Filter Inductors, Toroid, Radial Leaded

FEATURES

- Choice of encapsulated (TE) or dipped (TD) styles
- TD style combines low cost with excellent performance in commercial applications
- High Q and wide selection of Q vs. frequency ranges in one small package. Large number of standard inductance values
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free
RoHS COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS (applies to core only)

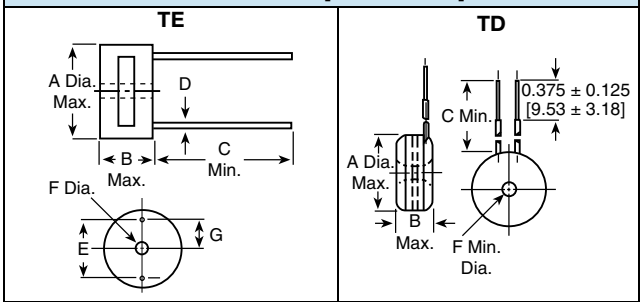
MODEL			TC CODE	TEMPERATURE COEFFICIENT	TEMPERATURE RANGE	TC AVAILABILITY		
TE-3 TD-3	TE-4 TD-4	TE-5 TD-5				Q0	Q3	Q4
X	X	X	TA	0 % ± 1 %	-55 °C to +125 °C		X	X
X	X	X	TD	0 % ± 0.1 %	0 °C to +55 °C		X	X
X	X	X	TL (1)	+40 ppm/°C to + 110 ppm/°C +85 ppm/°C to + 185 ppm/°C	-55 °C to +25 °C +25 °C to +85 °C			X
X	X	X	TM	0 ± 0.25 %	-65 °C to +125 °C		X	X
X	X	X	TR	50 ppm/°C (typical)	-65 °C to +125 °C	X		
X	X	X	TW	0 % ± 0.25 %	-55 °C to +85 °C		X	X

Note
(1) Inverse of typical temperature coefficient of polystyrene capacitor.

INDUCTANCE RANGE

TC CODE	TE-3 TD-3	TE-4 TD-4	TE-5 TD-5
Q0	50 µH to 15 mH	150 µH to 20 mH	1 mH to 100 mH
Q3	500 µH to 487 mH	1 mH to 2 H	5 mH to 2 H
Q4	1 mH to 1 H	2 mH to 5 H	10 mH to 5 H

DIMENSIONS in inches [millimeters]



MODEL	A	B	C	D	E	F	G
TE-3	0.685 [17.40]	0.385 [9.78]	1.0 [25.40]	0.025 [0.635]	0.500 [12.70]	0.093 [2.36]	0.250 [6.35]
TD-3	0.685 [17.40]	0.320 [8.13]	3.0 [76.20]	-	-	0.125 [3.18]	-
TE-4	1.06 [26.92]	0.500 [12.70]	1.0 [25.40]	0.032 [0.813]	0.900 [22.86]	0.120 [3.05]	0.450 [11.43]
TD-4	1.06 [26.92]	0.437 [11.10]	4.0 [101.60]	-	-	0.220 [5.59]	-
TE-5	1.33 [33.78]	0.735 [18.67]	1.0 [25.40]	0.032 [0.813]	1.0 [25.40]	0.144 [3.66]	0.500 [12.70]
TD-5	1.32 [33.53]	0.688 [17.48]	6.0 [152.40]	-	-	0.220 [5.59]	-

ELECTRICAL SPECIFICATIONS

Tolerance:
TE-3, TD-3 = ± 1 % > 2 mH, ± 2 % 154 µH to 2 mH, ± 5 % < 150 µH
TE-4, TD-4 = ± 1 % > 2 mH, ± 2 % < 2 mH
TE-5, TD-5 = ± 1 % > 2 mH, ± 2 % < 2 mH

Insulation resistance: 1000 MΩ minimum

Dielectric strength: 1000 V minimum (TE)
500 V minimum (TD)

MECHANICAL SPECIFICATIONS

Terminal strength: 2 pounds pull test (TE)

Vibration: per MIL-T-27 (TE)

Shock: per MIL-T-27 (TE)

