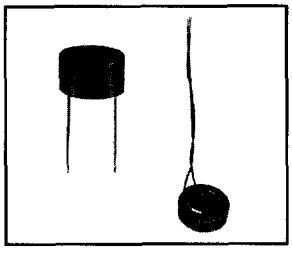
MODELS TE and TD
Filter Inductors
Toroid

A COMPANY OF VISHAY DALE®



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 versus frequency ranges in one small package. Large number of standard inductance values.

STANDARD ELECTRICAL SPECIFICATIONS (Applies to Core Only)

MODEL							T. C. AVAILABILITY		
TE-2 TD-2	TE-3 TD-3	TE-4 TD-4	TE-5 TD-5	T. C. CODE	TEMPERATURE COEFFICIENT	TEMPERATURE RANGE	Q0	Q3	Q4
X	X	X	X	TA	0 ± 1%	- 55°C to + 125°C		X	X
		X	X	TB	0 ± 0.1%	+ 13°C to + 35°C		X	X
X	X	X	X	TD	0 ± 0.1%	0°C to + 55°C		X	X
		X	X	TE	0 ± 0.15%	0°C to + 55°C			X
	X	X	X	TL*	+ 40 to + 110 PPM/°C + 85 to + 185 PPM/°C	- 55°C to + 25°C + 25°C to + 85°C			X
X	X	X	X	TM	0 ± 0.25%	- 65°C to + 125°C		X	X
X	X	X	X	TR	50 PPM/°C (Typical)	- 65°C to + 125°C	X		
X	X	X	X	TW	0 ± 0.25%	- 55°C to + 85°C		X	X

* Inverse of typical Temperature Coefficient of polystyrene capacitor.

INDUCTANCE RANGES

T. C. CODE	TE-2 TD-2	TE-3 TD-3	TE-4 TD-4	TE-5 TD-5
Q0	40µH to 15mH	50µH to 15mH	150µH to 20mH	1mH to 100mH
Q3	475µH to 120mH	500µH to 1H	1mH to 2H	5mH to 2H
Q4	1mH to 250mH	1mH to 4H	2mH to 5H	10mH to 5H

ELECTRICAL SPECIFICATIONS

Tolerance:
TE-2, TD-2 = ± 1% > 2mH, ± 2% = .05mH to 2mH.
TE-3, TD-3 = ± 1% > 2mH, ± 2% 154µH to 2mH, ± 5% < 150µH.
TE-4, TD-4 = ± 1% > 2mH, ± 2% < 2mH.
TE-5, TD-5 = ± 1% > 2mH, ± 2% < 2mH.

Insulation Resistance: 1000 Megohm 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-2 = 2 grams, TD-2 = 1.6 grams typical.
TE-3 = 5.1 grams, TD-3 = 4.9 grams typical.
TE-4 = 20 grams, TD-4 = 17 grams typical.
TE-5 = 53 grams, TD-5 = 52 grams typical.

MATERIAL SPECIFICATIONS

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

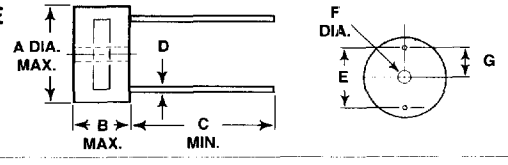
Standard Terminals: Tinned copper (TE); Stranded, tinned copper, Teflon insulated (TD).

Encapsulant: Epoxy (TE).

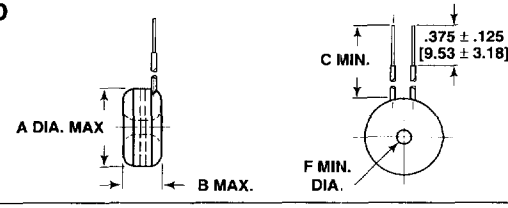
Gauge: TE-2 = 24 AWG, TD-2 = 30 AWG.
TE-3 = 22 AWG, TD-3 = 26 AWG.
TE-4 = 20 AWG, TD-4 = 24 AWG.
TE-5 = 20 AWG, TD-5 = 24 AWG.

