.00	3.60	5.00
TMDS6040-150M	15.00	20	80.00	3.20	4.30

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* I_{rms} DC current (A) that will cause an approximate ΔT of 40°C

* I_{sat} DC current (A) that will cause L to drop approximately 30%

* Tolerance: M= $\pm 20\%$, N= $\pm 30\%$



TMDS Series (Rev. 1.0)

Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance (\pm %)	DCR (m Ω) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS6050-R47M	0.47	20	3.9	18.0	21.0
TMDS6050-R56M	0.56	20	4.8	17.0	20.0
TMDS6050-R60M	0.60	20	5.5	16.0	20.0
TMDS6050-R68M	0.68	20	6.0	14.0	19.0
TMDS6050-R82M	0.82	20	4.9	14.0	17.0
TMDS6050-1R0M	1.00	20	6.5	13.0	15.0
TMDS6050-1R2M	1.20	20	9.0	12.0	18.0
TMDS6050-1R5M	1.50	20	12.0	10.0	18.0
TMDS6050-2R2M	2.20	20	12.5	8.0	12.0
TMDS6050-3R3M	3.30	20	20.9	7.0	9.0
TMDS6050-4R7M	4.70	20	25.0	6.5	7.0
TMDS6050-5R6M	5.60	20	31.0	6.0	7.0
TMDS6050-6R8M	6.80	20	38.0	5.0	7.0
TMDS6050-8R2M	8.20	20	45.0	5.0	6.0
TMDS6050-100M	10.00	20	60.0	4.0	6.0
TMDS6050-150M	15.00	20	85.0	3.0	5.0
TMDS6050-220M	22.00	20	85.0	3.0	4.0
TMDS6050-330M	33.00	20	237.0	2.0	3.0
TMDS6050-470M	47.00	20	280.0	2.0	2.5
TMDS8060-R82M	0.82	20	4.8	16.0	24.0
TMDS8060-1R0M	1.00	20	5.6	14.0	21.0
TMDS8060-2R2M	2.20	20	12.0	12.0	20.0
TMDS8060-3R3M	3.30	20	13.0	10.0	15.0
TMDS8060-4R7M	4.70	20	20.0	8.0	14.0
TMDS8060-6R8M	6.80	20	28.0	7.0	11.0
TMDS8060-100M	10.00	20	36.0	5.0	10.0
TMDS8060-150M	15.00	20	55.0	4.0	7.5
TMDS8060-220M	22.00	20	74.0	3.5	7.0
TMDS8060-330M	33.00	20	140.0	3.0	5.0
TMDS8060-470M	47.00	20	192.0	2.8	4.0
TMDS8060-560M	56.00	20	204.0	2.0	3.5
TMDS8060-680M	68.00	20	233.0	1.5	3.0
TMDS8060-101M	100.00	20	326.0	1.2	2.0

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* I_{rms} DC current (A) that will cause an approximate ΔT of 40°C

* I_{sat} DC current (A) that will cause L to drop approximately 30%

* Tolerance: M= \pm 20%, N= \pm 30%



TMDS Series (Rev. 1.0)