Weight:
TE-3 = 5.1 g, TD-3 = 4.9 g typical
TE-4 = 20 g, TD-4 = 17 g typical
TE-5 = 53 g, TD-5 = 52 g typical

MATERIAL SPECIFICATIONS

Coating: vinyl (TD), non-flammable, abrasion and moisture resistant. Resists most cleaning agents (consult factory for chemicals which may be used)

Standard terminals: tinned copper (TE), stranded, tinned copper, teflon insulated (TD)

Encapsulant: epoxy (TE)

Gauge:
TE-3 = 22 AWG, TD-3 = 26 AWG
TE-4 = 20 AWG, TD-4 = 24 AWG
TE-5 = 20 AWG, TD-5 = 24 AWG

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ORDERING INFORMATION

TE-3	Q0	TR	5 mH	± 1 %	EB	e2
MODEL	Q TYPE	TC CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE	PACKAGE CODE	JEDEC® LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER

T E 3	Q 0	T R	E B	5 0 0 1	F
MODEL	Q TYPE	TC CODE	PACKAGE CODE	INDUCTANCE VALUE	TOL.

DC RESISTANCE AND SELF-RESONANT FREQUENCIES (typical values)

MODEL	IND. (µH)	DCR (Ω)			SRF (MHz)		
		Q0	Q3	Q4	Q0	Q3	Q4
TE-3, TD-3	50.0	0.68	-	-	7.6	-	-
TE-3, TD-3	100.0	1.0	-	-	5.1	-	-
TE-3, TD-3	332.0	3.3	-	-	2.9	-	-
TE-3, TD-3	1000.0	6.9	1.5	0.82	1.4	1.1	1.0
TE-3, TD-3	3320	24.0	4.1	2.3	0.79	0.57	0.55
TE-3, TD-3	10 000	84.0	14.0	5.9	0.40	0.29	0.25
TE-3, TD-3	15 000	106.0	17.0	9.1	0.34	0.24	0.21
TE-3, TD-3	33 200	-	40.0	18.0	-	0.14	0.12
TE-3, TD-3	100 000	-	138.0	58.0	-	0.08	0.077
TE-3, TD-3	332 000	-	555.0	220.0	-	0.04	0.038
TE-3, TD-3	1 000 000	-	-	670.0	-	-	0.019
TE-4, TD-4	150.0	0.54	-	-	2.6	-	-
TE-4, TD-4	1000	2.8	0.7	-	1.0	0.75	-
TE-4, TD-4	2000	5.5	1.4	0.78	0.64	0.54	0.45
TE-4, TD-4	10 000	27.0	4.9	2.5	0.24	0.21	0.18
TE-4, TD-4	20 000	54.0	9.6	5.0	0.18	0.15	0.13
TE-4, TD-4	100 000	-	56.0	23.0	-	0.059	0.051
TE-4, TD-4	1 000 000	-	570.0	260.0	-	0.016	0.014
TE-4, TD-4	2 000 000	-	1200.0	520.0	-	0.013	0.011
TE-5, TD-5	1000	1.8	-	-	0.80	-	-
TE-5, TD-5	3320	5.2	-	-	0.44	-	-
TE-5, TD-5	5000	6.5	1.8	-	0.33	0.32	-
TE-5, TD-5	10 000	13.0	2.4	1.7	0.21	0.20	0.15
TE-5, TD-5	33 200	49.0	8.8	3.9	0.12	0.11	0.086
TE-5, TD-5	100 000	133.0	27.0	11.0	0.061	0.057	0.044
TE-5, TD-5	332 000	-	80.0	44.0	-	0.032	0.024
TE-5, TD-5	1 000 000	-	222.0	121.0	-	0.016	0.012
TE-5, TD-5	2 000 000	-	475.0	217.0	-	0.012	0.008

STANDARD INDUCTANCE VALUE

The following standardization chart is offered for your design and ordering convenience.
Each value listed is within one percent of the preceding and succeeding values shown.
All decade multiples of these values, within the range shown for each model in the chart, are Vishay Dale standard values.
(Example: for a TE-3, 200 µH, 20 mH and 200 mH are all decade multiples of 2.00 and are all standard values.)

