Champs Technologies

About Us

Champs Technologies

Formation 1992

Factory Location:
•Taiwan (Main Plant)

•ISO9001-2008 Certification

•UL File #251699

•RoHS Compliant

Champs Technologies

Capabilities

Design & Manufacture Planar Transformers & Inductors. Conventional Wound Magnetics. Inductors: Flat Wire, Helix.

Multi-Layer PCB

Embedded Planar ---
Integrated Directly into PCB

Volume: Typical 1K-100K per Month
No Min Order Requirement
Custom Devices small production runs handled

Power Design: DC-DC Converter, AC-DC Power Supply, Battery Chargers

SMT PCB Component Assembly Including Planar Components

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Linear Technology Supported Ref Designs & Demo Boards

- Forward Active Clamp Topology -- Highest Efficiency. Planar Design.
- Aggressive Interleave planar construction -- lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of Turns Ratios in stock.

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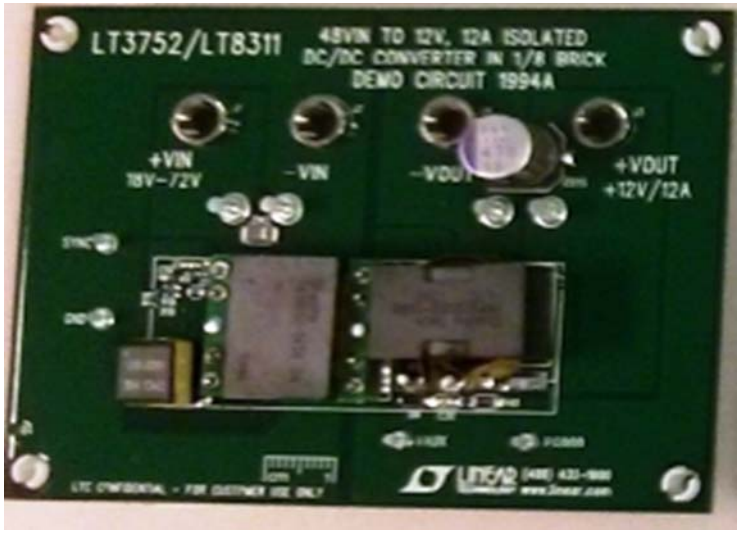
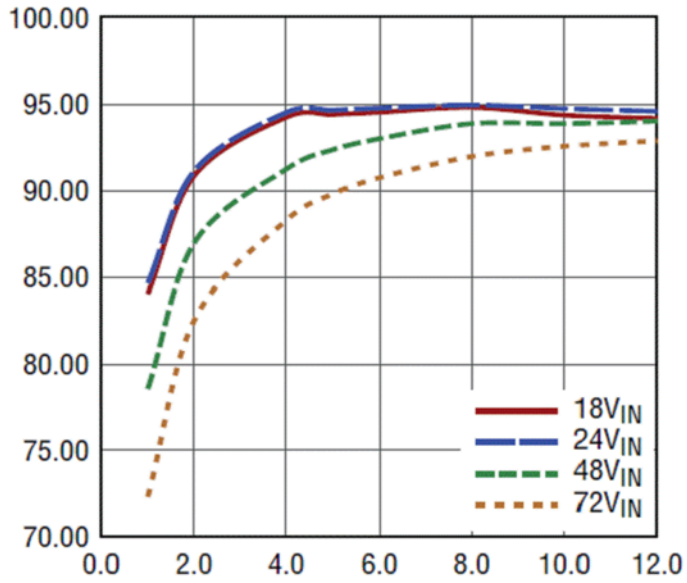
1. Ref Design DC1994A. Input Voltage Range 18-72. See Also: Champs G45 Series Part Numbers and Data Sheets

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
G45AH2-0404-04	18	72	12.0	12.0





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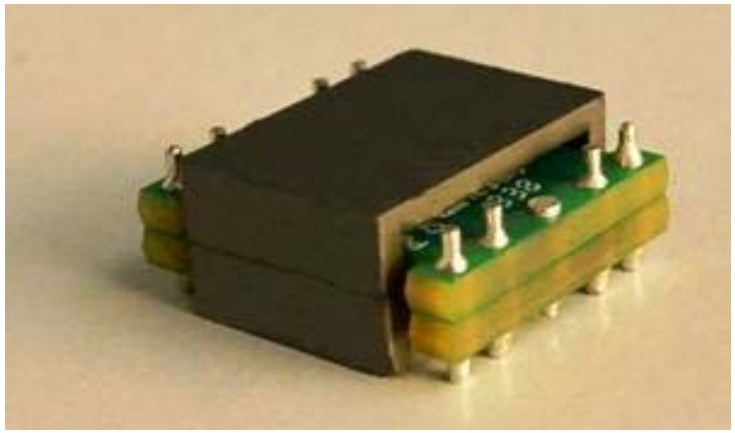
2. Ref Design DC1317A. Input Voltage Range 9-36 || 18-72 || 36-72. Champs G45 Series Part Numbers and Data Sheets



