

## 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
- Compliant to RoHS directive 2002/95/EC


**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 <sup>(1)</sup>	+ 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**
<sup>(1)</sup> 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 MW 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



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

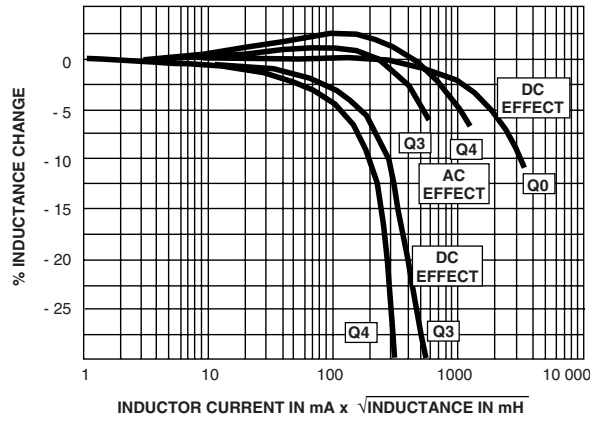
GLOBAL PART NUMBER													
T	E	3	Q	0	T	R	E	B	5	0	0	1	F
MODEL			Q TYPE		TC CODE		PACKAGE CODE		INDUCTANCE VALUE				TOL.

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

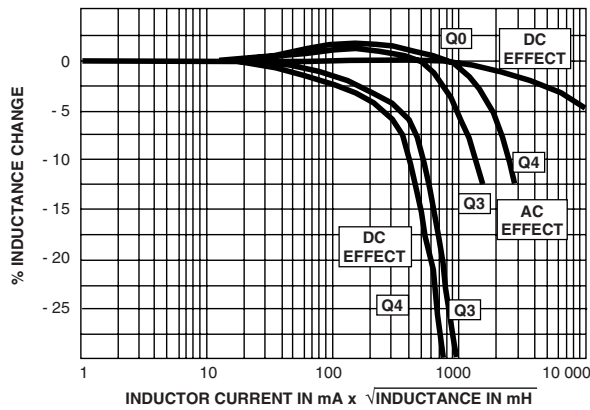
STANDARD INDUCTANCE VALUE													
The following standardization chart is offered for your design and ordering convenience. Each value listed is within one percent of the preceding and succeeding values shown. All decade multiples of these values, within the range shown for each model in the chart, 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	