DIMENSIONAL CONFIGURATIONS [Numbers in brackets indicate millimeters]

TE



TD



MODEL	A	B	C	D	E	F	G
TE-2	.437 [11.10]	.270 [6.86]	1.0 [25.40]	.020 [.508]	.300 [7.62]	—	—
TD-2	.437 [11.10]	.250 [6.35]	2.0 [50.80]	—	—	—	—
TE-3	.685 [17.40]	.385 [9.78]	1.0 [25.40]	.025 [.635]	.500 [12.70]	.093 [2.36]	.250 [6.35]
TD-3	.685 [17.40]	.320 [8.13]	3.0 [76.20]	—	—	.125 [3.18]	—
TE-4	1.06 [26.92]	.500 [12.70]	1.0 [25.40]	.032 [.813]	.900 [22.86]	.120 [3.05]	.450 [11.43]
TD-4	1.06 [26.92]	.437 [11.10]	4.0 [101.60]	—	—	.220 [5.59]	—
TE-5	1.32 [33.53]	.725 [18.42]	1.0 [25.40]	.032 [.813]	1.0 [25.40]	.144 [3.66]	.500 [12.70]
TD-5	1.32 [33.53]	.688 [17.48]	6.0 [152.40]	—	—	.220 [5.59]	—

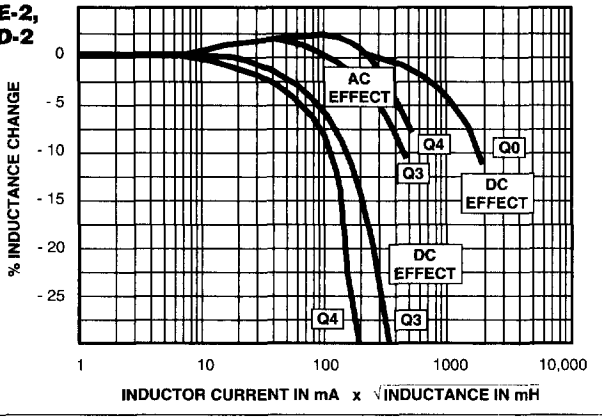
MODELS TE and TD

DC RESISTANCE AND SELF-RESONANT FREQUENCIES (Typical Values)

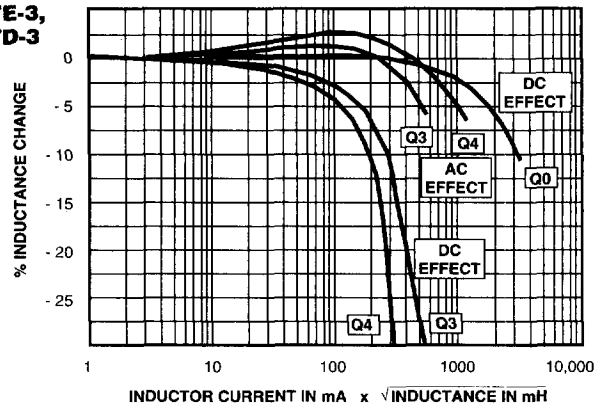
MODEL TE-2, TD-2	DCR (Ohms)			SELF-RESONANT FREQ. (MHz)		
IND.	Q0	Q3	Q4	Q0	Q3	Q4
.05mH	1.9	—	—	10.0	—	—
.10mH	2.7	—	—	7.0	—	—
.332mH	7.7	—	—	3.1	—	—
.475mH	9.3	2.3	—	2.5	2.4	—
1.0mH	26.0	4.2	2.3	1.4	1.2	2.0
3.32mH	79.0	9.7	5.4	.70	.79	.95
10.0mH	251.0	31.0	18.0	.34	.40	.43
33.2mH	—	118.0	54.0	—	.18	.21
100.0mH	—	408.0	227.0	—	.06	.10
250.0mH	—	—	450.0	—	—	.05
MODEL TE-3, TD-3						
50.0µH	.68	—	—	7.6	—	—
100.0µH	1.0	—	—	5.1	—	—
332.0µH	3.3	—	—	2.9	—	—
1.0mH	6.9	1.5	.82	1.4	1.1	1.0
3.32mH	24.0	4.1	2.3	.79	.57	.55
10.0mH	84.0	14.0	5.9	.40	.29	.25
15.0mH	106.0	17.0	9.1	.34	.24	.21
33.2mH	—	40.0	18.0	—	.14	.12
100.0mH	—	138.0	58.0	—	.08	.077
332.0mH	—	555.0	220.0	—	.04	.038
1.0H	—	1500.0	670.0	—	.021	.019
4.0H	—	—	2700.0	—	—	.009
MODEL TE-4, TD-4						
150.0µH	.54	—	—	2.6	—	—
1.0mH	2.8	.7	—	1.0	.75	—
2.0mH	5.5	1.4	.78	.64	.54	.45
10.0mH	27.0	4.9	2.5	.24	.21	.18
20.0mH	54.0	9.6	5.0	.18	.15	.13
100.0mH	—	56.0	23.0	—	.059	.051
1.0H	—	570.0	260.0	—	.016	.014
2.0H	—	1200.0	520.0	—	.013	.011
7.5H	—	—	2000.0	—	—	.004
MODEL TE-5, TD-5						
1.0mH	1.8	—	—	.80	—	—
3.32mH	5.2	—	—	.44	—	—
5.0mH	6.5	1.8	—	.33	.32	—
10.0mH	13.0	2.4	1.7	.21	.20	.15
33.2mH	49.0	8.8	3.9	.12	.11	.086
100.0mH	133.0	27.0	11.0	.061	.057	.044
332.0mH	—	80.0	44.0	—	.032	.024
1.0H	—	222.0	121.0	—	.016	.012
2.0H	—	475.0	217.0	—	.012	.008
10.0H	—	—	1300.0	—	—	.003
20.0H	—	—	2400.0	—	—	.002

