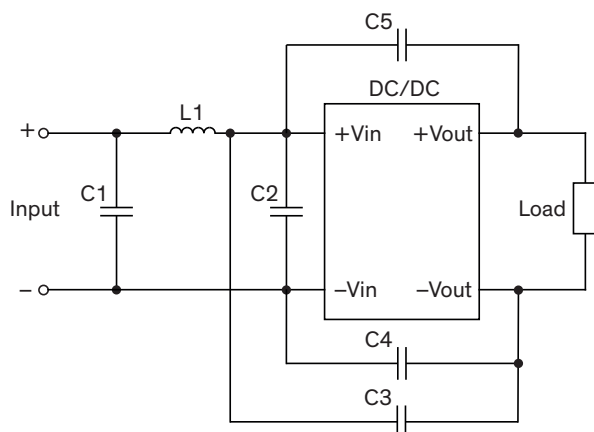


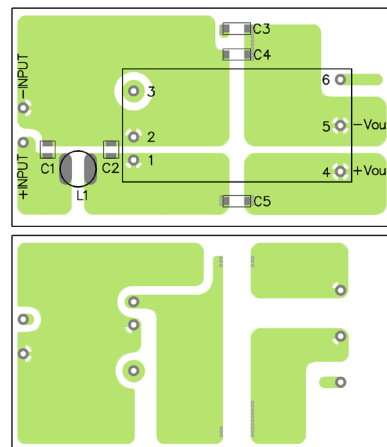
### EMI Consideration

Suggested filter to comply with EN 55032 Conducted and Radiated Emissions Class A limits (24 & 48 Vin models)

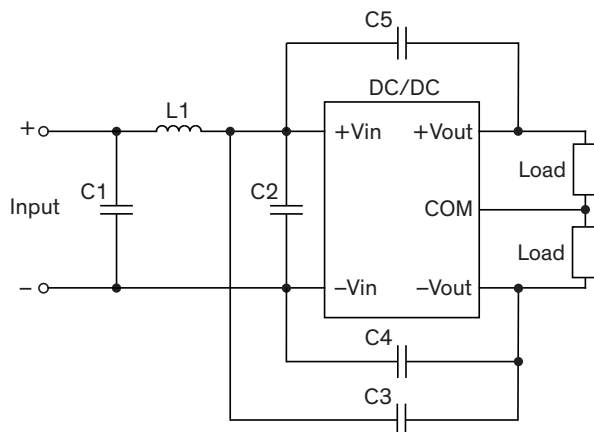
#### Single output models



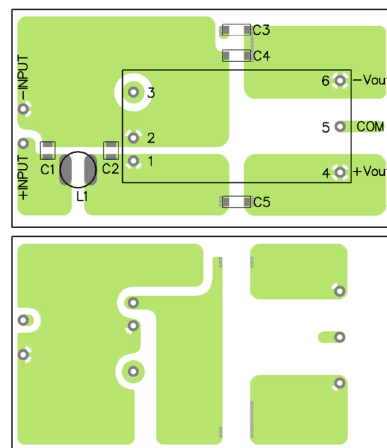
#### PCB layout suggestion



#### Dual output models



#### PCB layout suggestion



### Suggested components to comply with EN 55032 Conducted and Radiated Emissions Class A limits

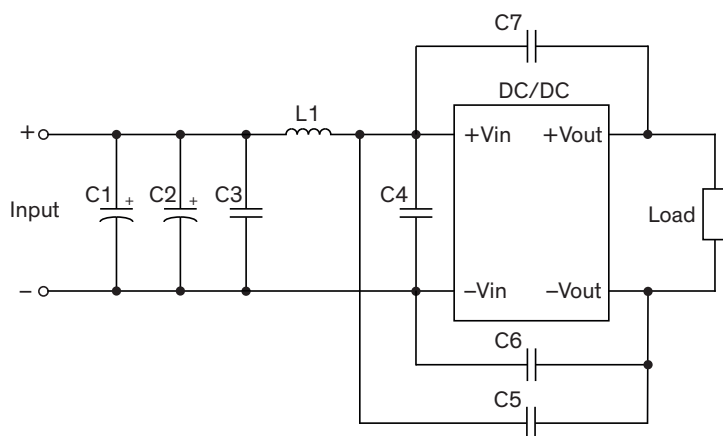
Model	C1, C2	C3, C4, C5	L1
TEN 40-24xxWIR	10 $\mu$ F / 50 V 1210 MLCC	680 pF / 3 KV 1808 MLCC	2.2 $\mu$ H TCK-097
TEN 40-48xxWIR	4.7 $\mu$ F / 100 V 1210 MLCC	680 pF / 3 KV 1808 MLCC	12 $\mu$ H TCK-112