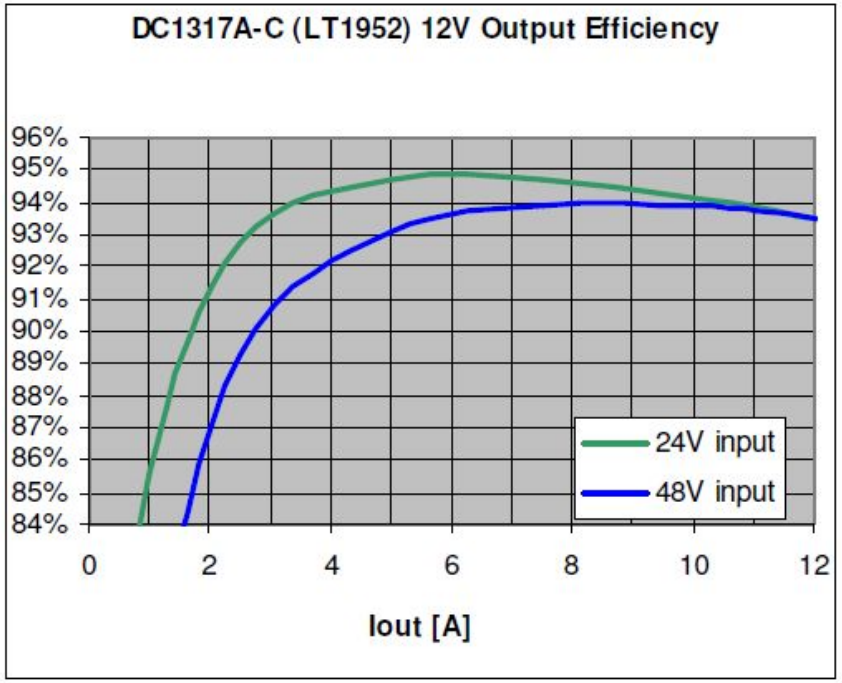


Figure 3. High efficiency of DC1317A-C allows the board to be used in thermally critical applications

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Table I: G45 Series Recommended Part Numbers and Data Sheets

Ref Design	Vin (Min)	Vin (Max)	Vout	Io	Champs PN	Output Inductor
DC1317A-B (5V)	18	72	5	25.0	G45R2-0502-05	
DC1317A-C	18	72	12	8.0	G45R2-0405-05	PQI2050-10-LTC
DC1317A-D	18	72	24	5.0	G45R2-0408-04	PQI2050-27-LTC
DC1317A-E	36	72	5	12.0	G45R2-0702-05	
DC1317A-F	9	36	3.3	20.0	G45R2-0302-07	
DC1317A-F (5V)	9	36	5	20.0	G45R2-0202-05	
DC1317A-G	9	36	12	8.0	G45R2-0306-06	PQI2050-16-LTC
DC1317A-G (15V)	9	36	15	7.0	G45R2-0205-04	PQI2050-27-LTC
DC1317A-G (18V)	9	36	18	6.0	G45R2-0207-05	PQI2050-27-LTC
DC1317A-G (19.5V)	9	32	19.5	5.0	G45R2-0207-05	PQI2050-57-LTC
DC1317A-H	9	36	48	1.5	G45R2-0324-06	PQA2050-220-LTC
DC1317A-H (24V)	9	36	24	3.0	G45R2-0312-06	PQA2050-100-LTC

Table II: G45 Series Equivalent Part Numbers and Data Sheets

Ref Design	Vin (Min)	Vin (Max)	Vout	Io	Champs PN	Output Inductor
DC1317A-A	34	75	3.3	30.0	G45R2-0601-04	PQL2050-0R650-HX
DC1317A-H	9	36	48	1.5	G45R2-0218-04	PQA2050-220-LTC
DC1317A-H (24V)	9	36	24	4.0	G45R2-0209-05	PQA2050-100-LTC

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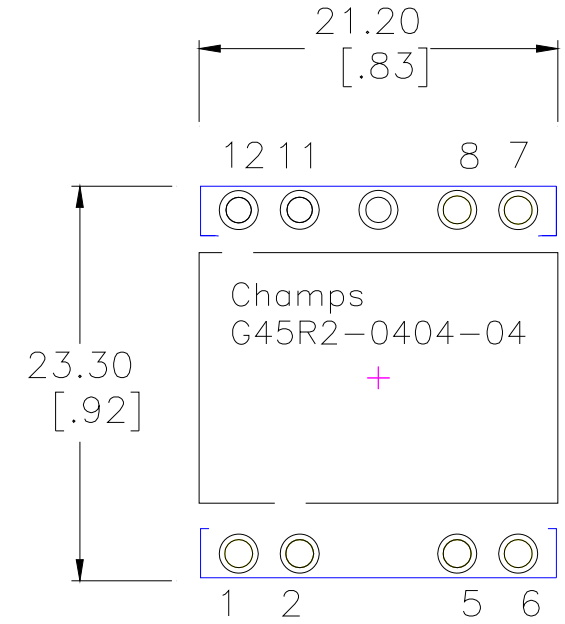
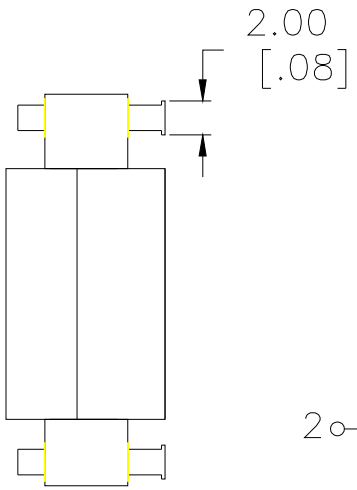
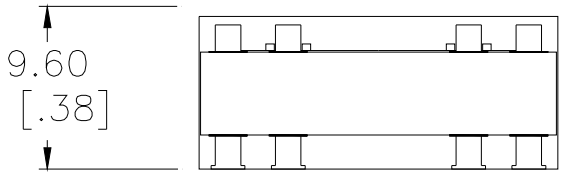
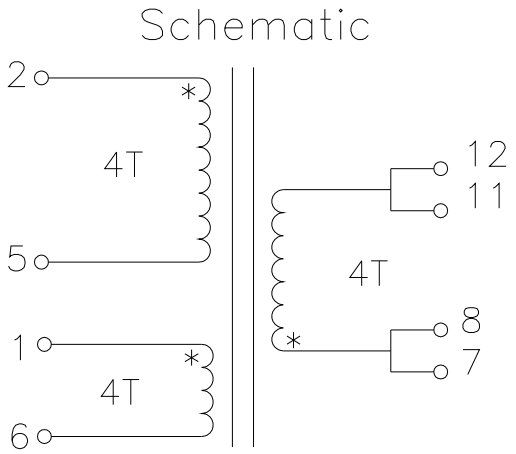
Applications: Telecom