Inductance vs DC Bias, Inductance vs AC Excitation

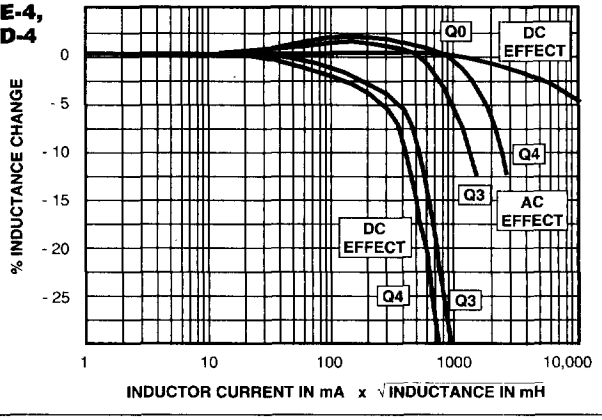
TE-2, TD-2



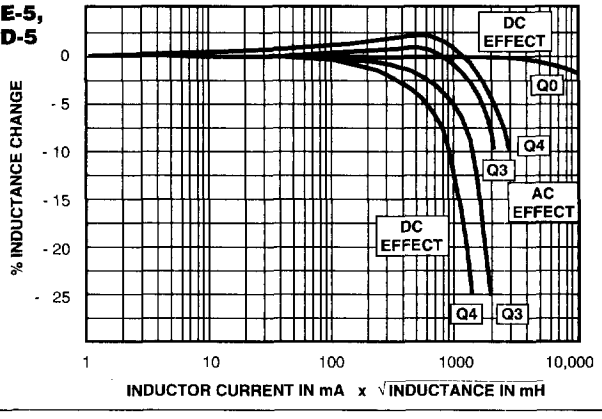
TE-3, TD-3



TE-4, TD-4

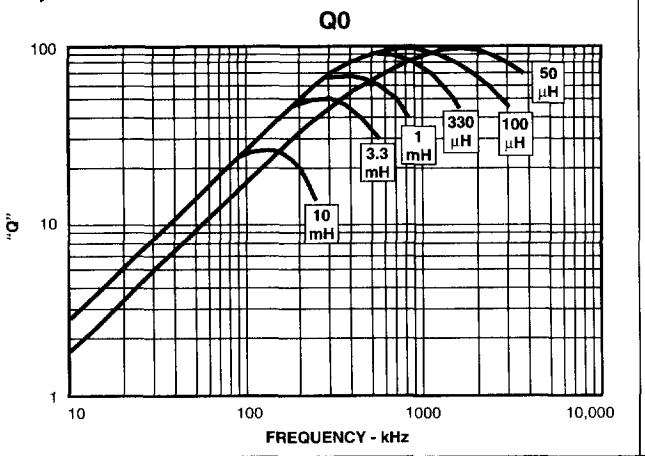


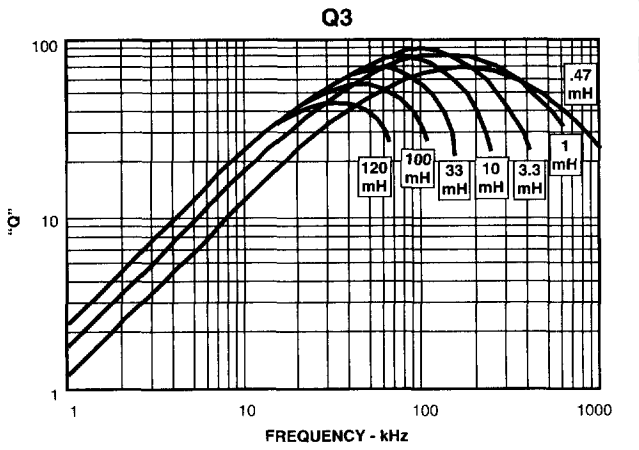
TE-5, TD-5

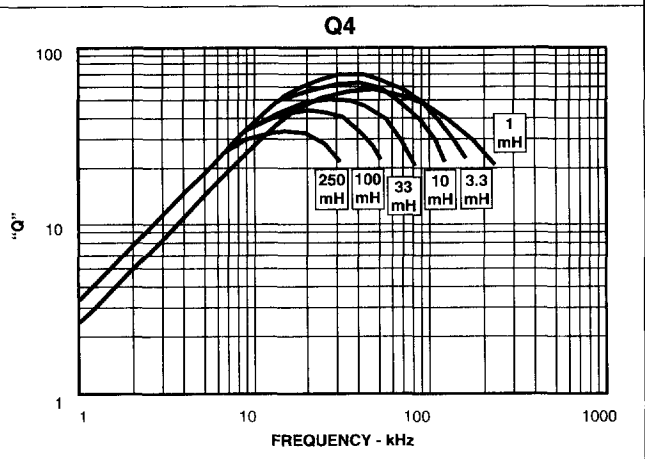


PERFORMANCE GRAPHS: TYPICAL Q vs FREQUENCY

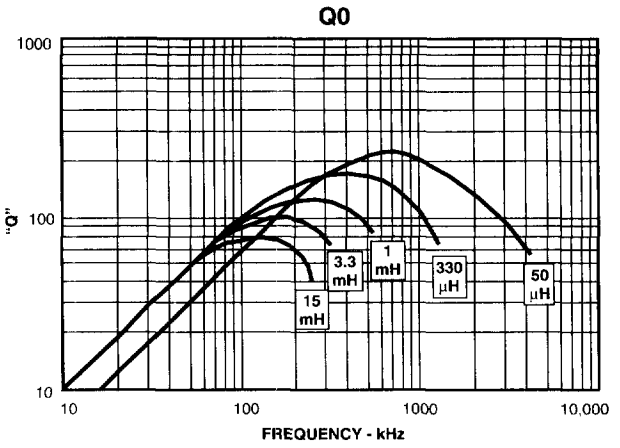
TE-2, TD-2

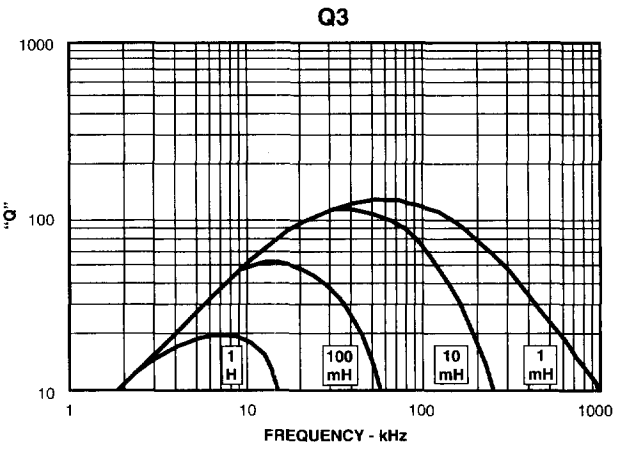


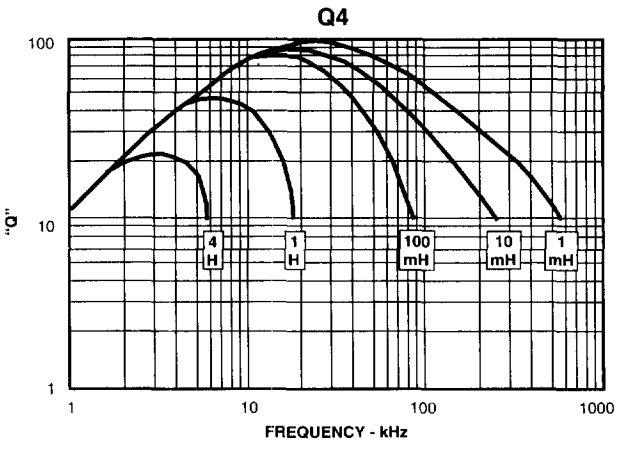




