VLM10555T-1R8M8R8-2H Datasheet

https://www.DiGi-Electronics.com

DiGi Electronics Part Number	VLM10555T-1R8M8R8-2H-DG
Manufacturer	TDK Corporation
Manufacturer Product Number	VLM10555T-1R8M8R8-2H
Description	FIXED IND 1.8UH 8.8A 6.44MOHM SM
Detailed Description	1.8 µH Shielded Drum Core, Wirewound Inductor 8.8 A 6.44mOhm Max Nonstandard

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RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
VLM10555T-1R8M8R8-2H	TDK Corporation
Series:	Product Status:
VLM	Active
Type:	Material - Core:
Drum Core, Wirewound	Ferrite
Inductance:	Tolerance:
1.8 µH	±20%
Current Rating (Amps):	Current - Saturation (Isat):
8.8 A	18A
Shielding:	DC Resistance (DCR):
Shielded	6.44mOhm Max
Q @ Freq:	Frequency - Self Resonant:
-	-
Ratings:	Operating Temperature:
AEC-Q200	-40°C ~ 125°C
Inductance Frequency - Test:	Mounting Type:
100 kHz	Surface Mount
Package / Case:	Supplier Device Package:
Nonstandard	-
Size / Dimension:	Height - Seated (Max):
0.417" L x 0.413" W (10.60mm x 10.50mm)	0.220" (5.60mm)

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8504.50.4000	

VLM10555T-1R8M8R8-2H TDK Corporation FIXED IND 1.8UH 8.8A 6.44MOHM SM

TDK

November 2013

Inductors for Power Circuits

Wound Ferrite

VLM series (For automobiles)

VLM10555-2H
VLM10555-3H
VLM13580-D1

REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

⚠ REMINDERS

- The storage period is less than 6 months. Be sure to follow the storage conditions (Temperature: 5 to 30°C, Humidity: 10 to 75% RH or less).
  If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- Before soldering, be sure to preheat components.
  The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.
  If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Carefully lay out the coil for the circuit board design of the non-magnetic shield type.
  A malfunction may occur due to magnetic interference.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- Do not expose the products to magnets or magnetic fields.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.
  The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.
  If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

(1) Aerospace/Aviation equipment
(2) Transportation equipment (electric trains, ships, etc.)
(3) Medical equipment
(4) Power-generation control equipment
(5) Atomic energy-related equipment
(6) Seabed equipment
(7) Transportation control equipment
(8) Public information-processing equipment
(9) Military equipment
(10) Electric heating apparatus, burning equipment
(11) Disaster prevention/crime prevention equipment
(12) Safety equipment
(13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

Inductors for Power Circuits

Wound Ferrite

Product compatible with RoHS directive
Compatible with lead-free solders
AEC-Q200

Overview of the VLM Series

FEATURES

- Low Rdc design using a rectangular wire.
- Design with low core loss, large current capability design Mn-Zn core, and compatible with low loss and high current.
- Compatible with vehicle-related equipment.

APPLICATION

- Equipment used for automobiles (ECM, HID, EPS, etc.)
- Vehicle accessory equipment (Vehicle AV equipment, car navigation, automobile air conditioners, etc.)

PART NUMBER CONSTRUCTION

VLM	10555	T	-	1R8	M	8R8	-	2H
Series name	L×W×H Dimensions (mm)	Packaging style		Inductance (µH)	Inductance tolerance	Rated current (A)		Internal code