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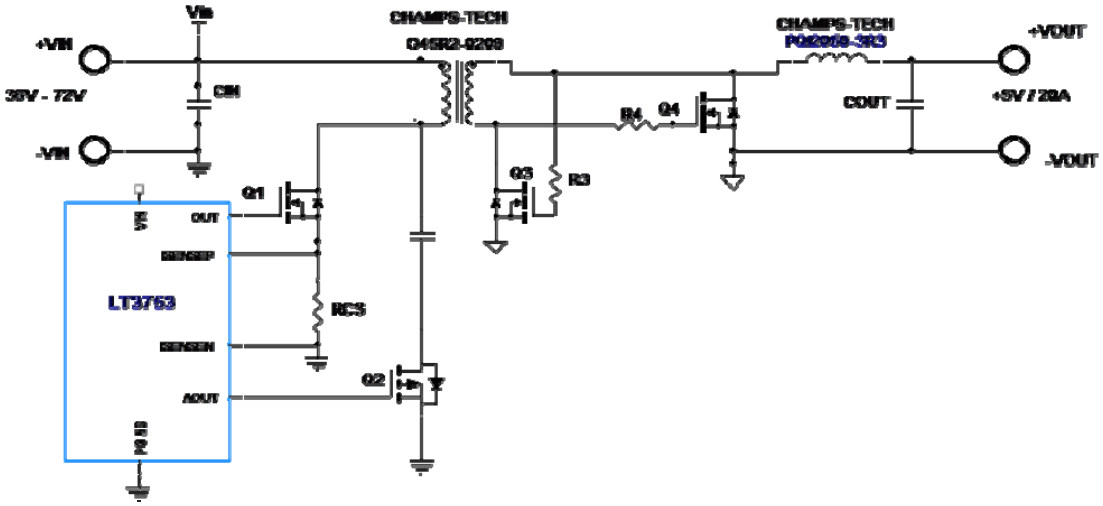
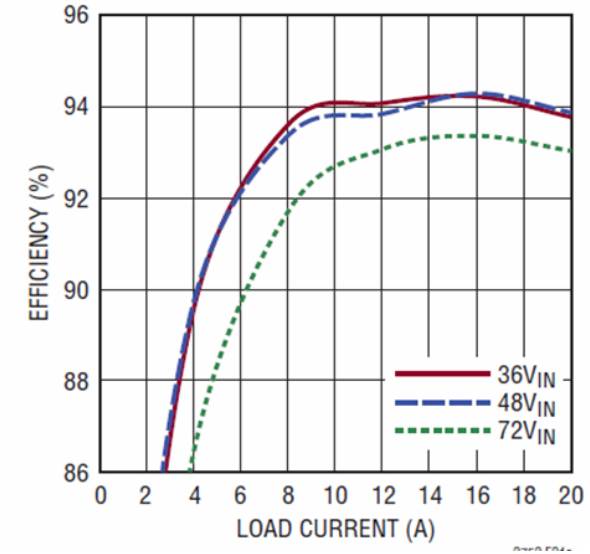
3. Ref Design DC2050A. Input Voltage Range 9-36 || 18-72 || 36-72.

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
G45R2-0209	36	72	5.0	20.0





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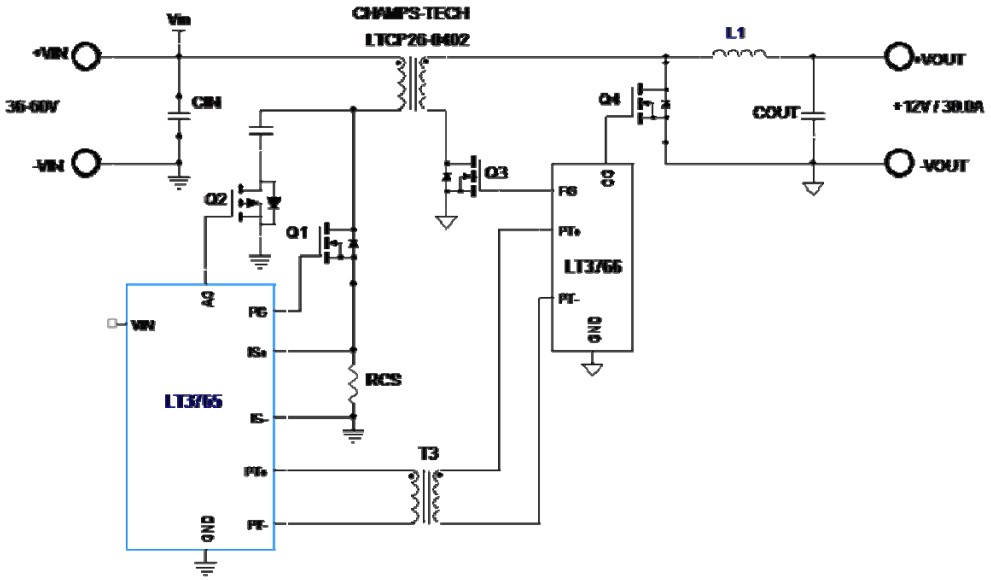
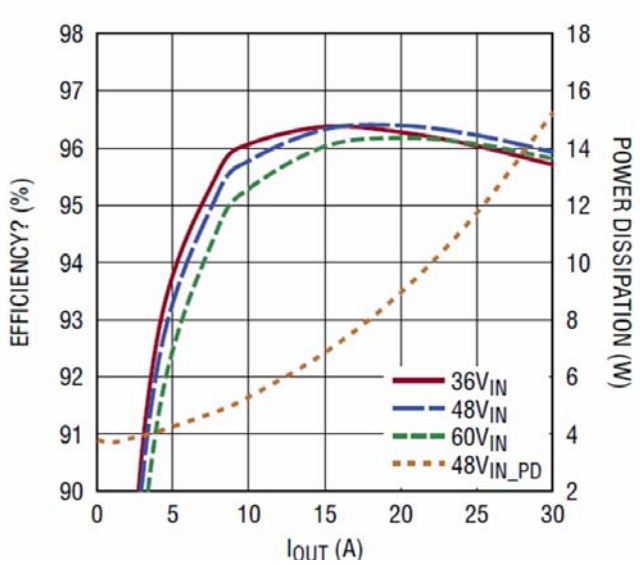
4. Ref Design DC2199A-A. Input Voltage Range 36-60

