

USB-C charger & adapter board selection guide

Multi-port solutions



Power rating [W]	45	65	100	120	120
Name	VD_USB_PAG_45W_COOL-GAN	REF_65W_2C_GAN_PAG1	REF_100W_2C_SSFB_PAG1	REF_CCG7DC_120W_2C	REF_CCG7SC_120W_3C
Topology	QR flyback	QR flyback + buck converters	Single-stage PFC flyback + buck converters	Boost PFC + Hybrid flyback + buck converters	Boost PFC + Hybrid flyback + buck converters
Primary start-up controller	EZ-PD™ PAG1P	EZ-PD™ PAG1P	EZ-PD™ PAG1P	XDP™ XDPS2221	XDP™ XDPS2221
Synchronous rectification controller	EZ-PD™ PAG1S	EZ-PD™ PAG1S	EZ-PD™ PAG1S	3rd party	3rd party
Protocol controller	EZ-PD™ CCG7DC	EZ-PD™ CCG7DC	EZ-PD™ CCG7DC	EZ-PD™ CCG7DC	EZ-PD™ CCG7SC
High-voltage PWM switch	CoolMOS™	CoolGaN™	CoolMOS™	CoolGaN™	CoolGaN™
Medium-voltage SR switch	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™
V _{BUS} switch (load switch)	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™
Buck switch (dual-port only)	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™
Uncased size [mm x mm x mm]	63 x 32 x 25	55 x 27 x 33	60 x 60 x 28	180.16 x 44.71 x 25	180.16 x 44.71 x 25
Uncased power density [W/in ³]	14.6	21.34	16.25	11.39	11.39
Single port full-load efficiency (%) @ 115V _{AC} /230V _{AC}	(20 V/2.25 A = 45 W) 91.09 %/90.9 %	(20 V/3.25 A = 65 W) 92.9 %/93.15 %	(20 V/5 A = 100 W) 87.25 %/89.09 %	(20 V/5 A = 100 W) 93.38 %/94.84 %	(20 V/5 A = 100 W) 93.38 %/94.84 %
Dual-port full-load efficiency (%) @ 115 V _{AC} /230 V _{AC}	(9 V/2.5 A + 9 V 2.5 A = 45 W) 88.1 %/87.025 %	(9 V 2.22 A + 20 V 2.25 A = 65 W) 92.1 %/92.58 %	(20 V/2.5 A + 20 V/2.5 A = 100 W) 86.5 %/88.5 %	(20 V/2 A + 20 V/2 A+20 V/2 A = 120 W) 92.00 %/93.15 %	(20 V/2 A + 20 V/2 A+20 V/2 A = 120 W) 92.00 %/93.15 %
CoC tier 2 & DoE level VI compliance	✓	✓	✓	✓	

For more information, please visit:

www.infineon.com/USB-PD

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Single-port solutions



Power rating [W]	18	20	33	45	65	65	65
Name	VD_USB_PAG_18W_ADAPTER	VD_USB_PAG_20W_ADAPTER	VD_USB_PAG_33W_ADAPTER	VD_USB_PAG_45W_COOLGAN	VD_USB_PAG_65W_COOLGAN	DEMO_XDPS2201_65W1	REF_65W_HFACF_PAG2*
Topology	QR flyback	QR flyback	QR flyback	QR flyback	QR flyback	Hybrid flyback	ACF flyback
Primary start-up controller	EZ-PD™ PAG1P	EZ-PD™ PAG1P	EZ-PD™ PAG1P	EZ-PD™ PAG1P	EZ-PD™ PAG1P	XDP™ XDPS2201	EZ-PD™ PAG2P
Synchronous rectification controller	EZ-PD™ PAG1S	EZ-PD™ PAG1S	EZ-PD™ PAG1S	EZ-PD™ PAG1S	EZ-PD™ PAG1S	3rd party	EZ-PD™ PAG2S
Protocol controller							
High-voltage PWM switch	CoolMOS™	CoolMOS™	CoolMOS™	CoolGaN™	CoolGaN™	CoolMOS™	CoolGaN™
Medium-voltage SR switch	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™
V _{BUS} switch (load switch)	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™	OptiMOS™
Uncased size in [mm x mm x mm]	55 x 36 x 21	55 x 36 x 21	33 x 36 x 23	39 x 35 x 30	52 x 42 x 22	37 x 43 x 19	35 x 31.5 x 31.5
Uncased power density [W/in ³]	7.8	7.8	7.76	17.8	22.16	31	31
Full-load efficiency (%) @ 115 V _{AC} /230 V _{AC}	(11 V/1.64 A = 18 W) 89.23 %/89.1 %	(11 V/2.2 A = 20 W) 89 %/88.6 %	(11 V/3 A = 33 W) 90.54 %/90.19 %	(20 V/2.25 A = 45 W) 91.85 %/91.15 %	20 V/3.25 A 91.09 %/91.71 %	20 V/3.25 A 93.5 %/93.8 %	20 V/3.25 A 93.5 %/94.5 %
CoC tier 2 & DoE level VI compliance	✓	✓	✓	✓	✓	✓	✓
Standby power @ 230 V _{AC} [mW]	23	26	25	28	43	60	29
Feedback loop	Pulse edge transformer	Pulse edge transformer	Pulse edge transformer	Pulse edge transformer	Pulse edge transformer	Opto coupler	Pulse edge transformer
Programmable USB-PD protocol functionality	✓	✓	✓	✓	✓	✓	✓
USB-PD PPS feature	✓	✓	✓	✓	✓	✓	✓

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Single-port solutions



Power rating [W]	140	240	240
Name	REF_140W_HFB_PAG2S	EVAL_XDPS2222_240W1	REF_XDPS2222_240W1
Topology	Hybrid flyback combo	Hybrid flyback	Hybrid flyback
Primary start-up controller	XDP™ XDPS2221	XDP™ XDPS2222	XDP™ XDPS2222
Synchronous rectification controller	EZ-PD™ PAG2S-PS	3rd party	3rd party
Protocol controller		EZ-PD™ CCG3PA	EZ-PD™ CCG3PA
High-voltage PWM switch	CoolGaN™	CoolGaN™	CoolGaN™
Medium-voltage SR switch	OptiMOS™	OptiMOS™	OptiMOS™
V _{BUS} switch (load switch)	OptiMOS™	OptiMOS™	OptiMOS™
Uncased size in [mm x mm x mm]	117.5 x 38.5 x 24	200 x 65 x 24	75 x 70 x 30
Uncased power density [W/in ³]	21.13	12.7	25
Full-load efficiency (%) @ 115 V _{AC} /230 V _{AC}	28 V/5 A, 93.51 %/94.92 %	48 V/5 A = 240 W, 93.01 %/94.92 %	(48 V/5 A = 240 W), 94.82% (@115 V _{AC}) / 95.91% (@230 V _{AC})
CoC tier 2 & DoE level VI compliance	✓	✓	✓
Standby power @ 230 V _{AC} [mW]	72	79	190
Feedback loop	Opto coupler	Opto coupler	Opto coupler
Programmable USB-PD protocol functionality	✓	✓	✓



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