L×W×H Dimensions (mm)	
10555	10.5×10.6×5.4
13580	13.5×12.2×7.8

Packaging style	
T	Taping

Inductance (µH)	
1R8	1.8
100	10

Inductance tolerance	
M	±20%

Rated current (A)	
8R8	8.8
100	10

OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

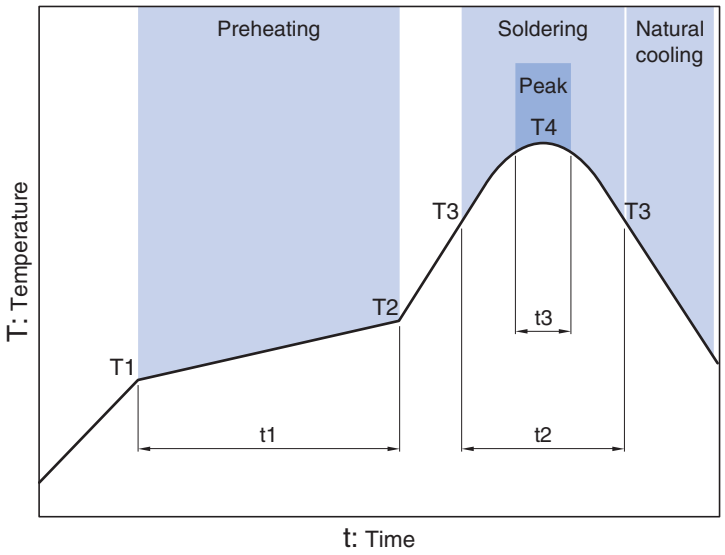
Type	Temperature range		Package quantity	Individual weight
	Operating temperature*	Storage temperature**		
	(°C)	(°C)	(pieces/reel)	(g)
VLM10555-2H	–40 to +125	–40 to +125	500	1.7
VLM10555-3H	–40 to +125	–40 to +125	500	1.7
VLM13580-D1	–40 to +150	–40 to +150	400	3.9

* Operating temperature range includes self-temperature rise.
** The Storage temperature range is for after the circuit board is mounted.

○ RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. http://www.tdk.co.jp/rohs/

Overview of the VLM Series

RECOMMENDED REFLOW PROFILE

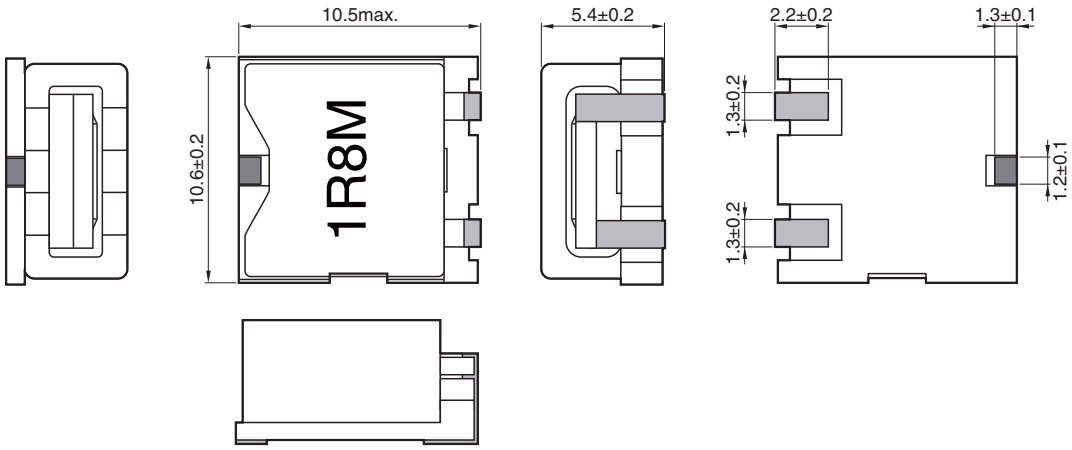


Preheating			Soldering		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	30s	250°C	5s

VLM series

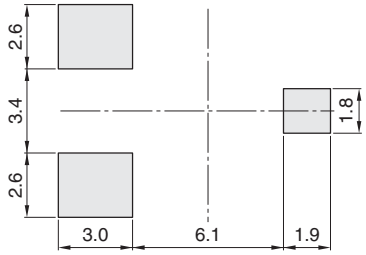
VLM10555-2H Type

SHAPE & DIMENSIONS



Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

VLM series VLM10555-2H Type

■ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

L		Measuring frequency	DC resistance		Rated current(A)*		Part No.
					max.	typ.	
(μH)	Tolerance	(kHz)	(mΩ)	(%)	Idc1	Idc2	
1.8	±20%	100	5.6	±15	18	8.8	VLM10555T-1R8M8R8-2H
2.5	±20%	100	6.7	±15	15	8	VLM10555T-2R5M8R0-2H
3.3	±20%	100	8.3	±15	12	7.2	VLM10555T-3R3M7R2-2H
4.3	±20%	100	8.3	±15	9	7.2	VLM10555T-4R3M7R2-2H

* Rated current: smaller value of either Idc1 or Idc2.
Idc1: When based on the inductance change rate (25% below the initial value)
Idc2: When based on the temperature increase (Temperature increase of 40°C by self heating)