1.00	1.21	1.47	1.78	2.15	2.61	3.09	3.74	4.42	5.23	6.19	7.32	8.66
1.02	1.24	1.50	1.82	2.21	2.67	3.16	3.83	4.53	5.36	6.34	7.50	8.87
1.05	1.27	1.54	1.87	2.26	2.74	3.24	3.92	4.64	5.49	6.49	7.68	9.00
1.07	1.30	1.58	1.91	2.32	2.80	3.32	4.00	4.75	5.62	6.65	7.87	9.09
1.10	1.33	1.62	1.96	2.37	2.87	3.40	4.02	4.87	5.76	6.81	8.00	9.31
1.13	1.37	1.65	2.00	2.43	2.94	3.48	4.12	4.99	5.90	6.98	8.06	9.53
1.15	1.40	1.69	2.05	2.49	3.00	3.57	4.22	5.00	6.00	7.00	8.25	9.76
1.18	1.43	1.74	2.10	2.55	3.01	3.65	4.32	5.11	6.04	7.15	8.45	

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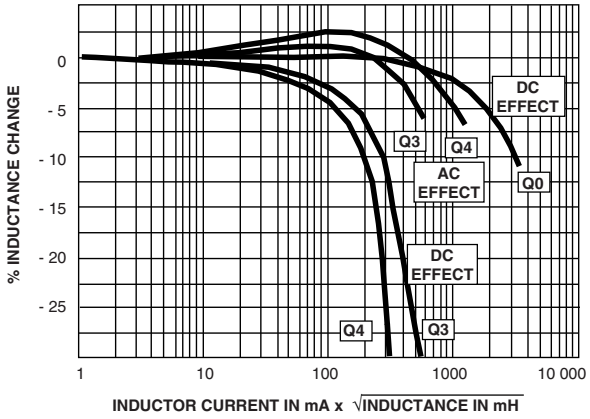
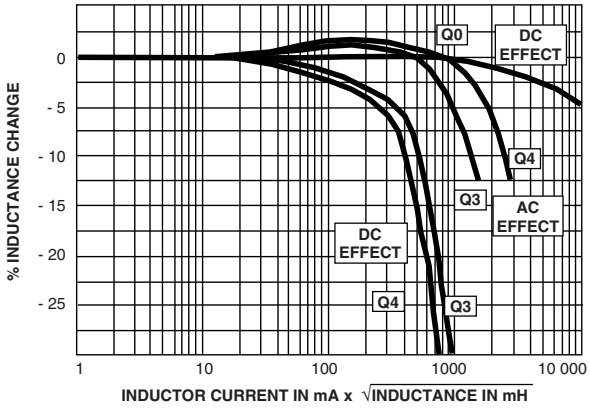
PERFORMANCE GRAPHS: INDUCTANCE VS. DC BIAS, INDUCTANCE VS. AC EXCITATION

