

Assembled SMD Power Inductors-TRVR Series

Assembled SMD Power Inductors-TRVR Series, a new coupled structure inductor designed for multi-phase power delivery in CPU/GPU cores, offering improved transient response and more stable output voltage.



Features

- Dual coil structure.
- Low inductance, low DCR and high current.
- 100 Vdc insulation between windings.
- Ferrite core for better efficiency performance.
- RoHS, Halogen free and REACH compliance.

Applications

- Latest VRM solution for CPU, GPU, GPGPU, server, workstation, data center, HPC, AI, IPC, desktop, etc

Operating Temp

- -40°C~+125°C

Product Identification

1	2	3	4	5	6	7
TRVR	090610	UM	XXX	X	T	X

1	Product Symbol
TRVR	SMD Power Inductor

2	External Dimensions(mm)
080613	8.3*5.8*12.7
090610	9.3*6.1*9.7
090611	9.6*6.4*11.4
090613	9.6*6.4*13.15
100506	10.0*4.8*5.7
100612	10.0*6.0*12.0
110407	10.8*4.0*7.3
110705	10.8*6.6*5.0
120512	11.7*4.8*11.8
120610	11.7*5.7*9.7
120611	12.0*6.0*11.1
120612	12.0*6.0*12.1
130804	12.8*7.8*3.5

3	Internal Code
UM	Mn-Zn (Vertical)

4	Nominal Inductance
R08	80nH
R12	120nH

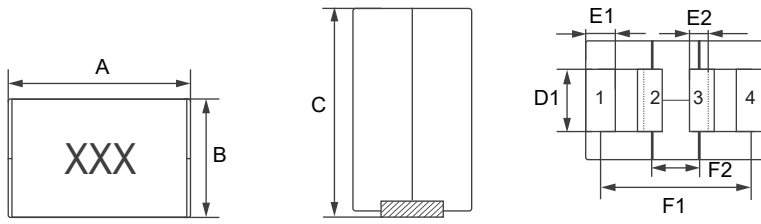
5	Inductance Tolerance
K	±10%
L	±15%
M	±20%
N	±30%

6	Packing
T	Tape Carrier Package

7	Internal Code
A	Standard
B	Special

Shape and Dimensions

Fig.1



Recommended pattern

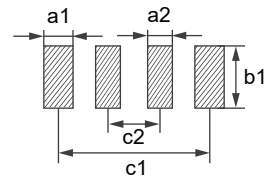
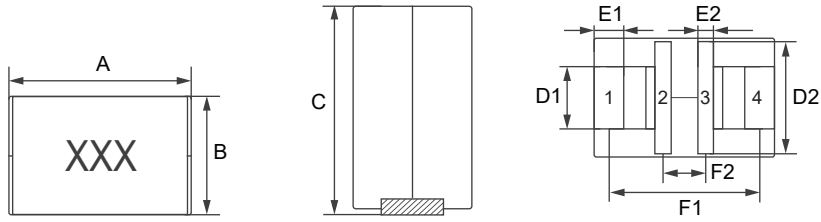


Fig.2



Recommended pattern

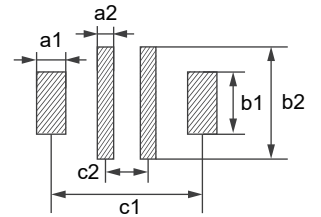
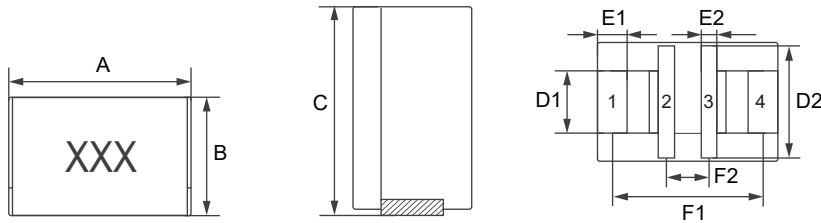


Fig.3



Recommended pattern

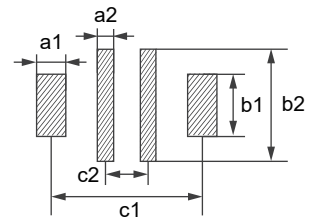
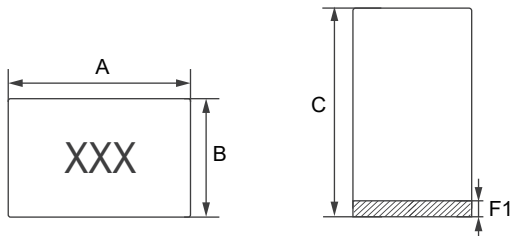