○ Measurement equipment

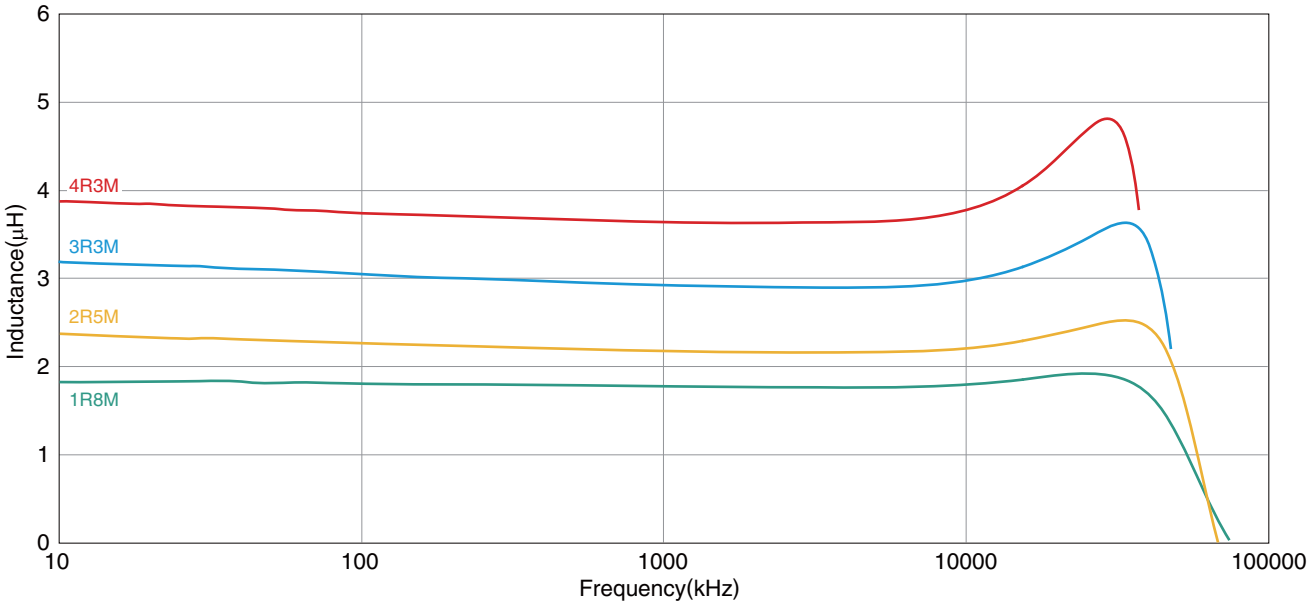
Measurement item	Product No.	Manufacturer
L	4194A	Agilent Technologies
DC resistance	3220	HIOKI
Rated current Idc1	3260B+3265B	Wayne Kerr Electronics

＊ Equivalent measurement equipment may be used.

VLM series VLM10555-2H Type

■ELECTRICAL CHARACTERISTICS

□L FREQUENCY CHARACTERISTICS GRAPH



○ Measurement equipment

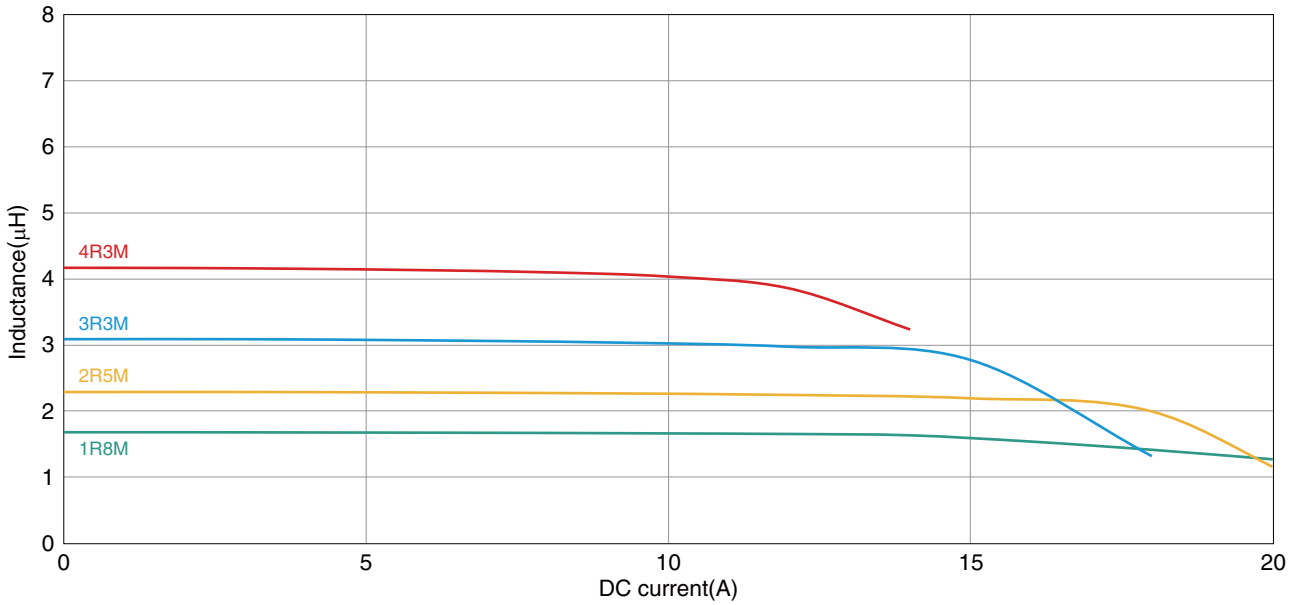
Product No.	Manufacturer
4294A	Agilent Technologies

