



Delta DC Fan Product Training ***PWM Fan***

June 2009



PWM?

- What is PWM?
Pulse-width modulation – Using duty cycle to control the RPM (the speed of the fan)
- Why PWM?
 - Low noise
 - Increase fan life
 - Decreased power consumption



Delta PWM Fan

- PWM Fan - a 4 wire fan, positive (+), negative (-), tach output (F00) and PWM functions
- General lead time: 5 weeks production plus transit time
- Where is the opportunity?
 - Fan Tray
 - 1U/2U system
 - Power supply
 - Telecom application



PWM Fans List

MODEL				Rated Voltage	Operating Voltage Range	Input Current	Input Power	Speed		PWM Frequency	PWM Input Voltage	Maximum Air Flow		Maximum Air		Noise
PART NO.	Size	REV.	Function	VDC	VDC	Amp.	Watt	R.P.M.	R.P.M.	HZ	VDC	m3/min	CFM	mmH2O	IN H2O	dB-A
AFC1212D-F00	120X120X25.4	00	F00 & PWM	10.2 ~ 13.8	12	0.53	6.36	3400	0	20K	0 ~ 20	3.203	113.1	10.920	0.430	46.5
AFB1212HHE-TP02	120X120X38	00	F00 & PWM	10.8 ~ 13.2	12	0.4	4.8	2900	0	25K	0 ~ 15	3.4	120.1	9.000	0.354	44.0
PFC1212DE-F00	120X120X38	02	F00 & PWM	8~13.2	12	4	48	5500	1550	25K	0 ~ 15	7.16	252.85	35.877	1.412	66.5
PFC1224DE-6L52	120X120X38	00	F00 & PWM	14.0 ~ 25.6	24	2	48	5500	0	25K	0 ~ 15	7.16	252.9	35.877	1.412	66.5
QFR1212GHE-SP01	120X120X38	01	F00 & PWM	8 ~ 13.2	12	1.8	21.6	6000	1500	25K	0 ~ 15	5.957	210.38	29.179	1.170	64.0
PFB1248XHE-TP17	120X120X38	00	F00 & PWM	33 ~ 52.8	48	1.6	76.8	7000	0	25K	0 ~ 15	8.691	306.9	55.235	2.175	72.5
AFB1248VHE-TP18	120X120X38	00	F00 & PWM	34.0 ~ 56	48	0.31	14.88	4100	1550±200	20K	0 ~ 10	5.394	190.5	17.635	0.694	55.5
GFB1212VHW-TP05	120X120X76.2	00	F00 & PWM	7.0 ~ 13.2	12	1.7	20.4	3550	0	25K	0 ~ 20	6.238	220.3	15.040	0.592	59.0
GFB1248VHW-TP15	120X120X76.2	00	F00 & PWM	40 ~ 60	48	0.4	20.8	3550/3200	800/800±250	25K	0 ~ 20	6.238	220.3	15.040	0.592	59.0
FFB0412VHN-TP03	40X40X28	00	F00 & PWM	7 ~ 13.2	12	0.6	1.92	9500	0	20K	0 ~ 10	0.447	15.79	12.940	0.509	45.0
PFB0412EH-N-TP06	40X40X28	00	F00 & PWM	10.8 ~ 13.2	12	0.5	6	16000	1600 ~ 2100	25K	0 ~ 20	0.618	21.83	36.334	1.431	54.5
GFB0412SHG-SP31	40X40X48	00	F00 & PWM	10.8 ~ 12.6	12	0.95	11.4	12800/10200	0	25K	0 ~ 20	0.67	23.66	32.306	1.270	59.0
GFC0412DS-TP01	40X40X56	01	F00 & PWM	5.5 ~ 13.2	12	1	12	15300/11300	4400/3000	25K	0 ~ 20	0.864	30.5	43.830	1.726	61.0
AUC0512DB-AF00	50x50x15	01	F00 & PWM	10.8 ~ 13.2	12	0.18	2.16	7400	3000	25K	0 ~ 20	0.572	20.22	7.580	0.299	38.5
AFC0612DB-F00	60x60x15	02	F00 & PWM	8~13.2	12	0.33	3.96	7200	0	20K	0 ~ 20	0.828	29.24	13.120	0.517	47.5