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

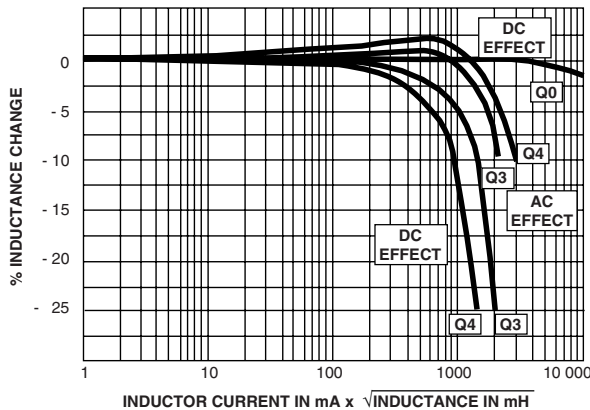
TE-3, TD-3



TE-4, TD-4

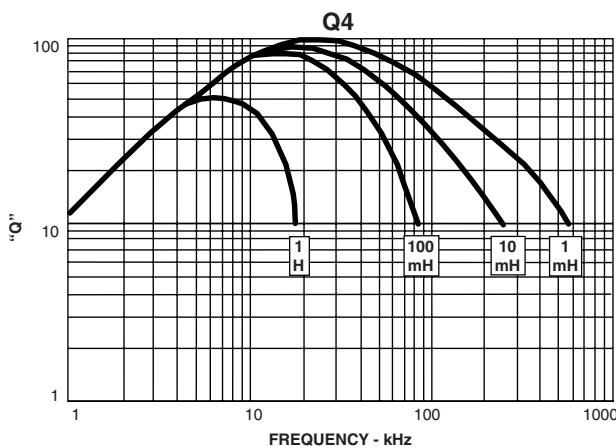
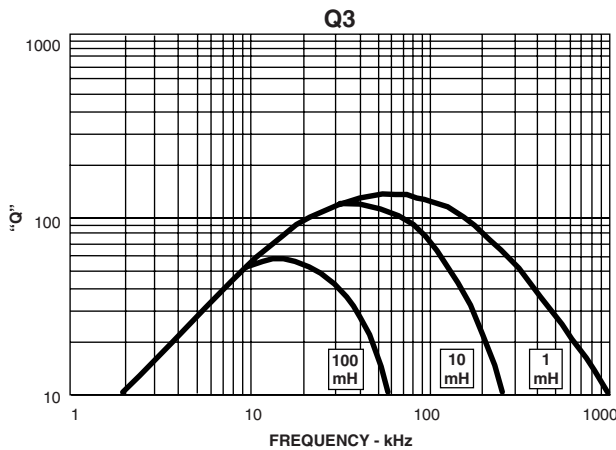
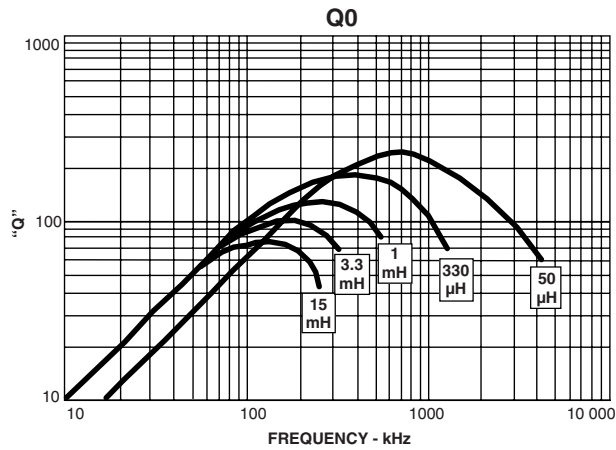


TE-5, TD-5

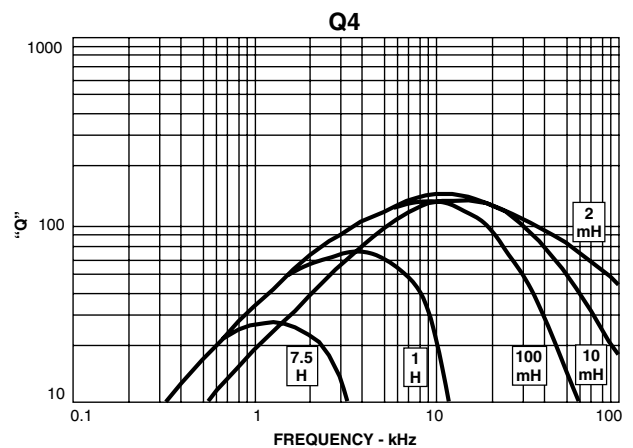
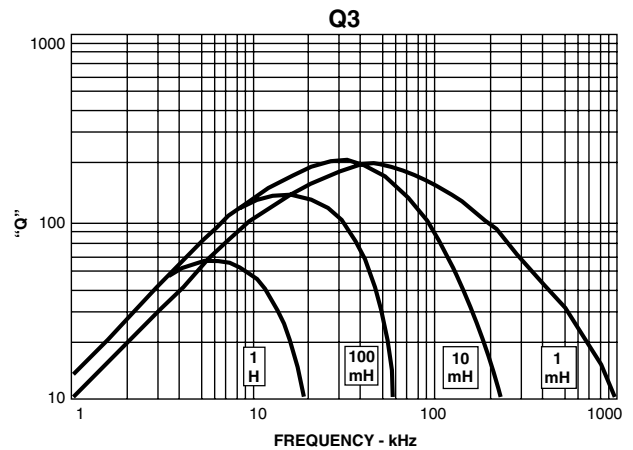
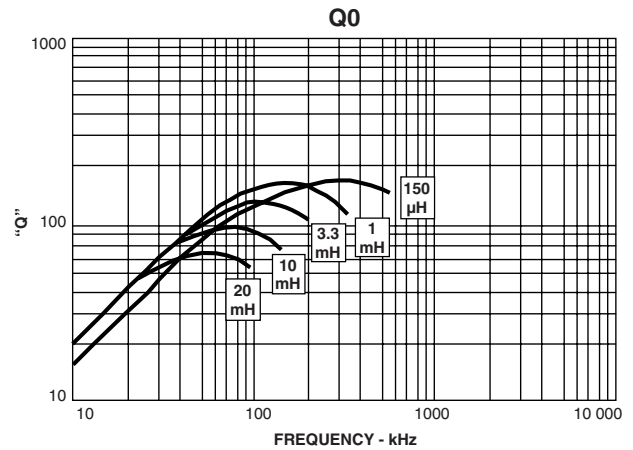