Fig.4



Recommended pattern

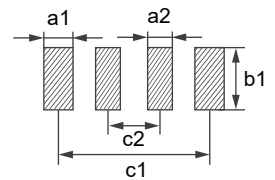
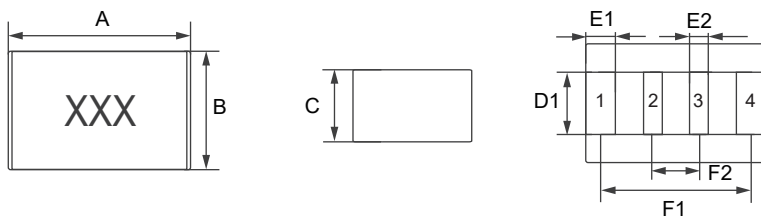
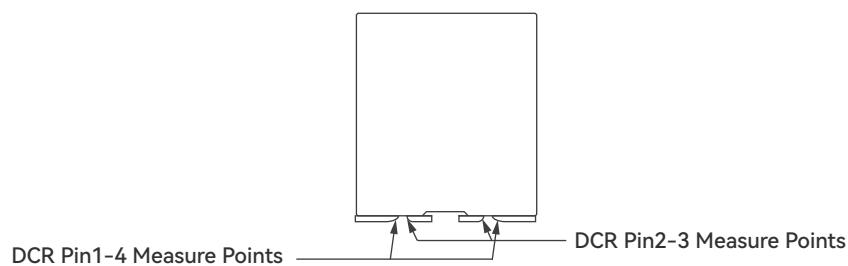
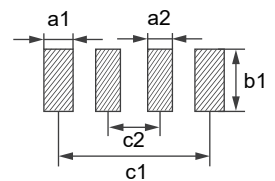


Fig.5



Recommended pattern



Dimensions

Unit:mm

Series	A	B	C	D1	D2	E1	E2	F1	Shape
TRVR080613UM	8.3±0.2	5.8±0.2	12.7±0.3	/	/	1.1±0.2	1.1±0.2	0.8±0.3	Fig.4
TRVR090610UM	9.3±0.3	6.1±0.3	9.7±0.3	3.2±0.2	/	1.5±0.3	1.0±0.3	7.75±0.5	Fig.1
TRVR090611UM	9.6 Max.	6.4 Max.	11.4 Max.	3.05 Ref.	/	1.5 Ref.	0.83 Ref.	7.7 Ref.	Fig.1
TRVR090613UM	9.6 Max.	6.4 Max.	13.15 Max.	3.55	5.4	1.2	0.95	8.04	Fig.2
TRVR100506UM	10.0±0.2	4.8±0.4 4.6±0.4	5.7±0.3	1.5±0.3	/	1.7±0.3	1.2±0.3	9.8±0.3	Fig.1
TRVR100612UM	10.0 Max.	6.0 Max.	12.0 Max. 12.3 Max.	3.05 3.4±0.2	/	1.3 1.2±0.2	0.9 0.73±0.2	8.32 9.0±0.2	Fig.1 Fig.3
TRVR110407UM	10.8±0.2	4.0±0.2	7.3±0.2	/	/	1.5±0.2	1.5±0.2	/	Fig.4
TRVR110705UM	10.8±0.5	6.6±0.3	5.0 Max.	2.8	/	1.8	1.2	/	Fig.5
TRVR120512UM	11.7±0.3	4.8±0.3 4.7±0.3	11.8±0.2	2.0±0.2	/	1.55±0.3	1.25±0.3	10.14±0.3	Fig.1
TRVR120610UM	11.7±0.3	5.7±0.3	9.7±0.3	2.8±0.3	/	1.56±0.3	1.2±0.3	/	Fig.1
TRHP120611UM	12.0 Max.	6.0 Max.	11.1 Max.	2.5±0.3	/	3.25±0.3	1.7±0.3	/	Fig.1
TRVR120612UM	12.0 Max.	6.0 Max.	12.1 Max.	2.55	/	1.6	1.27	10.07	Fig.1
TRVR130804UM	12.8±0.5	7.8±0.3	3.5 Max.	3.2	/	2.7	1.0	/	Fig.5