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
LTCP26-0402	36	60	12	30.0





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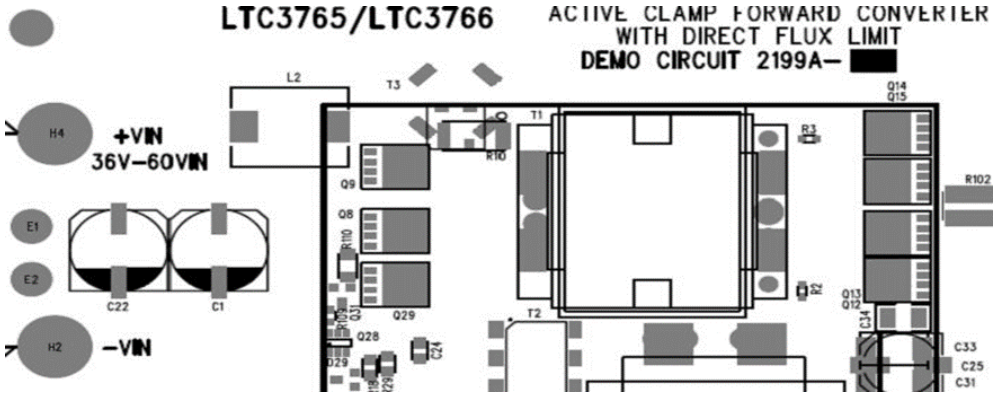
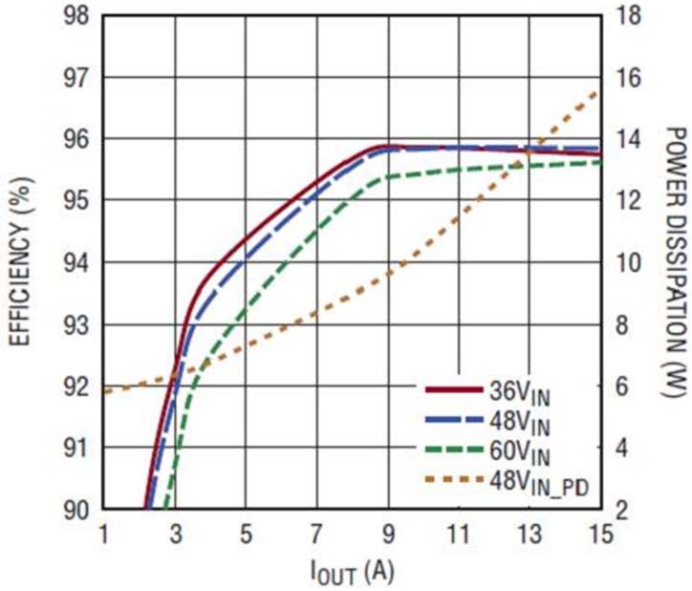
5. Ref Design DC2199A-B. Input Voltage Range 36-60. See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
LTCP26-0404-S02	36	60	24	15.0





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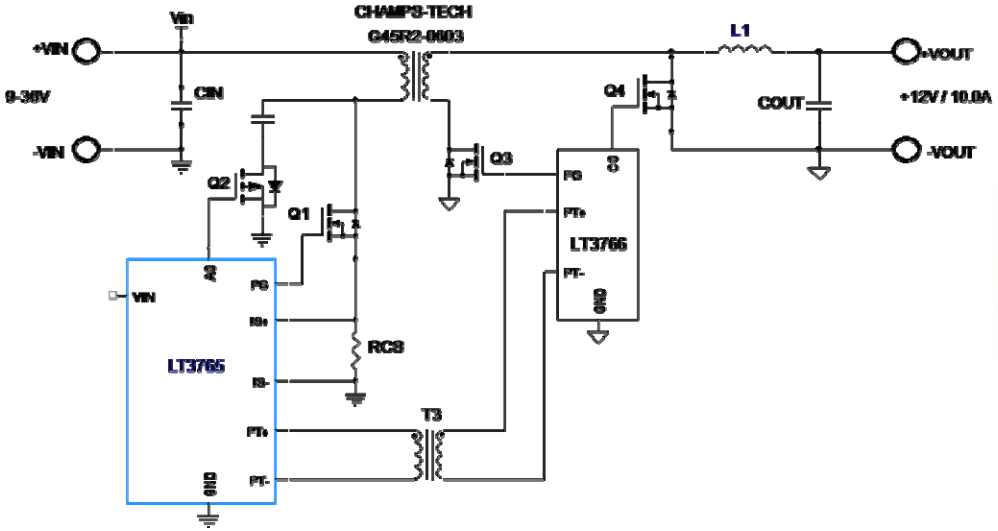
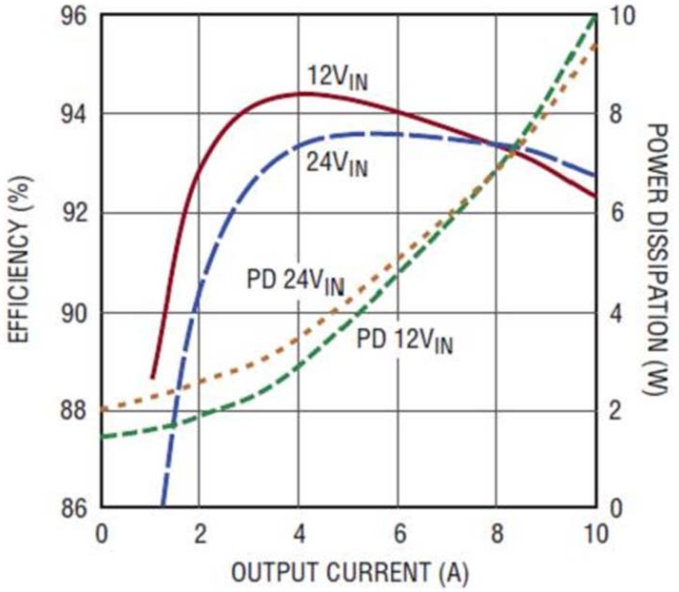
6. Ref Design DC1739B-C. Input Voltage Range 9-36