AFB0612DH-TP11	60X60X25.4	00	F00 & PWM	10.8 ~ 13.2	12	0.84	10.08	9000	0	20K	0 ~ 20	1.427	50.4	23.520	0.926	55.0
AFC0612D-SP07	60X60X25.4	00	F00 & PWM	10.8~13.8	12	0.13	1.56	4250	500 ~ 1000	25K	0 ~ 20	0.662	23.38	5.350	0.211	34.0
BFB1248HH-TP21	60X60X32	00	F00 & PWM	36 ~ 60	48	0.25	12	2800	1400	1K	0 ~ 12	1	35.31	25.000	0.984	54.0
AFC0612DE-AF00	60X60X38	01	F00 & PWM	8~13.2	12	1.5	18	12000	0	20K	0 ~ 20	1.89	66.75	44.170	1.739	61.5
FFC0612DE-F00	60X60X38	02	F00 & PWM	7 ~ 13.2	12	0.9	10.8	9000	0	20K	0 ~ 20	1.55	54.79	30.020	1.182	60.0
PFC0612DE-F00	60X60X38	02	F00 & PWM	10.8~13.2	12	1.4	16.8	12000	0	25K	0 ~ 20	1.922	67.85	54.100	2.129	61.5
AFC0712DD-TP10	70X70X20	00	F00 & PWM	8 ~ 13.2	12	0.35	4.2	5000	0	20K	0 ~ 20	1.327	46.86	7.240	0.285	44.3
BCB0812UHE-TP09	75X80X30	00	F00 & PWM	10.8 ~ 12.6	12	2.3	27.6	10800	2000	25K	0 ~ 20	0.854	30.16	93.350	3.675	69.3
EFB0812DB-F00	80X80X15	00	F00 & PWM	7~12.6	12	0.33	3.96	3800	0	20K	0 ~ 20	1.382	48.8	4.350	0.171	41.0
AFB0812SH-TP12	80X80X25.4	00	F00 & PWM	10 ~ 13.2	12	0.3	3.6	4500	400 ~ 1000	88	0 ~ 20	1.574	55.59	9.598	0.380	46.0
AUB0812VH-SP00	80X80X25.4	05	F00 & PWM	10.8~13.2	12	0.19	2.28	3600	500 ~ 1000	25K	0 ~ 20	1.19	42.02	5.510	0.217	39.0
PFC0812DE-SP04	80X80X38	00	F00 & PWM	10.8~13.2	12	2.75	33	9000	0	20K	0 ~ 20	3.754	132.6	51.570	2.030	65.0
PFC0812DE-SP07	80X80X38	00	F00 & PWM	7~13.2	12	0.8	9.6	6000	1000	25K	0 ~ 20	2.454	86.65	22.733	0.895	54.4
QFR0812DE-F00	80X80X38	01	F00 & PWM	10.8 ~ 13.2	12	1.15	13.80	9000	0	25K	0 ~ 20	2.991	105.21	33.910	1.335	60.0
AFC0948DE-TP20	90X90X38	00	F00 & PWM	36 ~ 75	48	0.6	28.8	7500	0	10K	0 ~ 10	4.515	159.4	38.082	1.528	67.0
AFC0912D-AF00	92X92X25.4	00	F00 & PWM	8 ~ 13.2	12	0.75	9	4800	400 ~ 900	20K	0 ~ 20	2.905	102.6	13.350	0.526	53.0
FFC0912DE-SP13	92X92X38	00	F00 & PWM	7.0 ~ 13.2	12	0.88	10.56	5000	650 ~ 1150	24K	0 ~ 20	2.938	103.8	17.290	0.681	55.0
FFC0912DE-TP04	92X92X38	00	F00 & PWM	7.0 ~ 13.2	12	0.8	9.6	4800	0	20K	0 ~ 20	3.12	110.2	16.900	0.665	55.0
QFR0912DE-F00	92X92X38	01	F00 & PWM	8 ~ 13.2	12	1.6	19.2	8300	0	25K	0 ~ 20	3.731	131.76	37.350	1.466	62.0
PFB0948UHE-TP16	92X92X38	00	F00 & PWM	36 ~ 75	48	0.52	24.96	7000	0	10K	0 ~ 10	4.347	153.5	36.790	1.449	64.0
AFB1548VH-TP19	Ø172X25.4	00	F00 & PWM	40 ~ 54.0	48	0.62	29.76	4900	0	20K	0 ~ 10	8.099	285.9	26.300	1.035	63.5
EFB1748DG-TP07	Ø172X50.8	00	F00 & PWM	28.0 ~ 53	48	1.23	59.04	5500	0	20K	0 ~ 20	11.77	415.7	44.990	1.771	63.4
EFB1548VHG-TP14	Ø172X50.8	00	F00 & PWM	36 ~ 60	48	0.49	23.52	4000±10%	0	1K	0 ~ 20	8.56	302.3	23.800	0.937	60.0