Dimensions

Series	F2	a1	a2	b1	b2	c1	c2	c3	Shape
TRVR080613UM	1.3±0.2	1.5 Ref.	/	6.3 Ref.	/	2.6 Ref.	/	1.1	Fig.4
TRVR090610UM	2.4±0.5	2.15±0.3	1.45±0.3	3.6±0.3	/	7.9±0.5	2.45±0.3	/	Fig.1
TRVR090611UM	2.17 Ref.	2.2 Ref.	1.33 Ref.	3.55 Ref.	/	7.9 Ref.	2.17 Ref.	1.1	Fig.1
TRVR090613UM	2.19	2.25	1.3	4.05	6.3	7.95	2.4	/	Fig.2
TRVR100506UM	1.5±0.3	2.3 Typ.	1.8 Typ.	1.9 Typ.	/	8.1 Typ.	2.7 Typ.	/	Fig.1
TRVR100612UM	2.3 2.45±0.2	1.83 2.36 Ref.	1.4 0.8 Ref.	3.55 3.4 Ref.	/ 6.0 Ref.	8.32 9.55Ref.	2.3 2.45 Ref.	/	Fig.1 Fig.3
TRVR110407UM	/	1.8	/	4.4 Ref.	/	9.6 Ref.	/	/	Fig.4
TRVR110705UM	/	2.3	1.7	3.5	/	8.9	3.4	0.75	Fig.5
TRVR120512UM	2.55±0.3	2.15 Typ.	1.6 Typ.	2.4 Typ.	/	10.1 Typ.	2.4 Typ.	/	Fig.1
TRVR120610UM	2.8±0.3	2.16 Typ.	1.8 Typ.	3.2 Typ.	/	10.0 Typ.	2.8 Typ.	1.62 Typ.	Fig.1
TRHP120611UM	3.3±0.3	1.8 Typ.	1.65 Typ.	2.95 Typ.	/	10.1 Typ.	2.65 Typ.	/	Fig.1
TRVR120612UM	2.62	2.13	1.77	3.05	/	10.1	2.62	/	Fig.1
TRVR130804UM	/	3.125	1.0	3.4	/	10.2	4.1	1.15	Fig.5

Remarks:

Series	Shape	Inductance
TRVR100612UM	Fig.1	TRVR100612UMR07KTA/TRVR100612UMR08KTA/TRVR100612UMR10KTA/TRVR100612UMR12KTA/TRVR100612UMR15KTA/TRVR100612UMR17KTA
	Fig.3	TRVR100612UMR10LTB/TRVR100612UMR12LTB/TRVR100612UMR15LTB/TRVR100612UMR20LTB

Specification

TRVR080613UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR080613UMR10MTA	100±20%	130 Typ.	/	78 Typ.	/	0.12±20%	0.5±20%	@100KHz,1V

TRVR090610UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR090610UMR10LTA	100±15%	92.00	82.00	75.00	39.00	0.125±10%	0.45±10%	@500KHz 0.25V
TRVR090610UMR12LTA	120±15%	75.00	66.00	75.00	39.00	0.125±10%	0.45±10%	@500KHz 0.25V
TRVR090610UMR15LTA	150±15%	60.00	52.00	75.00	39.00	0.125±10%	0.45±10%	@500KHz 0.25V

TRVR090611UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR090611UMR07LTA	70±10%	149.00	129.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR08LTA	80±10%	131.00	113.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR10LTA	100±10%	105.00	91.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR11LTA	110±10%	95.00	82.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR12LTA	120±10%	87.00	75.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR15LTA	150±10%	70.00	60.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V
TRVR090611UMR17LTA	170±10%	61.00	53.00	75.00	33.00	0.125±10%	0.6±10%	@100KHz 0.1V

TRVR090613UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR090613UMR10KTB	105±10%	108.00	95.00	72.00	/	0.14±10%	0.53±10%	@100KHz. 0.1V
TRVR090613UMR12KTB	120±10%	94.00	83.00	72.00	/	0.14±10%	0.53±10%	@100KHz. 0.1V
TRVR090613UMR15KTB	150±10%	75.00	66.00	72.00	/	0.14±10%	0.53±10%	@100KHz. 0.1V
TRVR090613UMR17KTB	170±10%	66.00	58.00	72.00	/	0.14±10%	0.53±10%	@100KHz. 0.1V

TRVR100506UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR100506UMR05□TA	50	130.00	100.00	44.00	25.00	0.32Max.	0.96Max.	@100KHz, 1V
TRVR100506UMR10□TA	100	70.00	58.00	44.00	25.00	0.32Max.	0.96Max.	@100KHz, 1V
TRVR100506UMR12□TA	120	57.00	48.00	44.00	25.00	0.32Max.	0.96Max.	@100KHz, 1V
TRVR100506UMR15□TA	150	45.00	38.00	44.00	25.00	0.32Max.	0.96Max.	@100KHz, 1V