**PERFORMANCE GRAPHS: TYPICAL Q VS. FREQUENCY**

TE-3, TD-3

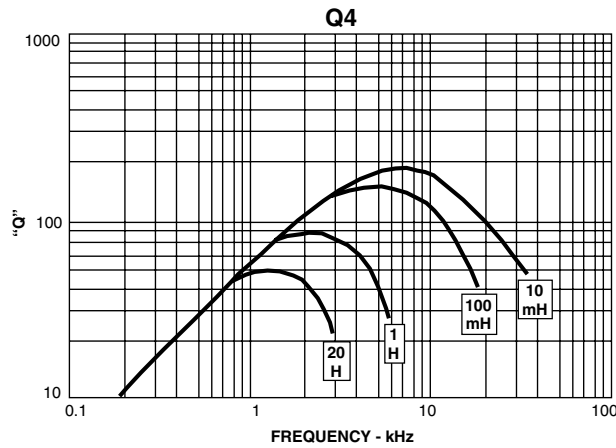
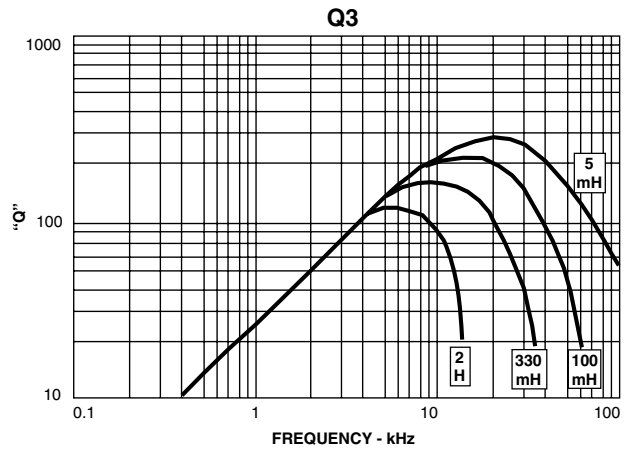
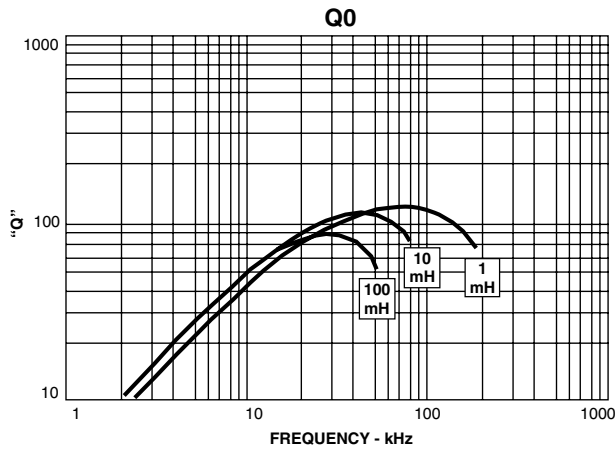


TE-4, TD-4



**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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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**