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (± %)	DCR (mΩ) max.	Irms (A) typ.	Isat (A) typ.
TMDS1030-R36M	0.36	20	1.6	23.0	40.0
TMDS1030-R47M	0.47	20	2.5	20.0	33.0
TMDS1030-R56M	0.56	20	3.0	16.0	24.0
TMDS1030-1R0M	1.00	20	6.0	15.0	20.0
TMDS1030-1R5M	1.50	20	7.5	13.0	20.0
TMDS1030-2R2M	2.20	20	9.0	12.0	16.0
TMDS1030-3R3M	3.30	20	16.0	9.0	14.0
TMDS1030-4R7M	4.70	20	22.5	7.0	13.0
TMDS1030-5R6M	5.60	20	32.5	7.0	12.0
TMDS1030-6R8M	6.80	20	35.0	6.5	9.5
TMDS1030-8R2M	8.20	20	48.0	6.0	8.5
TMDS1030-100M	10.00	20	55.0	5.0	8.0
TMDS1040-R22M	0.22	20	1.0	30.0	60.0
TMDS1040-R36M	0.36	20	1.4	30.0	50.0
TMDS1040-R39M	0.39	20	1.6	28.0	45.0
TMDS1040-R47M	0.47	20	1.8	26.0	38.0
TMDS1040-R56M	0.56	20	1.8	25.0	33.0
TMDS1040-R68M	0.68	20	3.0	23.0	32.0
TMDS1040-1R0M	1.00	20	4.1	18.0	28.0
TMDS1040-1R5M	1.50	20	6.0	16.0	21.0
TMDS1040-2R2M	2.20	20	9.0	12.0	18.0
TMDS1040-3R3M	3.30	20	13.5	10.0	16.0
TMDS1040-4R7M	4.70	20	18.0	8.0	14.0
TMDS1040-6R8M	6.80	20	28.0	7.0	12.0
TMDS1040-100M	10.00	20	36.5	5.0	9.0
TMDS1040-150M	15.00	20	55.0	4.0	7.0
TMDS1040-220M	22.00	20	60.0	3.5	5.0
TMDS1040-330M	33.00	20	145.0	3.0	4.0
TMDS1040-470M	47.00	20	145.0	3.0	3.0
TMDS1050-R82M	0.82	20	2.5	16.0	32.0
TMDS1050-1R0M	1.00	20	4.0	15.0	30.0
TMDS1050-1R8M	1.80	20	6.0	15.0	27.5
TMDS1050-2R2M	2.20	20	8.0	14.0	27.0
TMDS1050-3R3M	3.30	20	11.0	10.0	19.0
TMDS1050-4R7M	4.70	20	17.0	9.0	14.0
TMDS1050-6R8M	6.80	20	22.0	8.0	10.0
TMDS1050-100M	10.0	20	35.0	6.0	10.0
TMDS1050-150M	15.0	20	45.0	5.0	8.0
TMDS1050-220M	22.0	20	60.0	4.0	6.0
TMDS1050-330M	33.0	20	102.0	3.5	5.0
TMDS1050-470M	47.0	20	132.0	3.0	4.0
TMDS1080-6R8M	6.8	20	13.2	8.0	12.0
TMDS1080-100M	10.0	20	16.8	8.0	10.0
TMDS1080-150M	15.0	20	22.0	6.0	9.0
TMDS1080-220M	22.0	20	37.0	5.0	9.0
TMDS1080-330M	33.0	20	78.0	4.0	5.0
TMDS1080-470M	47.0	20	90.0	3.5	5.0

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* Irms DC current (A) that will cause an approximate ΔT of 40°C

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

* Tolerance: M= ±20%, N= ±30%



TMDS Series (Rev. 1.0)

Electrical Characteristics

Part Number	Inductance (μH)	Tolerance ($\pm\%$)	DCR ($\text{m}\Omega$) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS1235-R22M	0.22	20	1.3	25.0	65.0
TMDS1235-R47M	0.47	20	1.7	18.0	35.0
TMDS1235-R68M	0.68	20	2.5	20.0	49.0
TMDS1235-1R0M	1.00	20	3.5	15.0	26.0
TMDS1235-1R5M	1.50	20	5.0	15.0	24.0
TMDS1235-2R2M	2.20	20	8.0	14.0	20.0
TMDS1235-3R3M	3.30	20	12.0	12.0	16.0
TMDS1235-4R7M	4.70	20	15.0	10.0	14.0
TMDS1240-1R0M	1.00	20	3.5	19.0	38.0
TMDS1240-1R5M	1.50	20	4.5	16.0	30.0
TMDS1240-1R8M	1.80	20	8.3	16.0	26.0
TMDS1240-2R2M	2.20	20	9.5	15.0	22.0
TMDS1240-3R3M	3.30	20	11.0	14.0	20.0
TMDS1240-4R7M	4.70	20	14.0	9.0	15.0
TMDS1240-5R6M	5.60	20	18.0	8.0	14.0
TMDS1240-6R8M	6.80	20	24.0	7.0	12.0
TMDS1250-R33M	0.33	20	1.1	32.0	60.0
TMDS1250-R47M	0.47	20	1.5	25.0	48.0
TMDS1250-R56M	0.56	20	1.7	23.0	46.0
TMDS1250-R68M	0.68	20	1.7	20.0	40.0
TMDS1250-1R0M	1.00	20	3.5	18.0	35.0
TMDS1250-1R2M	1.20	20	4.0	18.0	34.0
TMDS1250-1R5M	1.50	20	5.0	18.0	33.0
TMDS1250-1R8M	1.80	20	6.0	17.0	30.0
TMDS1250-2R2M	2.20	20	7.2	16.0	25.0
TMDS1250-3R3M	3.30	20	13.0	15.0	23.0
TMDS1250-4R7M	4.70	20	15.0	12.0	21.0
TMDS1250-5R6M	5.60	20	17.0	12.0	20.0
TMDS1250-6R8M	6.80	20	19.0	11.0	18.0
TMDS1250-8R2M	8.20	20	22.5	10.0	17.0
TMDS1250-100M	10.00	20	25.5	6.0	13.0
TMDS1260-R33M	0.33	20	1.0	46.0	55.0
TMDS1260-R68M	0.68	20	2.5	35.0	45.0
TMDS1260-1R0M	1.00	20	4.0	21.0	40.0
TMDS1260-2R2M	2.20	20	7.2	20.0	32.0
TMDS1260-3R3M	3.30	20	8.2	15.0	30.0
TMDS1260-4R7M	4.70	20	15.0	12.0	25.0
TMDS1260-6R8M	6.80	20	23.0	11.0	20.0
TMDS1260-100M	10.00	20	25.0	10.0	12.5
TMDS1260-220M	22.00	20	50.0	5.0	7.5

