

Q Series

0.5 WATTS - 100 - 10KV SINGLE OUTPUT DC/DC INDUSTRIAL

Features

- Ultra-miniature case size
- No external components required
- Low ripple and EMI/RFI
- Proportional input/output
- Input/output isolation
- Short circuit protection



Specifications

INPUT

Voltage	0-5, 12 or 24VDC.
Typical turn-on voltage	0.7V

OUTPUT

Power	0.5W
Voltage tolerance	+5%, -10% typical at full load.
Isolation	500V +V out.

ENVIRONMENTAL

Operating temperature	-25°C to +70°C (Q30-Q101: -10°C to +60°C.)
Storage temperature	-55°C to +105°C.

GENERAL

Dimensions	Case A&B: 12.7 x 12.7 x 12.7 mm. Case C: 21.59 x 21.59 x 21.59 mm.
Weight	Case A&B: 4.25g. Case C: 28.3g.
Packaging	Fully encapsulated.
Case material	Glass-filled Epoxy.

STANDARDS

Safety standard	The Q Series is a component DC to HV DC converter, not a power supply. It operates from a low voltage DC and is fully encapsulated. For applications requiring safety approval, the Q Series should be considered a component not requiring individual certification.
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Selection Tables

CASE A & B

PIN#	FUNCTION	QXX	QXXN
1	Input	(-)	(-)
2	Input	(+)	(+)
3	Output	(+)	(-)
4	Output	(-)	(+)

CASE C

WIRE	COLOR	FUNCTION	QXX	QXXN
W1	Red	Input	(+)	(+)
W2	Black	Input	(-)	(-)
W3	Brn	Output	(+)	(-)
W4	Vio	Output	(-)	(+)