TCK-097 datasheet: [www.tracopower.com/overview/tck-097](http://www.tracopower.com/overview/tck-097)

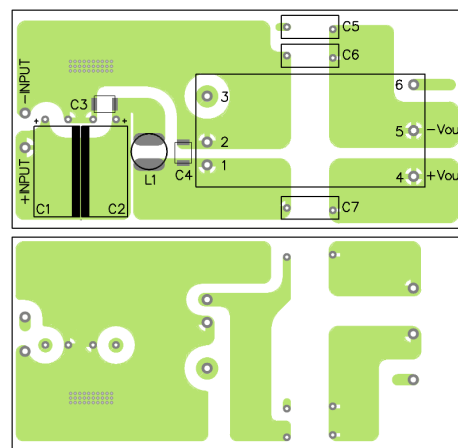
TCK-112 datasheet: [www.tracopower.com/overview/tck-112](http://www.tracopower.com/overview/tck-112)

### Suggested filter to comply with EN 55032 Conducted and Radiated Emissions Class A limits (72 Vin models)

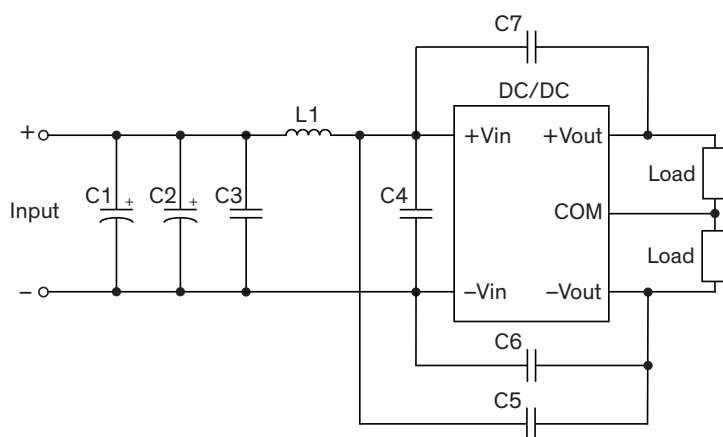
#### Single output models



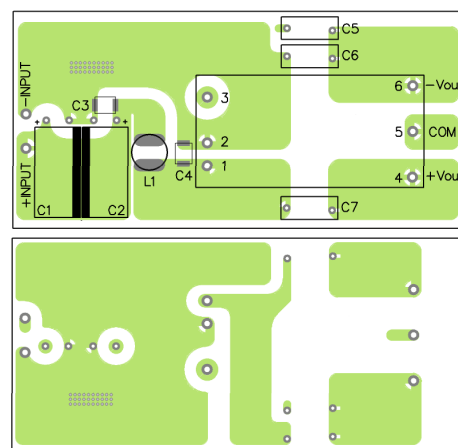
#### PCB layout suggestion



#### Dual output models



#### PCB layout suggestion



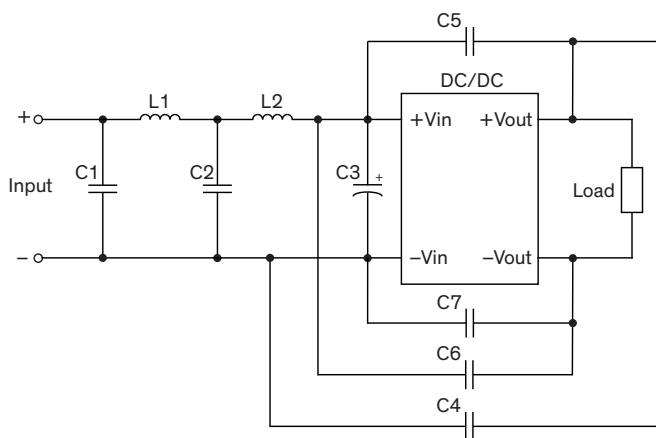
### Suggested components to comply with EN 55032 Conducted and Radiated Emissions Class A limits

Model	C1, C2	C3, C4	C5, C6, C7	L1
TEN 40-72xxWIR	33 $\mu$ F / 250 V Al. Cap. (lie down) Cheami-con KXJ	1 $\mu$ F / 250 V 1812 MLCC	1000 pF TDK CD series, Y1	22 $\mu$ H TCK-098

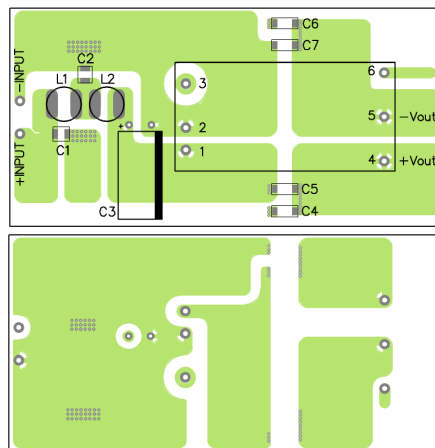