TE-3, TD-3







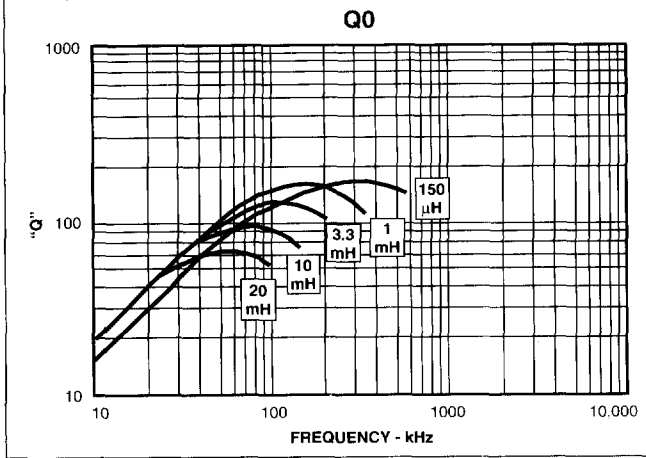
STANDARD INDUCTANCE VALUE

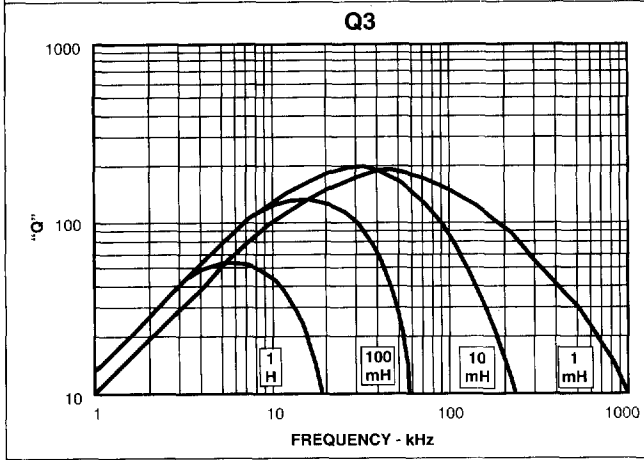
The following standardization chart is offered for your design and ordering convenience. Each value listed is within one percent of the preceding and succeeding values shown. All decade multiples of these values, within the range shown for each model in the chart, are Dale® standard values. (Example: For a TE-2 200µH, 20mH and 200mH are all decade multiples of 2.00 and are all standard values.)

