



Data Sheet: R41 PSFB

R41 PSFB Series – FWCT & Current Doubler

Key features & specifications

TOPOLOGY

PSFB – FWCT / Current Doubler

POWER

560–880 W (catalog groups)

INPUT

20–35 · 43–53 · 350–410 V

OUTPUTS

7–16 V / up to 80 A

FREQ.

125–200 kHz

PACKAGE

40.6 × 49.3 × 15.2 mm
(R41)

OUTPUT INDUCTORS

PQI26 series matched

TURNS

Integer 1T–40T

R41 planar transformers paired with PQI26 output inductors for phase-shift full-bridge current-doubler and FWCT converters – each group below lists transformer and output-inductor recommendations together.

Part number & parameter tables

All values at $T_{amb} = 25\text{ }^{\circ}\text{C}$ unless noted. TP = thermal pad, TH = thru-hole option.

Vin 20–35 V · 12 V / 60 A · 720 W · 200 kHz

Champs PN	Vin min	Vin max	Vout	Iout (A)	Pout (W)	Freq (kHz)	Ton (μs)	Half duty	Full duty
R41R6-0304-LF-TP-TH	20	35	12	60	720	200	2.32	46.4%	92.7%
R41R6-0203-LF-TP-TH	20	35	12	60	720	200	2.06	41.2%	84.2%

Vin 20–35 V · 12 V / 60 A · 720 W · 200 kHz — output inductor

Inductor PN	L (μH)	Toff max (μs)	Vpk sec (V)	Isec pk (A)	Ipri pk (A)	Isec rms (A)	Ripple (% Io)	Core loss (W)	Cu loss (W)
PQI26-3R-40-HX-TH	3.0	3.68	46.7	37.4	53	34.8	24.5	<1.0	5.0

Vin 43–53 V · 7 V / 80 A · 560 W · 125 kHz

Champs PN	Vin min	Vin max	Vout	Iout (A)	Pout (W)	Freq (kHz)	Ton (μs)	Half duty	Full duty
R41-0502-LF-TP-TH	43	53	7.0	80	560	125	3.35	41.9%	83.8%

Vin 43–53 V · 7 V / 80 A · 560 W · 125 kHz — output inductor

Inductor PN	L (μH)	Toff max (μs)	Vpk sec (V)	Isec pk (A)	Ipri pk (A)	Isec rms (A)	Ripple (% Io)	Core loss (W)	Cu loss (W)
PQI26-1R4-HX-TH	1.4	5.28	21.2	53.8	23.8	50	33	<1.0	2.8

Vin 350–410 V · 16 V / 55 A · 880 W · 125 kHz

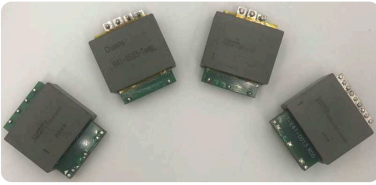
Champs PN	Vin min	Vin max	Vout	Iout (A)	Pout (W)	Freq (kHz)	Ton (μs)	Half duty	Full duty
R41-180101-TP-TH	350	410	16.0	55	880	125	3.39	42.4%	84.8%

Vin 350–410 V · 16 V / 55 A · 880 W · 125 kHz — output inductor

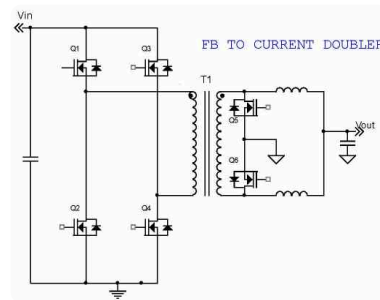
Inductor PN	L (μH)	Toff max (μs)	Vpk sec (V)	Isec pk (A)	Ipri pk (A)	Isec rms (A)	Ripple (% Io)	Core loss (W)	Cu loss (W)
PQI26-4R7-36-HX-TH	4.7	5.10	45.6	36.4	5.7	32	30.9	3.0	2.0

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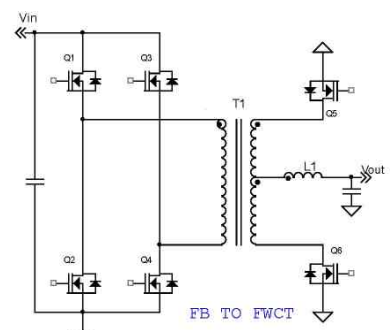
Mechanical outline & options



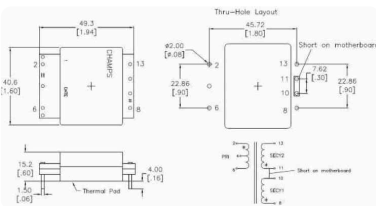
R41 series product family



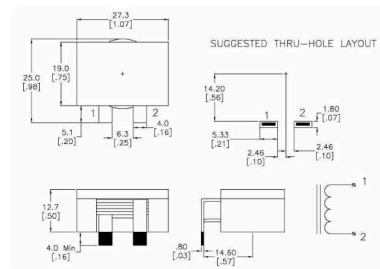
FB → current-doubler circuit



FB → FWCT circuit



R41-180101 mechanical drawing & thru-hole layout



PQI26 output inductor mechanical drawing

General notes

- Proven in actual PSFB to current-doubler and FWCT configured DC-DC converter applications.
- In other applications the R41 PSFB series can operate over a wider input range or be configured for different input/output voltages and rated power. Increased height allows increased output power through higher current capability.
- Adding effective thermal conduction with thermal pads, in combination with heat sinks and clamps, allows higher power throughput at rated ambient and hot-spot temperatures.
- Package: 40.6 mm wide × 49.3 mm long × 15.2 mm high.
- Multilayer PCB winding optimization for lowest AC resistance and proximity-loss effect.
- Integer turns from 1T to 40T are available; windings can be used as primary or secondary. The mechanical outline allows a “flex” arrangement — contact the factory for any power-topology design.
- All designs can be supplied with planar windings embedded in the PCB of the converter main module; heatsink, installed power components, SMT assembly and module integration are also available.
- A wide variety of part numbers, designs and turns ratios is kept in stock — if not listed, contact us.
- Options: surface mount, thru-hole, pad-to-pad, thermal pad and embedded planar windings.

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