Q Series

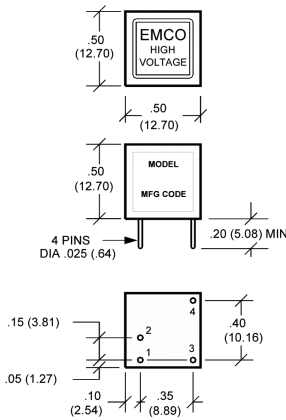
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MODEL	INPUT VOLTAGE	OUTPUT*2 VOLTAGE	OUTPUT*1 CURRENT	INPUT CURRENT		FULL LOAD	TYPICAL FREQUENCY	CASE
				RIPPLE P-P	NO LOAD			
Q01-5	0 to 5V	0 to +/-100V	5 mA	<1.00%	<50mA	<175mA	100-200kHz	A
Q01-12	0 to 12V	0 to +/-100V	5 mA	<1.00%	<15mA	<100mA	100-200kHz	A
Q01-24	0 to 24V	0 to +/-100V	5 mA	<1.00%	<10mA	<50mA	100-200kHz	A
Q02-5	0 to 5V	0 to +/-200V	2.5 mA	<0.25%	<50mA	<175mA	200-350kHz	A
Q02-12	0 to 12V	0 to +/-200V	2.5 mA	<0.25%	<15mA	<75mA	200-350kHz	A
Q02-24	0 to 24V	0 to +/-200V	2.5 mA	<0.25%	<10mA	<50mA	200-350kHz	A
Q03-5	0 to 5V	0 to +/-300V	1.6 mA	<0.25%	<50mA	<175mA	125-300kHz	A
Q03-12	0 to 12V	0 to +/-300V	1.6 mA	<0.25%	<15mA	<100mA	125-300kHz	A
Q03-24	0 to 24V	0 to +/-300V	1.6 mA	<0.10%	<10mA	<50mA	125-300kHz	A
Q04-5	0 to 5V	0 to +/-400V	1.25 mA	<0.05%	<50mA	<175mA	200-350kHz	A
Q04-12	0 to 12V	0 to +/-400V	1.25 mA	<0.05%	<15mA	<100mA	200-350kHz	A
Q04-24	0 to 24V	0 to +/-400V	1.25 mA	<0.05%	<10mA	<50mA	200-350kHz	A
Q05-5	0 to 5V	0 to +/-500V	1 mA	<0.10%	<50mA	<200mA	175-350kHz	A
Q05-12	0 to 12V	0 to +/-500V	1 mA	<0.05%	<15mA	<100mA	175-350kHz	A
Q05-24	0 to 24V	0 to +/-500V	1 mA	<0.125%	<10mA	<50mA	200-350kHz	A
Q06-5	0 to 5V	0 to +/-600V	0.8 mA	<0.10%	<50mA	<200mA	150-275kHz	A
Q06-12	0 to 12V	0 to +/-600V	0.8 mA	<0.10%	<20mA	<100mA	175-350kHz	A
Q06-24	0 to 24V	0 to +/-600V	0.8 mA	<0.10%	<10mA	<50mA	150-275kHz	A
Q07-5	0 to 5V	0 to +/-700V	0.7 mA	<0.10%	<50mA	<175mA	150-275kHz	A
Q07-12	0 to 12V	0 to +/-700V	0.7 mA	<0.10%	<15mA	<100mA	150-275kHz	A
Q07-24	0 to 24V	0 to +/-700V	0.7 mA	<0.25%	<10mA	<50mA	75-175kHz	A
Q08-5	0 to 5V	0 to +/-800V	0.625 mA	<0.30%	<50mA	<175mA	200-350kHz	A
Q08-12	0 to 12V	0 to +/-800V	0.625 mA	<0.30%	<20mA	<100mA	100-200kHz	A
Q08-24	0 to 24V	0 to +/-800V	0.625 mA	<0.25%	<10mA	<50mA	100-200kHz	A
Q09-5	0 to 5V	0 to +/-900V	0.555 mA	<0.30%	<50mA	<175mA	125-300kHz	A
Q09-12	0 to 12V	0 to +/-900V	0.555 mA	<0.25%	<20mA	<100mA	125-300kHz	A
Q09-24	0 to 24V	0 to +/-900V	0.555 mA	<0.30%	<10mA	<50mA	125-300kHz	A
Q10-5	0 to 5V	0 to 1,000V	0.5 mA	<0.25%	<50mA	<175mA	400-500kHz	A
Q10-12	0 to 12V	0 to 1,000V	0.5 mA	<0.25%	<15mA	<100mA	125-300kHz	A
Q10-24	0 to 24V	0 to 1,000V	0.5 mA	<0.25%	<10mA	<50mA	125-300kHz	A
Q10N-5	0 to 5V	0 to -1,000V	0.5 mA	<0.25%	<50mA	<175mA	125-300kHz	A
Q10N-12	0 to 12V	0 to -1,000V	0.5 mA	<0.25%	<15mA	<100mA	125-300kHz	A
Q10N-24	0 to 24V	0 to -1,000V	0.5 mA	<0.25%	<10mA	<50mA	125-300kHz	A
Q12-5	0 to 5V	0 to 1,200V	0.4 mA	<0.25%	<50mA	<175mA	150-250kHz	A
Q12N-5	0 to 5V	0 to -1,200V	0.4 mA	<0.25%	<50mA	<175mA	150-250kHz	A
Q15-5	0 to 5V	0 to 1,500V	0.3 mA	<0.25%	<75mA	<175mA	125-350kHz	A
Q15N-5	0 to 5V	0 to -1,500V	0.3 mA	<0.25%	<75mA	<200mA	125-350kHz	A
Q20-5	0 to 5V	0 to 2,000V	0.25 mA	<0.25%	<100mA	<200mA	150-350kHz	A
Q20N-5	0 to 5V	0 to -2,000V	0.25 mA	<0.25%	<100mA	<200mA	150-350kHz	A
Q30-5	0 to 5V	0 to 3,000V	0.16mA	<0.50%	<100mA	<200mA	100-225kHz	A
Q30N-5	0 to 5V	0 to -3,000V	0.16mA	<0.50%	<100mA	<200mA	125-275kHz	B
Q40-5	0 to 5V	0 to 4000V	0.125mA	<0.50%	<175mA	<300mA	125-275kHz	B
Q40N-5	0 to 5V	0 to -4000V	0.125mA	<0.50%	<175mA	<300mA	125-275kHz	B
Q50-5	0 to 5V	0 to 5000V	0.100mA	<0.50%	<250mA	<400mA	200-350kHz	B
Q50N-5	0 to 5V	0 to -5000V	0.100mA	<0.50%	<250mA	<400mA	200-350kHz	B
Q60-5	0 to 5V	0 to 6000V	83µA	<1.00%	<175mA	<250mA	50-100kHz	B
Q60N-5	0 to 5V	0 to -6000V	83µA	<1.00%	<175mA	<250mA	50-100kHz	C
Q80-5 0	to 5V	0 to 8000V	62.5µA	<1.00%	<175mA	<250mA	50-100kHz	C
Q80N-5	0 to 5V	0 to -8000V	62.5µA	<1.00%	<175mA	<250mA	50-100kHz	C
Q101-5	0 to 5V	0 to 10,000V	50µA	<1.00%	<175mA	<250mA	50-75kHz	C
Q101N-5	0 to 5V	0 to -10,000V	50µA	<1.00%	<175mA	<250mA	50-75kHz	C

* Note: - 1. At Maximum Rated Output Voltage. 2. Output Voltage is load dependent.