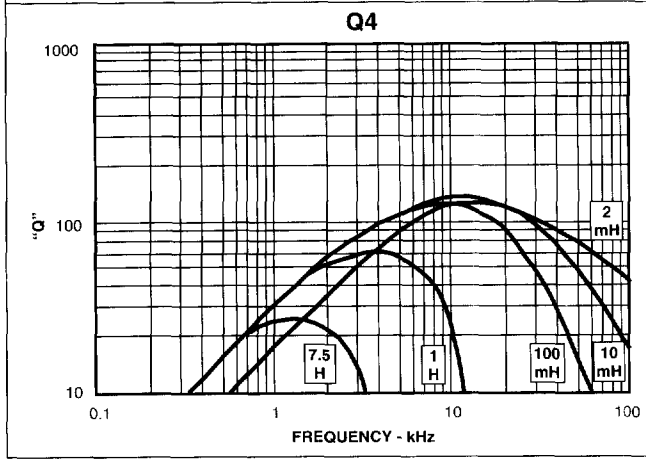
1.00	1.21	1.47	1.78	2.15	2.61	3.09	3.74	4.42	5.23	6.19	7.32	8.66
1.02	1.24	1.50	1.82	2.21	2.67	3.16	3.83	4.53	5.36	6.34	7.50	8.87
1.05	1.27	1.54	1.87	2.26	2.74	3.24	3.92	4.64	5.49	6.49	7.68	9.00
1.07	1.30	1.58	1.91	2.32	2.80	3.32	4.00	4.75	5.62	6.65	7.87	9.09
1.10	1.33	1.62	1.96	2.37	2.87	3.40	4.02	4.87	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: TYPICAL Q vs FREQUENCY