＊ Equivalent measurement equipment may be used.

VLM series VLM10555-2H Type

■ELECTRICAL CHARACTERISTICS

□INDUCTANCE VS. DC BIAS CHARACTERISTICS GRAPH



○ Measurement equipment

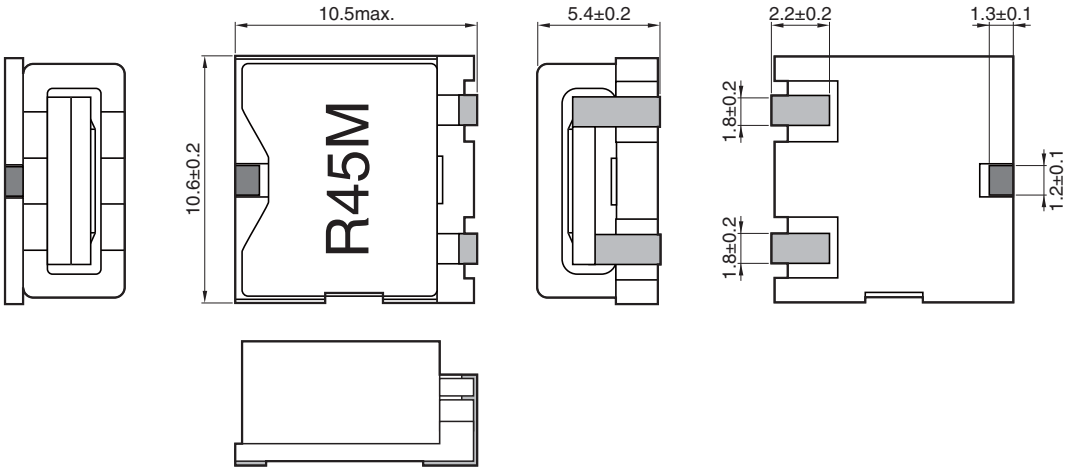
Product No.	Manufacturer
3260B+3265B	Wayne Kerr Electronics

＊ Equivalent measurement equipment may be used.

VLM series

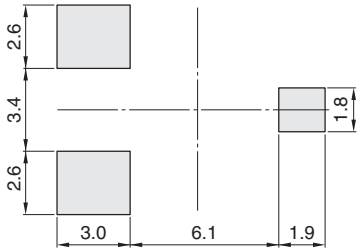
VLM10555-3H Type

SHAPE & DIMENSIONS



Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

VLM series VLM10555-3H Type

■ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

L		Measuring frequency	DC resistance (mΩ)		Rated current* (A)		Part No.
					max.	typ.	
(nH)	Tolerance	(kHz)	max.	typ.	Idc1	Idc2	
330	±20%	100	1.2	0.95	34	18	VLM10555T-R33M180-3H
450	±20%	100	2.6	2.2	40	11	VLM10555T-R45M110-3H
560	±20%	100	2.5	2.1	34	12	VLM10555T-R56M120-3H
700	±20%	100	2.5	2.1	26	12	VLM10555T-R70M120-3H
1200	±20%	100	3.2	2.7	18	10	VLM10555T-1R2M100-3H

* Rated current: smaller value of either Idc1 or Idc2.
Idc1: When based on the inductance change rate (25% below the initial value)
Idc2: When based on the temperature increase (Temperature increase of 40°C by self heating)