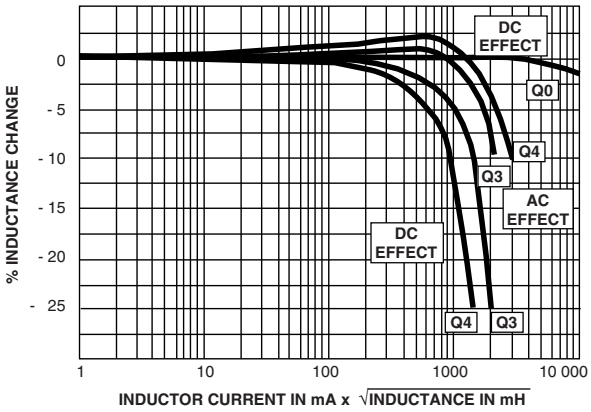
TE-3, TD-3



TE-4, TD-4



TE-5, TD-5



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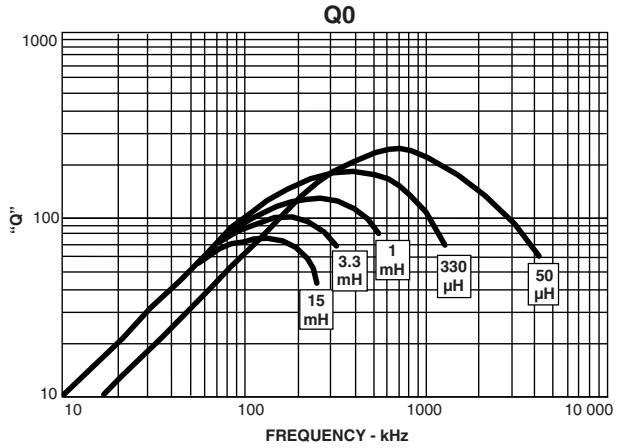
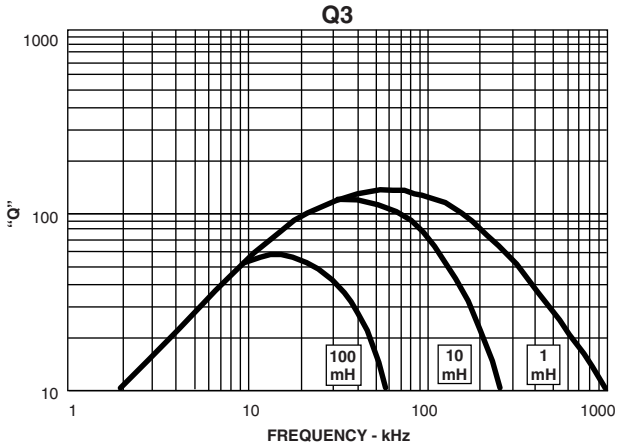
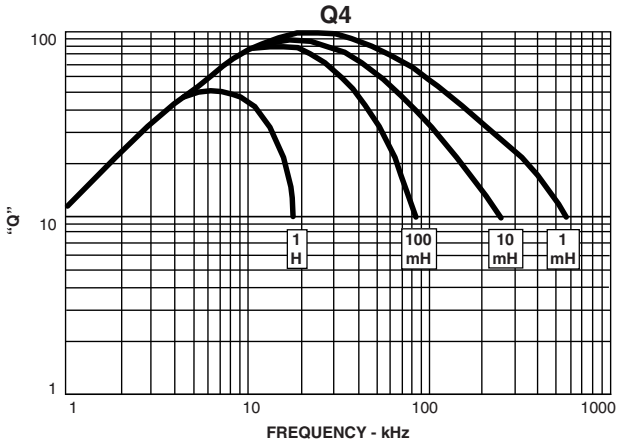
PERFORMANCE GRAPHS: TYPICAL Q VS. FREQUENCY