TCK-098 datasheet: [www.tracopower.com/overview/tck-098](http://www.tracopower.com/overview/tck-098)

### Suggested filter to comply with EN 55032 Conducted and Radiated Emissions Class B limits (24 & 48 Vin models)

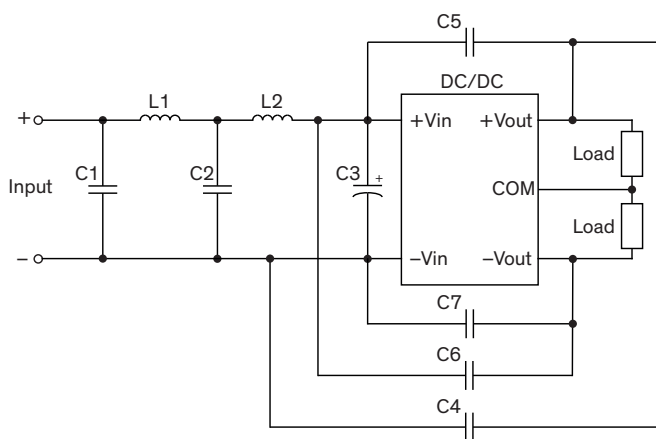
#### Single output models



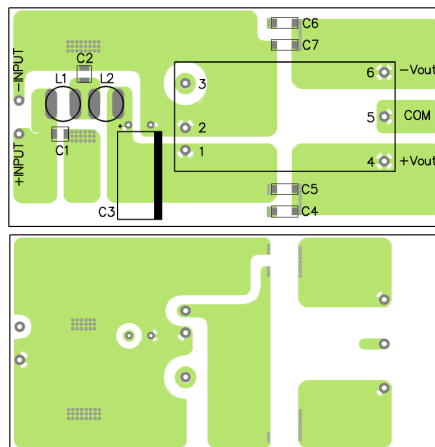
#### PCB layout suggestion



#### Dual output models



#### PCB layout suggestion



### Suggested components to comply with EN 55032 Conducted and Radiated Emissions Class B limits

Model	C1, C2	C3	C4, C6	C5, C7	L1, L2
TEN 40-24xxWIR	10 $\mu$ F / 50 V 1210 MLCC	82 $\mu$ F / 100 V Al. Cap. (lie down) Chemi-con KY	1000 pF / 3 kV 1808 MLCC	2200 pF / 3 kV 1808 MLCC	3.3 $\mu$ H TCK-102
TEN 40-48xxWIR	4.7 $\mu$ F / 100 V 1210 MLCC	82 $\mu$ F / 100 V Al. Cap. (lie down) Chemi-con KY	1000 pF / 3 kV 1808 MLCC	2200 pF / 3 kV 1808 MLCC	12 $\mu$ H TCK-112