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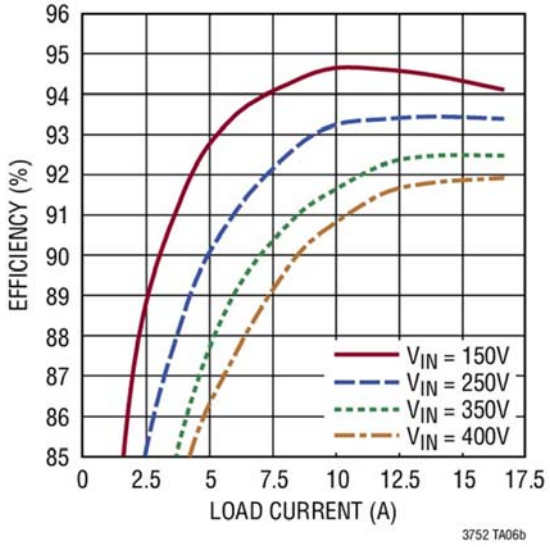
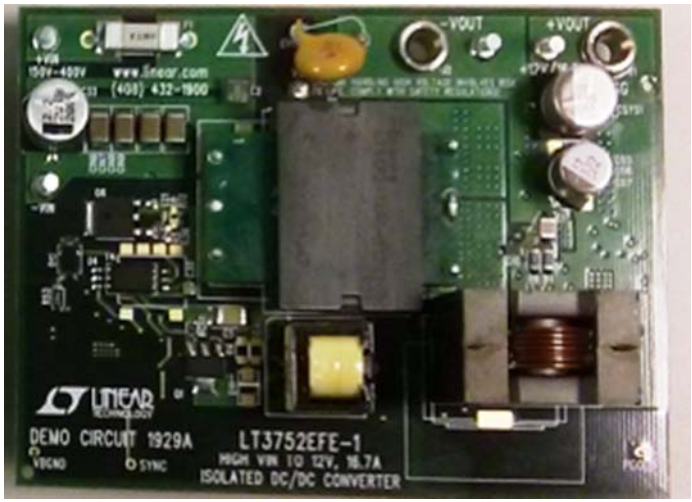
7. Ref Design DC1929A Based. "Off-Line" Input Voltage Range 150-420

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
80R6-1901	180	420	5	40.0
P26R6-1901	180	420	5	30.0
LT80R2-5AC-3125002	150	420	5	30.0
LT80R2-12AC-3124005	180	400	12	16.7
LT80R2-12AC-2224004	180	400	12	16.7
LT80R2-15AC-3115006	180	400	15	12.5
80R2-24AC-2130005	200	400	24	12.5
LT80R2-24AC-3124010	150	400	24	10.0
80R2-AC-3206	300	400	24	10.0
LT80R2-28AC-3222008	180	400	28	10.0
LT80R2-30AC-3208	300	400	30	8.0
LT80R2-24AC-3124010	300	400	57	3.0





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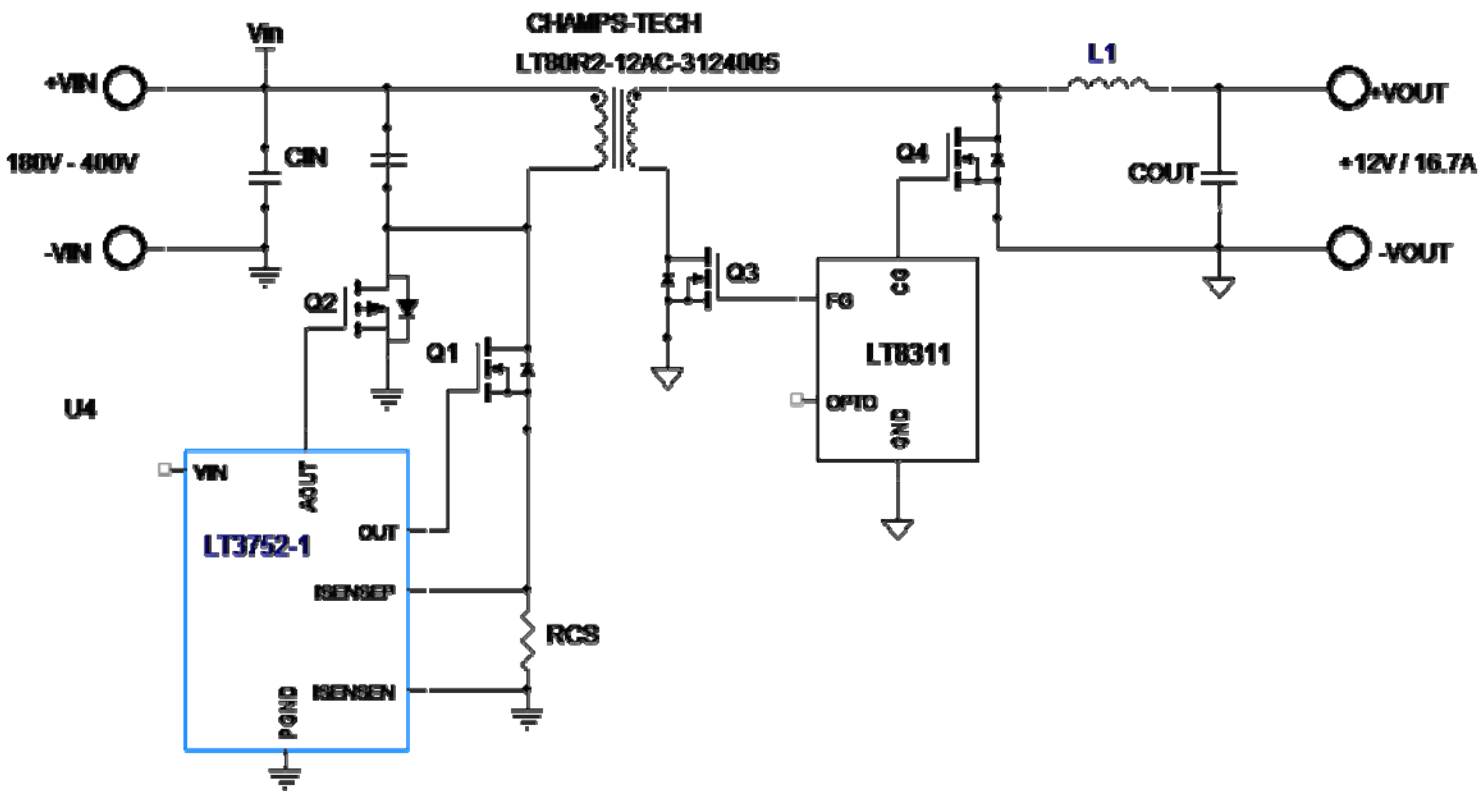