○ Measurement equipment

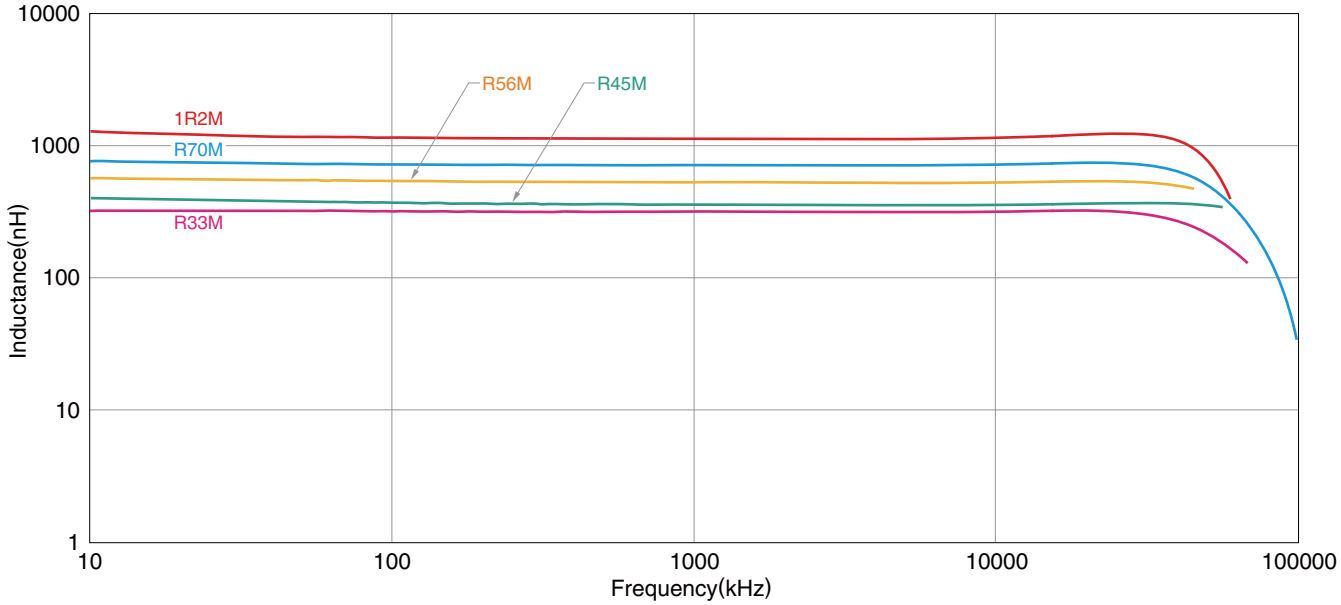
Measurement item	Product No.	Manufacturer
L	4194A	Agilent Technologies
DC resistance	3220	HIOKI
Rated current Idc1	3260B+3265B	Wayne Kerr Electronics

* Equivalent measurement equipment may be used.

VLM series VLM10555-3H Type

ELECTRICAL CHARACTERISTICS

L FREQUENCY CHARACTERISTICS GRAPH



○ Measurement equipment

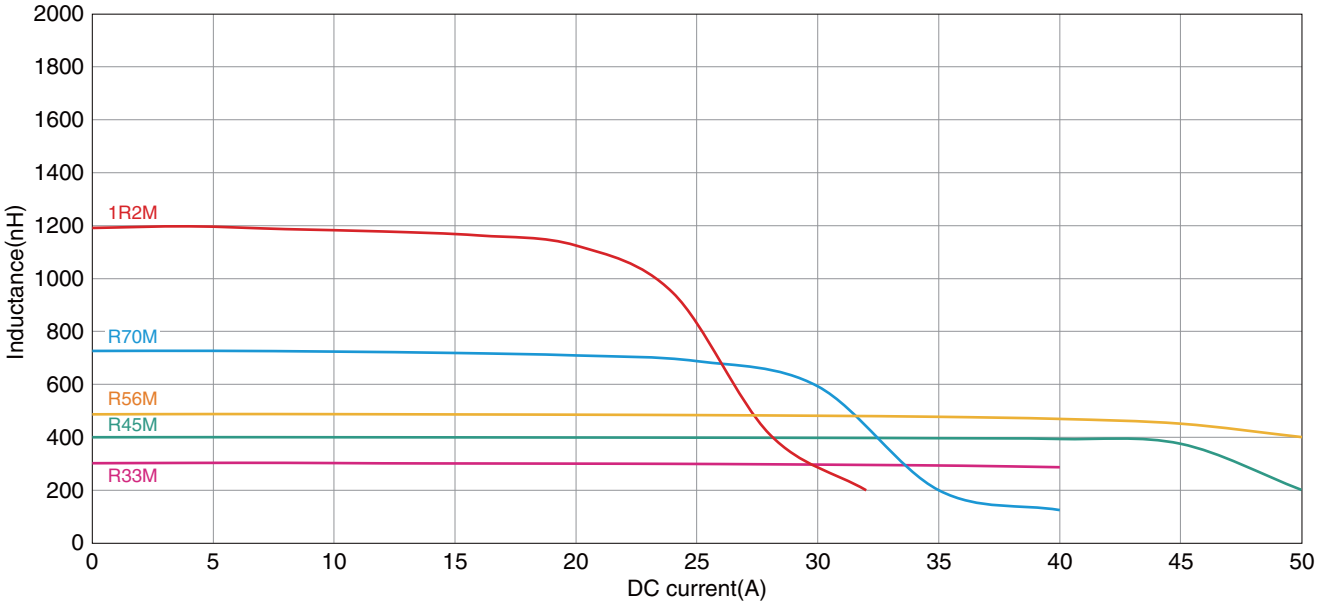
Product No.	Manufacturer
4294A	Agilent Technologies