Technical Illustration

CASE A&B Q01 to Q20



BOTTOM VIEW

Pin Diameter .025

PHYSICAL CHARACTERISTICS

SIZE: 0.5 x 0.5 x 0.5 (12.7 x 12.7 x 12.7)
 WEIGHT: 0.15 Ounces Approx. (4.25 Grams)
 PACKAGING: Fully Encapsulated
 CASE MATERIAL: Glass-filled Epoxy
 PINS: See Table

ELECTRICAL SPECIFICATIONS

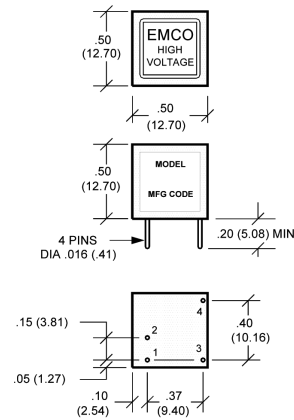
INPUT VOLTAGE: Models Q01-Q10: 0 to 5, 12 or 24 VDC
 Models Q12-Q50: 0 to 5 VDC
 TYPICAL TURN-ON VOLTAGE: 0.7 Volts
 OUTPUT VOLTAGE TOLERANCE: +5%, -10%
 At full rated output voltage, full load, 25°C.
 ISOLATION: < +/- 500V BIAS ON OUTPUT RTN (PIN 4)
 OPERATING TEMP: -25° to +70° C (Q30 - Q50: -10° to +60° C)
 STORAGE TEMP: -55° to +105° C

Pin #	Function	Qxx	QxxN
1	Input	(-)	(-)
2	Input	(+)	(+)
3	Output	(+)	(-)
4	Output	(RTN)	(RTN)

Dimensions are in inches
 Dimensional Tolerances: ± .03 (.76mm)
 (Metric Equivalents in Parenthesis)

Post-wave solder installation recommended.

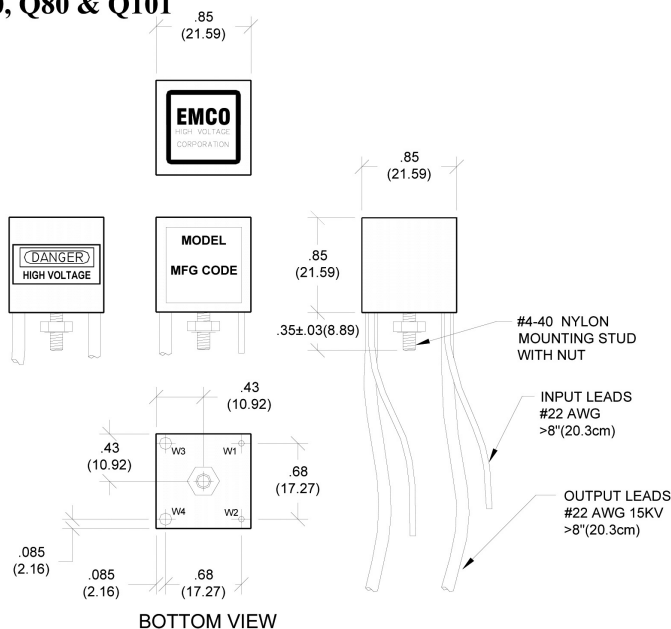
CASE B Q30 to Q50



BOTTOM VIEW

Pin Diameter .016

CASE C Q60, Q80 & Q101



BOTTOM VIEW

PHYSICAL CHARACTERISTICS

SIZE: 0.85 x 0.85 x 0.85 (21.59 x 21.59 x 21.59)
 WEIGHT: 1 Ounce (28.3 Grams)
 PACKAGING: Fully Encapsulated
 CASE MATERIAL: Glass-filled Epoxy

ELECTRICAL SPECIFICATIONS

INPUT VOLTAGE: 0 to 5 VDC
 TYPICAL TURN-ON VOLTAGE: 0.7 Volts
 OUTPUT VOLTAGE TOLERANCE: +5%, -10%
 At full rated output voltage, full load, 25°C.
 ISOLATION: < +/- 500V BIAS ON OUTPUT RTN (W4)
 OPERATING TEMP: -10° to +60° C
 STORAGE TEMP: -20° to +105° C
 NOTE: Do not allow output voltage to exceed maximum rating.

Wire #	Color	Function	Qxx	QxxN
W1	Red	Input	(+)	(+)
W2	Black	Input	(-)	(-)
W3	Brn	Output	(+)	(-)
W4	Vio	Output	(RTN)	(RTN)

Dimensions are in inches
 Dimensional Tolerances: ± .03 (.76mm)
 (Metric Equivalents in Parenthesis)

Post-wave solder installation recommended.