TRVR100612UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR100612UMR07KTA	70±10%	157.00	135.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR08KTA	80±10%	137.00	118.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR10KTA	100±10%	115.00	102.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR12KTA	120±10%	95.00	85.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR15KTA	150±10%	75.00	68.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR17KTA	170±10%	64.00	55.00	75.00	35.00	0.125±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR10LTB	100±15%	125.00	/	78.00	45.00	0.12±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR12LTB	120±15%	102.00	/	78.00	45.00	0.12±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR15LTB	150±15%	75.00	/	78.00	45.00	0.12±10%	0.37±10%	@100KHz, 0.1V
TRVR100612UMR20LTB	200±15%	60.00	/	78.00	45.00	0.12±10%	0.37±10%	@100KHz, 0.1V

TRVR110407UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR110407UMR08NTA	80±30%	120.00	105.00	69.00	37.00	0.13	0.45	@100KHz, 1V

TRVR110705UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR110705UMR08MTA	80±20%	100.00	100.00	55.00	37.00	0.21±10%	0.6±10%	@100KHz, 1V
TRVR110705UMR10MTA	100±20%	80.00	80.00	55.00	37.00	0.21±10%	0.6±10%	@100KHz, 1V

TRVR120512UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR120512UMR07□TA	70	145.00	126.00	75.00	39.00	0.125±10%	0.45±10%	@100KHz, 1V
TRVR120512UMR10□TA	100	102.00	90.00	75.00	39.00	0.125±10%	0.45±10%	@100KHz, 1V
TRVR120512UMR12□TA	120	85.00	74.00	75.00	39.00	0.125±10%	0.45±10%	@100KHz, 1V
TRVR120512UMR15□TA	150	68.00	59.00	75.00	39.00	0.125±10%	0.45±10%	@100KHz, 1V
TRVR120512UMR17□TA	170	57.00	50.00	75.00	39.00	0.125±10%	0.45±10%	@100KHz, 1V

TRVR120610UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR120610UMR07LTA	70±15%	155.00	140.00	88.00	39.00	0.115Max.	0.74Max.	@600KHz, 1V
TRVR120610UMR10LTA	100±15%	110.00	100.00	88.00	39.00	0.115Max.	0.74Max.	@600KHz, 1V
TRVR120610UMR12LTA	120±15%	92.00	82.00	88.00	39.00	0.115Max.	0.74Max.	@600KHz, 1V
TRVR120610UMR15LTA	150±15%	70.00	65.00	88.00	39.00	0.115Max.	0.74Max.	@600KHz, 1V
TRVR120610UMR18LTA	180±15%	60.00	55.00	88.00	39.00	0.115Max.	0.74Max.	@600KHz, 1V

TRVR120611UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR120611UMR07LTA	70±15%	170.00	145.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR08KTA	80±15%	149.00	127.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR10LTA	100±15%	119.00	102.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR11LTA	110±15%	108.00	92.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR12LTA	120±15%	102.00	85.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR15LTA	150±15%	84.00	68.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR17LTA	170±15%	70.00	60.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR20LTA	200±15%	59.00	50.00	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V
TRVR120611UMR47LTA	470±15%	18.00	/	75.00	45.00	0.125±10%	0.37±10%	@100KHz,0.1V

TRVR120612UM Series

Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR120612UMR07LTA	70±15%	178.00	145.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V
TRVR120612UMR08LTA	80±15%	163.00	140.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V
TRVR120612UMR10LTA	100±15%	125.00	100.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V
TRVR120612UMR12LTA	120±15%	106.00	88.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V
TRVR120612UMR15LTA	150±15%	82.00	70.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V
TRVR120612UMR17LTA	170±15%	73.00	60.00	75.00	40.00	0.125±10%	0.37±10%	@100KHz, 1V