＊ Equivalent measurement equipment may be used.

VLM series VLM10555-3H Type

■ELECTRICAL CHARACTERISTICS

□INDUCTANCE VS. DC BIAS CHARACTERISTICS GRAPH



○ Measurement equipment

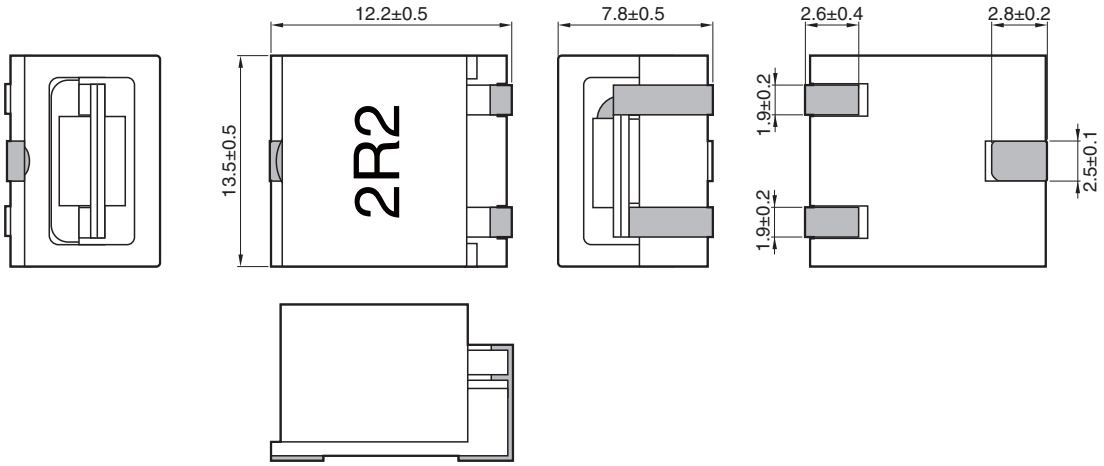
Product No.	Manufacturer
3260B+3265B	Wayne Kerr Electronics

＊ Equivalent measurement equipment may be used.

VLM series

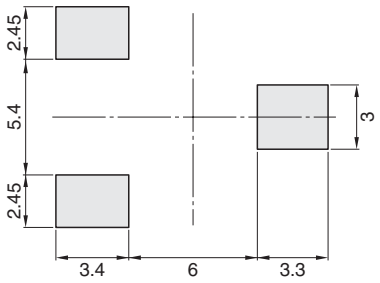
VLM13580-D1 Type

SHAPE & DIMENSIONS



Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

VLM series VLM13580-D1 Type

■ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

L		Measuring frequency (kHz)	DC resistance (mΩ)		Rated current(A)*		Part No.
					max.	typ.	
(μH)	Tolerance(%)		max.	typ.	Idc1	Idc2 Self heating 20°C	
0.82	±20	100	2	1.7	36	12.6	VLM13580T-R82M-D1
1.5	±20	100	2.5	2.1	26	11.3	VLM13580T-1R5M-D1
2.2	±20	100	3.9	3.3	20	10.5	VLM13580T-2R2M-D1
3.3	±20	100	4.5	3.8	18	8.4	VLM13580T-3R3M-D1

* Rated current: smaller value of either Idc1 or Idc2.
Idc1: When based on the inductance change rate (30% below the nominal value)
Idc2: When based on the temperature increase (Temperature increase of 40°C by self heating)