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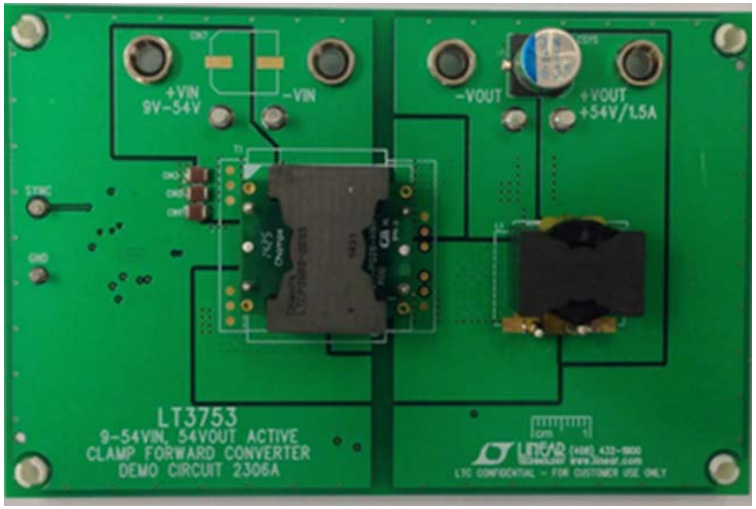
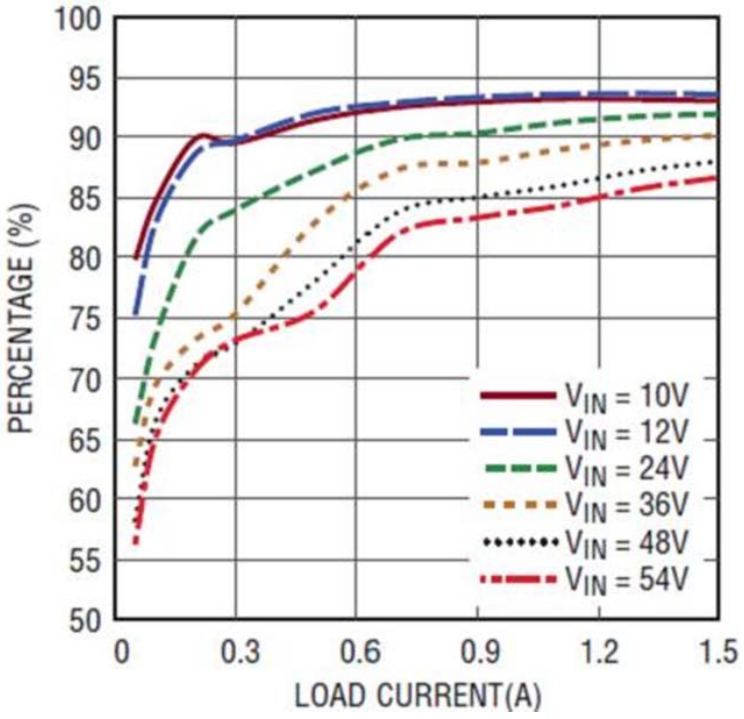
PoE 54Vout Ref Designs 9-15Vin || 20-60Vin || 36-72Vin || 50-150Vin

1. Demo Board 2306A. Input Voltage Range 10-54Vin. Output Voltage 48V or 54V at 1.5A.

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
P26R2-0322-18R0	10	54	54	1.5	PQA2050-330-LTC