TRVR130804UM Series

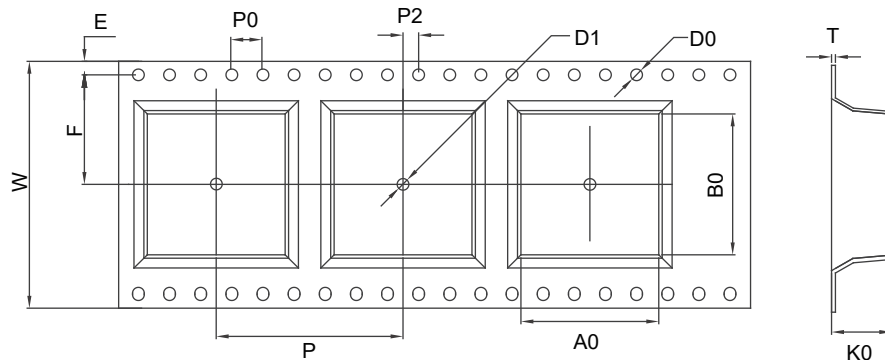
Part Number	Inductance	Saturation Current		Heat Rating Current		DC Resistance		L Test Condition
	L (nH)	Isat(A)		Irms(A)		RDC(mΩ)		/
	Pin1-4,Pin2-3	25°C	100°C	Pin1-4	Pin2-3	Pin1-4	Pin2-3	/
TRVR130804UMR07MTA	70±20%	70.00	70.00	55.00	40.00	0.37±10%	0.18±10%	@100KHz, 1V

Notes

- Open circuit inductance (OCL) test parameters:100 kHz, 0.1 V,0.0 Adc,+25°C.
- Irms:DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents.PCB layout, trace thickness and width, ai-flow, and proximity of other heat generating components will affect thetemperature rise It is recommended that the temperature of the part not exceed+125°C under worst case operatingconditions verified in the end application.
- Isat: Peak current at which inductance drops approximately 20%, tested at +25°C and +100°C respectively.

Packaging Information

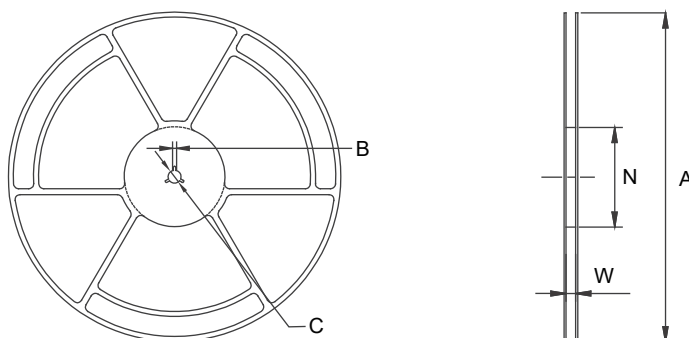
Tape Dimensions



Dimensions

Series	Tape dimensions (mm)											
	W	P	P0	P2	T	D0	D1	A0	B0	K0	E	F
TRVR080613UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.3	8.8	13.3	1.75±0.1	/
TRVR090610UM	/	/	/	/	/	/	/	/	/	/	/	/
TRVR090611UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.55	9.75	11.2	1.75±0.1	/
TRVR090613UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.55±0.1	9.75±0.1	13.35±0.1	1.75±0.1	11.5±0.1
TRVR100506UM	/	/	/	/	/	/	/	/	/	/	/	/
TRVR100612UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.15±0.1	10.15±0.1	12.2±0.1	1.75±0.1	11.5±0.1
TRVR100612UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.2	10.2	12.5	1.75±0.1	/
TRVR110407UM	24±0.3	12	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	4.5	11.4	8	1.75±0.1	/
TRVR110705UM	/	/	/	/	/	/	/	/	/	/	/	/
TRVR120512UM	/	/	/	/	/	/	/	/	/	/	/	/
TRVR120610UM	/	/	/	/	/	/	/	/	/	/	/	/
TRHP120611UM	32±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	2	6.15±0.1	12.15±0.1	11.2±0.1	1.75±0.1	14.2±0.1
TRVR120612UM	24±0.3	16±0.1	4.0±0.1	2.0±0.1	0.5±0.05	1.5±0.1	1.5	6.1±0.1	12.2±0.1	12.2±0.1	1.75±0.1	11.5±0.1

Reel Dimensions



Dimensions

Series	Reel Dimensions (mm)					Quantity
	A	W	N	B	C	Reel
TRVR080613UM	330	24.4	100	/	13	TBD
TRVR090610UM	/	/	/	/	/	/
TRVR090611UM	330	24.4	100	/	13	350
TRVR090613UM	/	/	/	/	/	/
TRVR100506UM	/	/	/	/	/	/
TRVR100612UM	/	/	/	/	/	/
TRVR100612UM	330	24.4	100	/	13	350
TRVR110407UM	330	24.4	100	/	13	500
TRVR110705UM	/	/	/	/	/	/
TRVR120512UM	/	/	/	/	/	/
TRVR120610UM	/	/	/	/	/	/
TRHP120611UM	/	/	/	/	/	/
TRVR120612UM	/	/	/	/	/	/