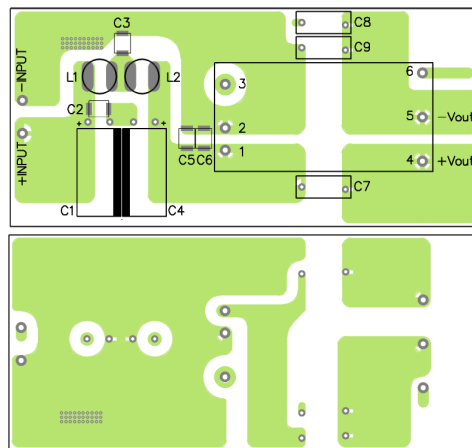
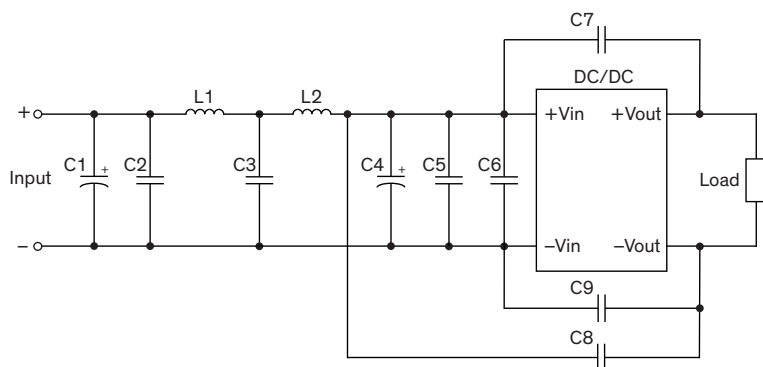
TCK-102 datasheet: [www.tracopower.com/overview/tck-102](http://www.tracopower.com/overview/tck-102)

TCK-112 datasheet: [www.tracopower.com/overview/tck-112](http://www.tracopower.com/overview/tck-112)

### Suggested filter to comply with EN 55032 Conducted and Radiated Emissions Class B limits (72 Vin models)

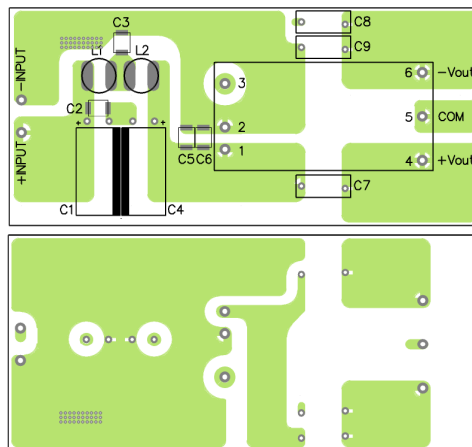
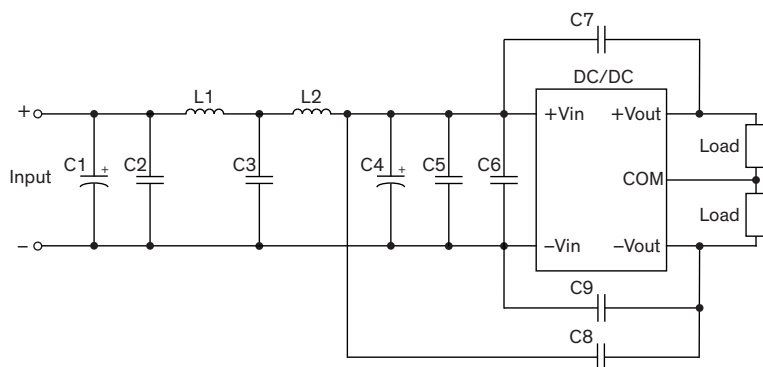
#### Single output models