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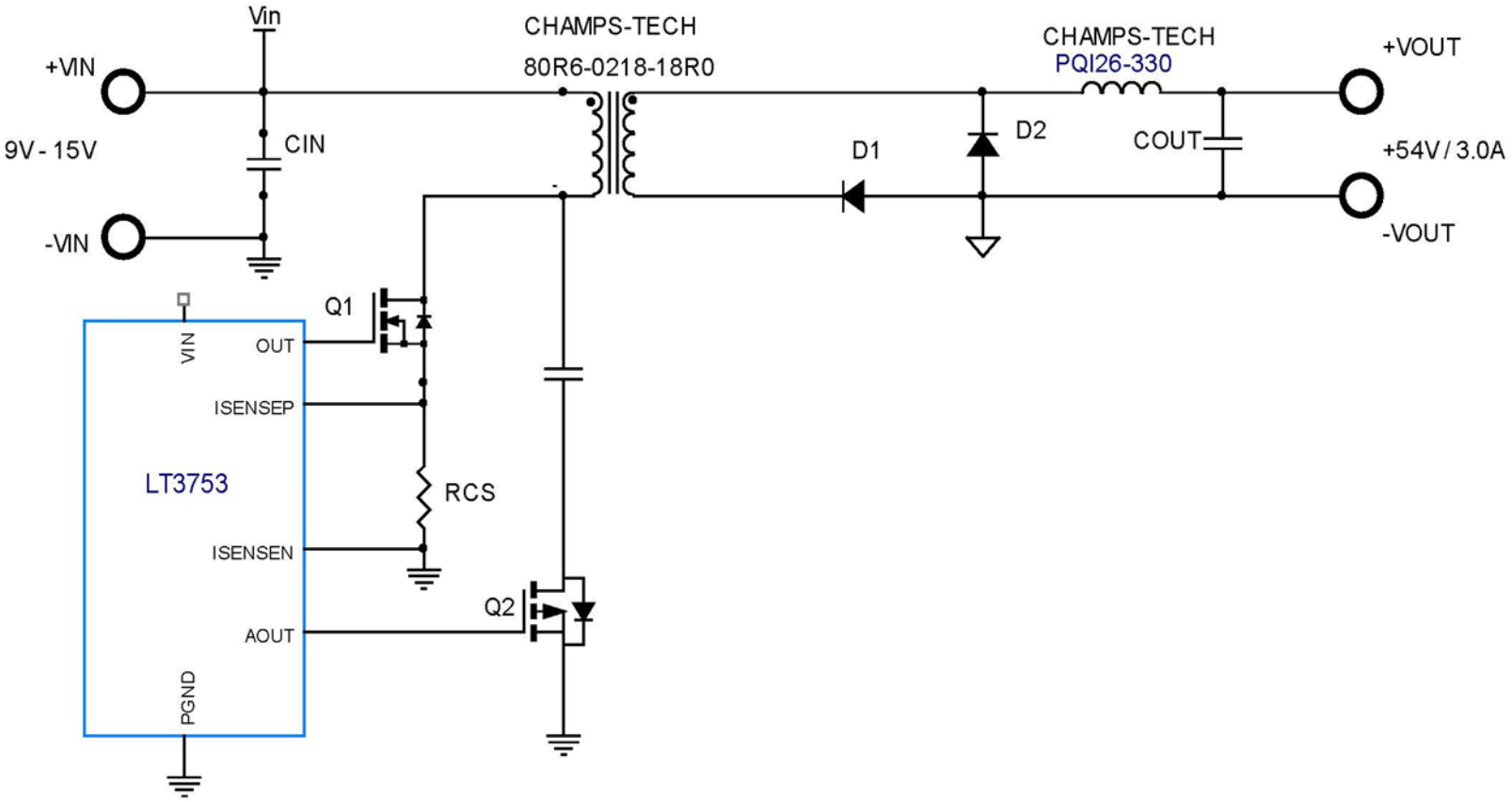
2. Ref Design Input Range 9-15Vin. Output Voltage 54V at 3A.

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
80R6-0218-8R0	9	15	54	3.0	PQI26-330-LTC



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3. Ref Design Input Range 20-60. Output Voltage 54V at 3A. See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
80R6-0416-S03	20	60	54	3.0	PQI26-330-LTC
P26R6-0416-S03	20	60	54	3.0	PQI26-330-LTC

4. Ref Design Input Range 19-29. Output Voltage 48V at 2A. Linear Technology

URL: http://www.linear.com/solutions/5249

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
55R2-8804-xx-A11	19	29	48	2.0	PQA2050-220-LTC

5. Ref Design Input Range 36-72. Output Voltage 54V at 3A. See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
80R2-0614	36	72	54	3.0	PQI26-330-LTC
P26R2-0614	36	72	54	3.0	PQI26-330-LTC

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6. Ref Design Input Range 50-150. Output Voltage 54V at 3A. See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
80R6-0814-S02	50	150	54	3.0	PQI26-330-LTC
P26R6-0814-02-S01	50	150	54	3.0	PQI26-330-LTC

7. Ref Design Input Range 60-170. Output Voltage 54V. See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
P26R6-1016-02-S01	60	170	54	3.0	PQI26-330-LTC
D26R6-1226-03	60	170	54	1.4	PQA2050-330-LTC

8. Ref Design Input Range 85-300. Output Voltage 48V.

Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
P26R6-1814	85	300	48	3.5	PQI26-220-LTC

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Railway Apps: 50-160Vin to 5,12, 24, 54, 80 Vout to 240W

- Forward Active Clamp Topology -- Highest Efficiency. Planar Design.
- Aggressive Interleave planar construction -- lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of Turns Ratios in stock.
- Contact Us for DC-DC Module Design