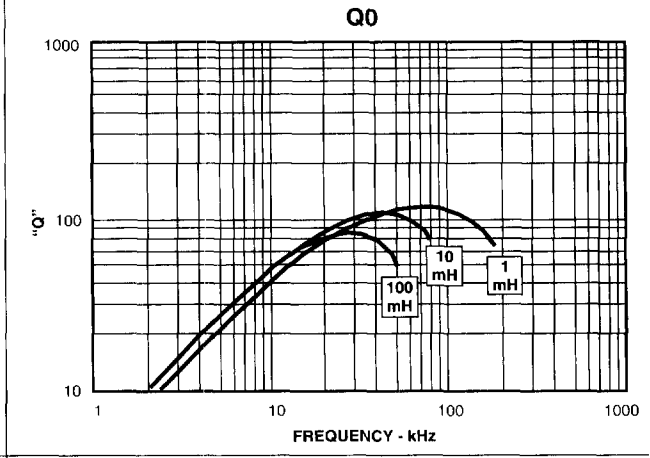
TE-4, TD-4

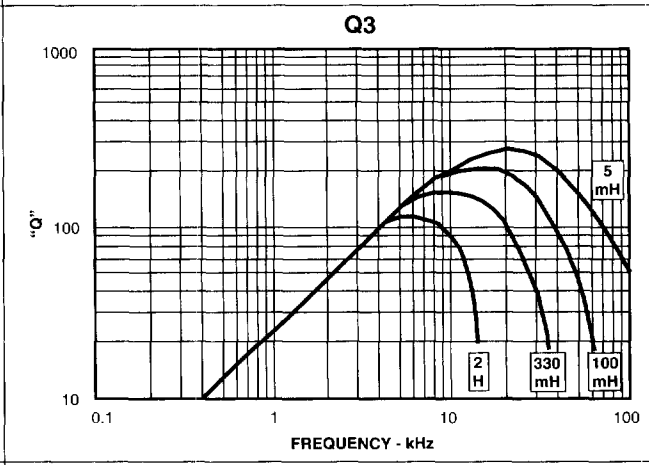


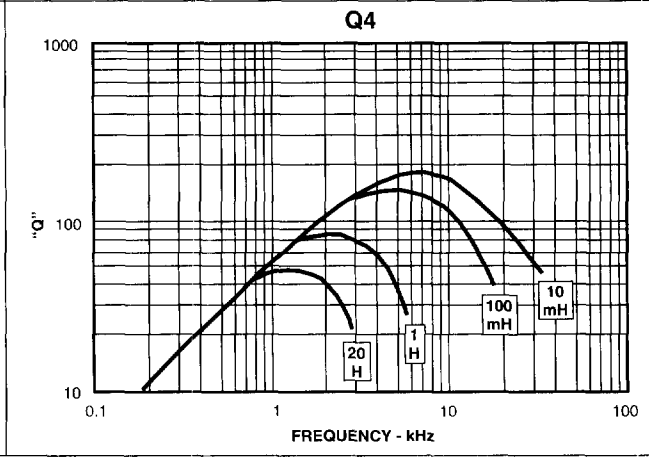




TE-5, TD-5







PART MARKING

- — Dale
- — Model
- — Q Type
- — T.C. code
- — Inductance value
- — Inductance tolerance
- — Date code

HOW TO ORDER

TE-2	Q0	TR	5mH	1%
MODEL	Q TYPE	T. C. CODE	INDUCTANCE VALUE	INDUCTANCE TOLERANCE