○ Measurement equipment

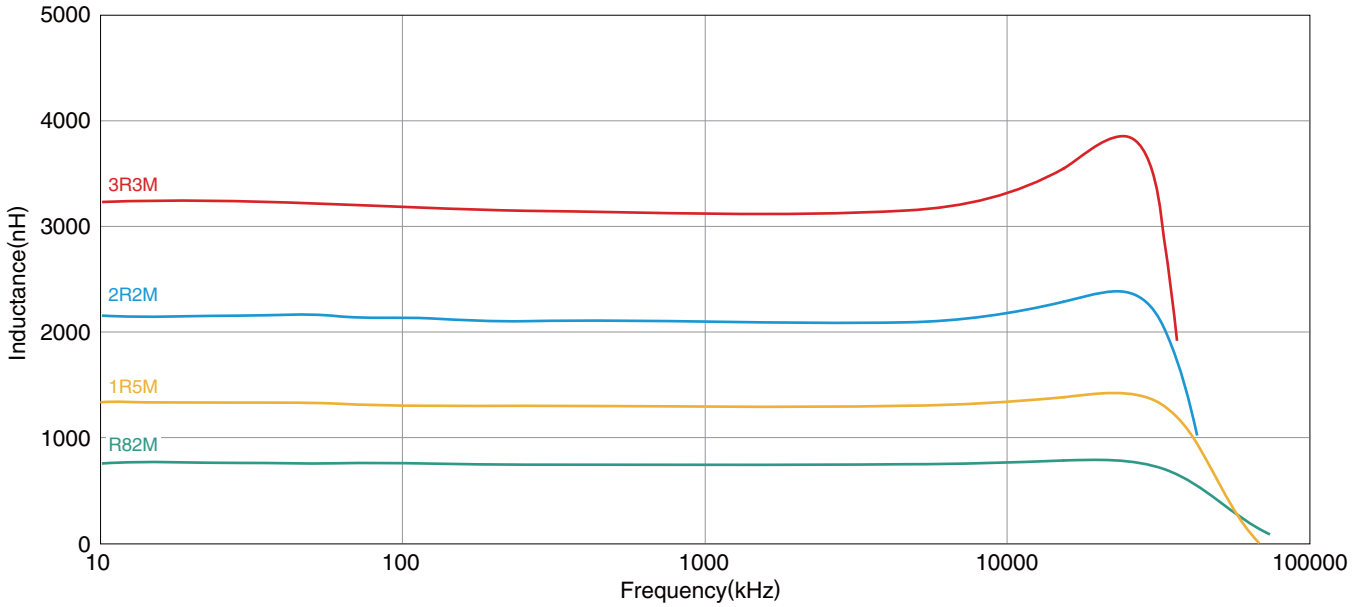
Measurement item	Product No.	Manufacturer
L	4194A	Agilent Technologies
DC resistance	VP-2941A	Panasonic
Rated current Idc1	4284A+42841A+42842C	Agilent Technologies

∗ Equivalent measurement equipment may be used.

VLM series VLM13580-D1 Type

■ELECTRICAL CHARACTERISTICS

□L FREQUENCY CHARACTERISTICS GRAPH



○ Measurement equipment

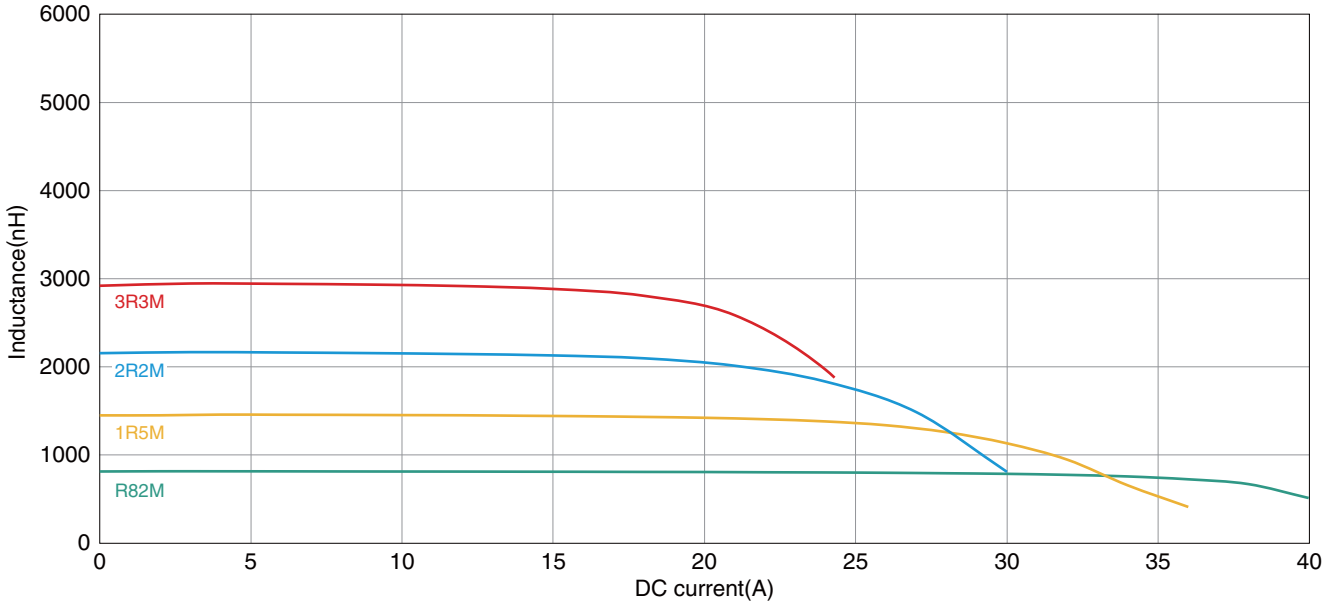
Product No.	Manufacturer
4294A	Agilent Technologies