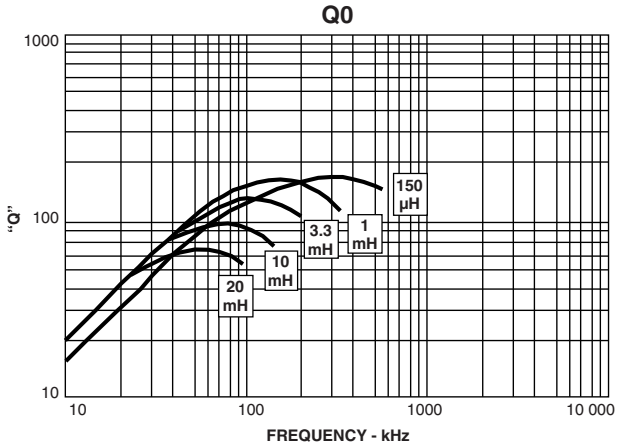
TE-3, TD-3

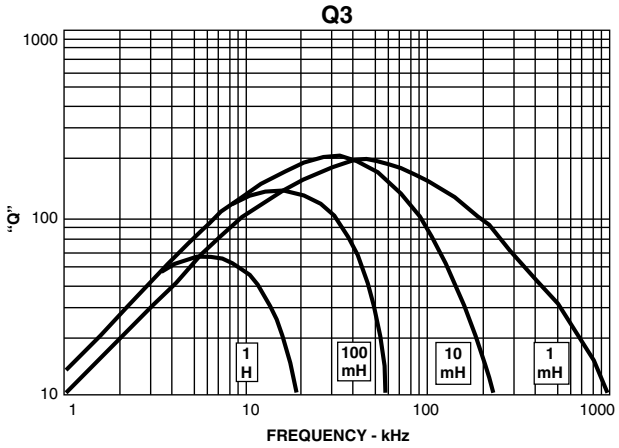


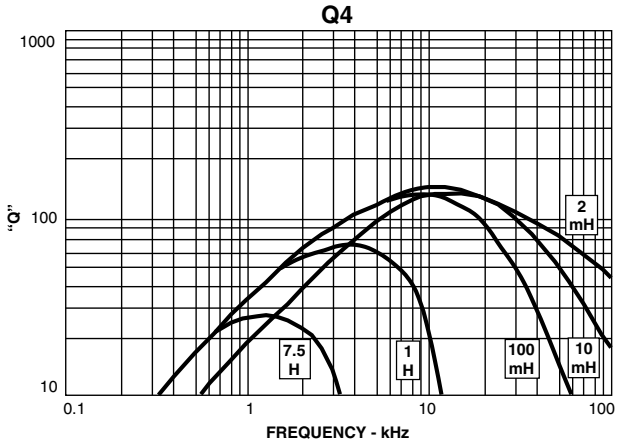




TE-4, TD-4







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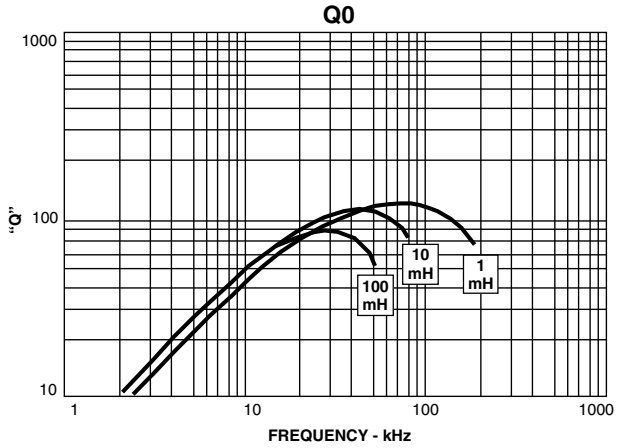
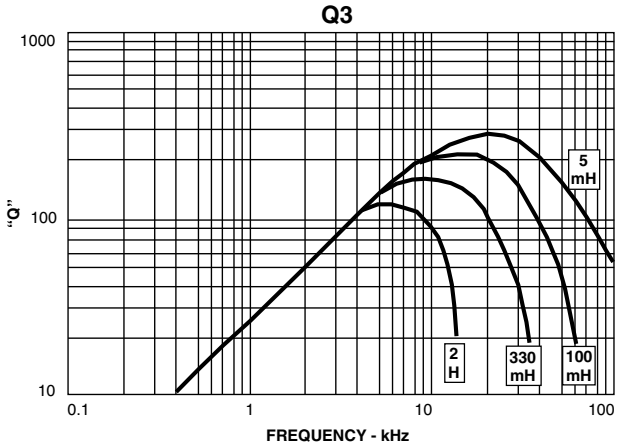
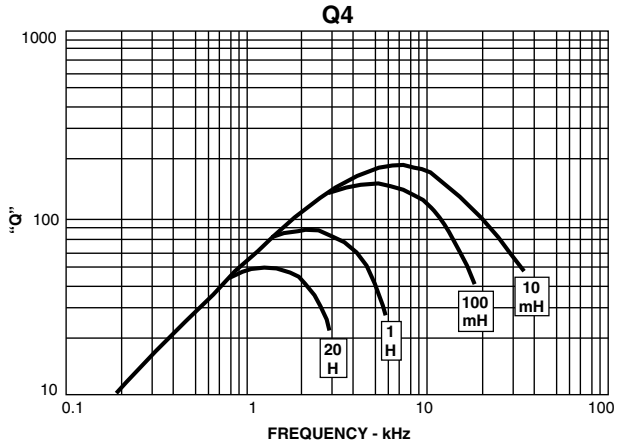
PERFORMANCE GRAPHS: TYPICAL Q VS. FREQUENCY

TE-5, TD-5







MARKING

- Vishay Dale
- Model
- Q type
- TC code
- Inductance value
- Inductance tolerance
- Date code

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