* Test Condition: @100KHz/ 1.0V, 25°C Ambient

* I_{rms} DC current (A) that will cause an approximate ΔT of 40°C* I_{sat} DC current (A) that will cause L to drop approximately 30%* Tolerance: M= $\pm 20\%$, N= $\pm 30\%$ 

TMDS Series (Rev. 1.0)

Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance (\pm %)	DCR ($m\Omega$) max.	I _{rms} (A) typ.	I _{sat} (A) typ.
TMDS1265-R47M	0.47	20	1.2	41.0	63.0
TMDS1265-R50M	0.50	20	1.3	40.0	60.0
TMDS1265-R56M	0.56	20	1.6	30.0	60.0
TMDS1265-R68M	0.68	20	1.8	28.0	54.0
TMDS1265-R82M	0.82	20	1.9	25.0	50.0
TMDS1265-1R0M	1.00	20	2.5	25.0	49.0
TMDS1265-1R5M	1.50	20	3.0	22.0	45.0
TMDS1265-1R8M	1.80	20	3.6	20.0	41.0
TMDS1265-2R2M	2.20	20	4.2	18.0	40.0
TMDS1265-3R3M	3.30	20	6.8	16.0	28.0
TMDS1265-4R7M	4.70	20	8.4	14.0	22.5
TMDS1265-5R6M	5.60	20	15.0	12.0	20.0
TMDS1265-6R8M	6.80	20	11.5	11.5	18.0
TMDS1265-8R2M	8.20	20	15.5	10.5	16.0
TMDS1265-100M	10.00	20	25.0	9.0	15.5
TMDS1265-150M	15.00	20	38.0	6.0	9.0
TMDS1265-220M	22.00	20	48.0	5.0	7.5
TMDS1265-330M	33.00	20	66.0	4.5	6.5
TMDS1265-470M	47.00	20	90.0	3.5	5.5
TMDS1265-101M	100.00	20	200.0	2.5	3.5
TMDS1770-R22M	0.22	20	0.7	60.0	100.0
TMDS1770-R33M	0.33	20	0.8	55.0	90.0
TMDS1770-R47M	0.47	20	1.0	50.0	80.0
TMDS1770-R56M	0.56	20	1.2	46.0	70.0
TMDS1770-R82M	0.82	20	1.3	42.0	60.0
TMDS1770-1R0M	1.00	20	1.7	38.0	50.0
TMDS1770-1R5M	1.50	20	2.2	35.0	45.0
TMDS1770-2R2M	2.20	20	2.6	25.0	34.0
TMDS1770-3R3M	3.30	20	3.5	17.0	24.0
TMDS1770-4R7M	4.70	20	5.0	15.0	21.0
TMDS1770-6R8M	6.80	20	7.0	15.0	18.0
TMDS1770-8R2M	8.20	20	9.0	12.0	18.0
TMDS1770-100M	10.00	20	10.0	11.0	17.0
TMDS1770-150M	15.00	20	15.0	9.0	12.0
TMDS1770-220M	22.00	20	25.0	7.0	9.5
TMDS1770-330M	33.00	20	35.0	6.5	9.0
TMDS1770-470M	47.00	20	40.0	6.0	7.5
TMDS1770-680M	68.00	20	80.0	4.0	5.0
TMDS1770-820M	82.00	20	105.0	4.0	4.5
TMDS1770-101M	100.00	20	120.0	3.0	4.0

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