＊ Equivalent measurement equipment may be used.

VLM series VLM13580-D1 Type

■ELECTRICAL CHARACTERISTICS

□INDUCTANCE VS. DC BIAS CHARACTERISTICS GRAPH



○ Measurement equipment

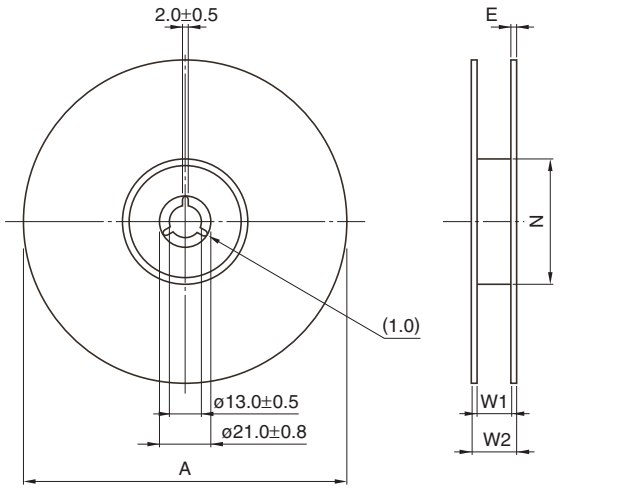
Product No.	Manufacturer
4284A+42841A+42842C	Agilent Technologies

＊ Equivalent measurement equipment may be used.

VLM series

Packaging Style

REEL DIMENSIONS

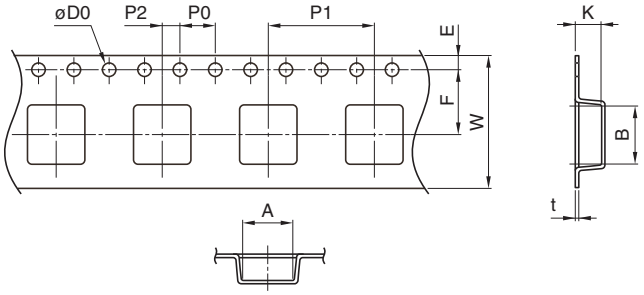


Dimensions in mm

Type	A	W1	W2	N	E
VLM10555-2H	ø330	25.5	30.4	ø100	2
VLM10555-3H	ø330	25.5	30.4	ø100	2
VLM13580-D1	ø330	25.5	30.4	ø100	2

* These values are typical values.

TAPE DIMENSIONS



Dimensions in mm

Type	A	B	øD0	E	F	P0	P1	P2	W	K	t
VLM10555-2H	11.5	11.5	1.5+0.1/-0	1.75±0.1	11.5±0.1	4.0±0.1	16.0±0.1	2.0±0.1	24.0±0.3	6.2	0.4
VLM10555-3H	11.5	11.5	1.5+0.1/-0	1.75±0.1	11.5±0.1	4.0±0.1	16.0±0.1	2.0±0.1	24.0±0.3	6.2	0.4
VLM13580-D1	13.5	13.5	1.5+0.1/-0	1.75±0.1	11.5±0.1	4.0±0.1	16.0±0.1	2.0±0.1	24.0±0.3	8.3	0.5

OUR CERTIFICATE

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