#### PCB layout suggestion



#### Dual output models

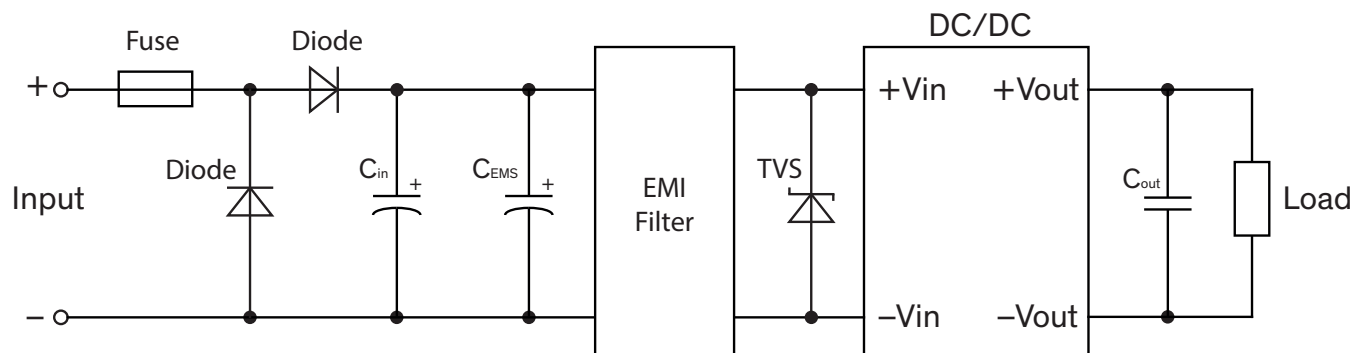
#### PCB layout suggestion



### Suggested components to comply with EN 55032 Conducted and Radiated Emissions Class B limits

Model	C1, C4	C2, C3, C5, C6	C7, C8, C9	L1, L2
TEN 40-72xxWIR	33 $\mu$ F / 250 V Al. Cap. (lie down) Chemi-con KXJ	1 $\mu$ F / 250 V 1812 MLCC	2200 pF TDK CD series, Y1	22 $\mu$ H TCK-098

TCK-098 datasheet: [www.tracopower.com/overview/tck-098](http://www.tracopower.com/overview/tck-098)

**Suggested filter to comply with EN 50155 Immunity**

**Suggested components to comply with EN 50155 Immunity**

Model	Fuse	Diodes	C <sub>EMS</sub>	TVS	C <sub>OUT</sub>
<b>TEN 40-24xxWIR</b>	8 A Fast-Acting	200 V 1 – 1.5 × Fuse rating	Nippon chemi-con KY series 220 µF / 100 V	SMDJ58A 58 V / 3000 W peak pulse power	0.1 µF / 50 V X7R MLCC
<b>TEN 40-48xxWIR</b>	4 A Slow-Blow	200 V 1 – 1.5 × Fuse rating	Nippon chemi-con KY series 220 µF / 100 V	SMDJ120A 120 V / 3000 W peak pulse power	0.1 µF / 50 V X7R MLCC
<b>TEN 40-72xxWIR</b>	3.15 A Slow-Blow	200 V 1 – 1.5 × Fuse rating	Nippon chemi-con KXJ series 150 µF / 200 V 2 pcs in parallel	SMDJ90A 90 V / 3000 W peak pulse power 2 pcs in series	0.1 µF / 50 V X7R MLCC

**Suggested components to comply with interruptions and supply change over**

Input Voltage	24 VDC	48 VDC	72 VDC	96 VDC	110 VDC
C <sub>in min</sub> 10 ms Hold up	2500 µF	610 µF	280 µF	160 µF	120 µF
C <sub>in min</sub> 30 ms Hold up	7300 µF	1810 µF	830 µF	470 µF	360 µF