Contact Us for SM Assembly of all Components for DC-DC Converter

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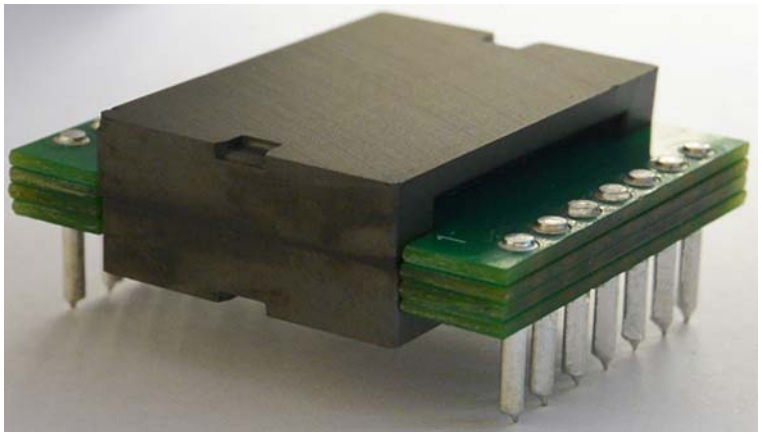
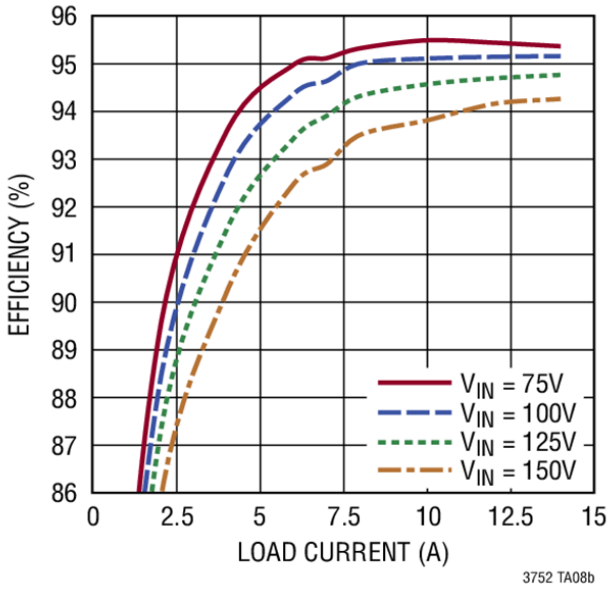
Champs PN	Vin (Min)	Vin (Max)	Vout	Io	Output Inductor
80R6-0806-150R	50	160	24	10.0	PQI26-33R-LTC
P26R6-0806-03-150R	50	160	24	10.0	PQI26-33R-LTC
80R6-0803-150R	50	160	12	20.0	PQI2050-08-HX
P26R6-0803-03-150R	50	150	12	20.0	PQI2050-08-HX
80R6-1302-250R	50	150	5	40.0	PQI2050-2R0-HX
80R6-1402-250R	60	180	5	40	PQI2050-2R0-HX
80R6-0814-S02	50	150	54	3.0	PQI26-330-LTC
P26R6-0814-02-S01	50	150	54	3.0	PQI26-330-LTC
80R6-1020-300R	60	150	80	3.0	PQI26-330-LTC





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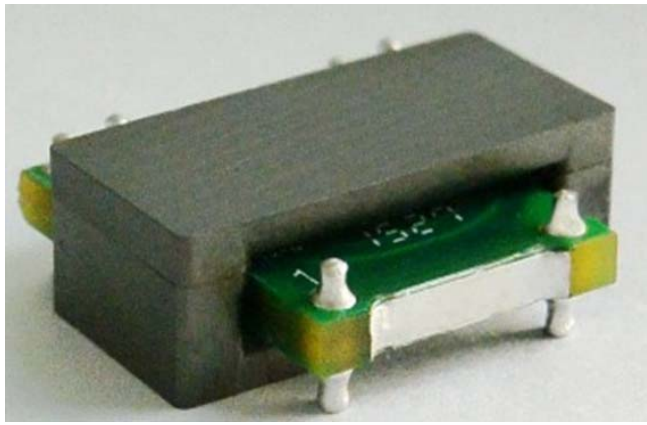
Planar *Flyback* - Low Height. Vin 36-72 & 9-36. Pout 20-40W

- Flyback Topology -- CCM + BCM Options. *Low Profile [7.0 to 8.5mm].*
- Highest Efficiency - -Secondary Side Synchronous FET Driven.
- Aggressive Interleave planar construction -- lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of PNs, Designs and Turns Ratios in stock [Contcat Us if Not Shown in Table].
- Surface Mount, Thru-Hole, Pad-to-Pad Options



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1. Input Voltage Range 36-72. CCM Flyback.

Champs PN	Vin (Min)	Vin (Max)	Vout	Iout (Adc)	Pout (Watts)	Freq (KHz)	Ipk [Rated]	Ipk [Max]	Mode (BCM/CCM)
1825F1-1602-08-45R	36	72	3.3	10.0	33.0	200	3.4	4.8	CCM
20F1-1602-08-45R	36	72	3.3	10.0	33.0	200	3.4	5.5	CCM
1825F1-1202-05-30R	36	72	5.0	7.0	35.0	200	4.0	5.2	CCM
20F1-1202-05-30R	36	72	5.0	7.0	35.0	200	4.0	6.0	CCM
1825F1-1305-06-30R	36	72	12.0	3.0	36.0	200	4.0	5.8	CCM
20F1-1305-06-30R	36	72	12.0	3.0	36.0	200	4.0	6.7	CCM

2. Input Voltage Range 9-36. CCM Flyback

Champs PN	Vin (Min)	Vin (Max)	Vout	Iout (Adc)	Pout (Watts)	Freq (KHz)	Ipk [Rated]	Ipk [Max]	Mode (BCM/CCM)
1825F1-0602-07-6R0	9	36	3.3	7.3	24.0	200	8.0	11.5	CCM
20F1-0602-07-6R0	9	36	3.3	7.3	24.0	200	8.0	13.3	CCM
1825F1-0603-07-6R0	9	36	5.0	5.0	25.0	200	8.3	11.5	CCM
20F1-0603-07-6R0	9	36	5.0	5.0	25.0	200	8.3	13.3	CCM
1825F1-0607-07-6R5	9	36	12.0	2.0	24.0	200	7.8	10.5	CCM
20F1-0607-07-6R5	9	36	12.0	2.0	24.0	200	7.8	12.0	CCM

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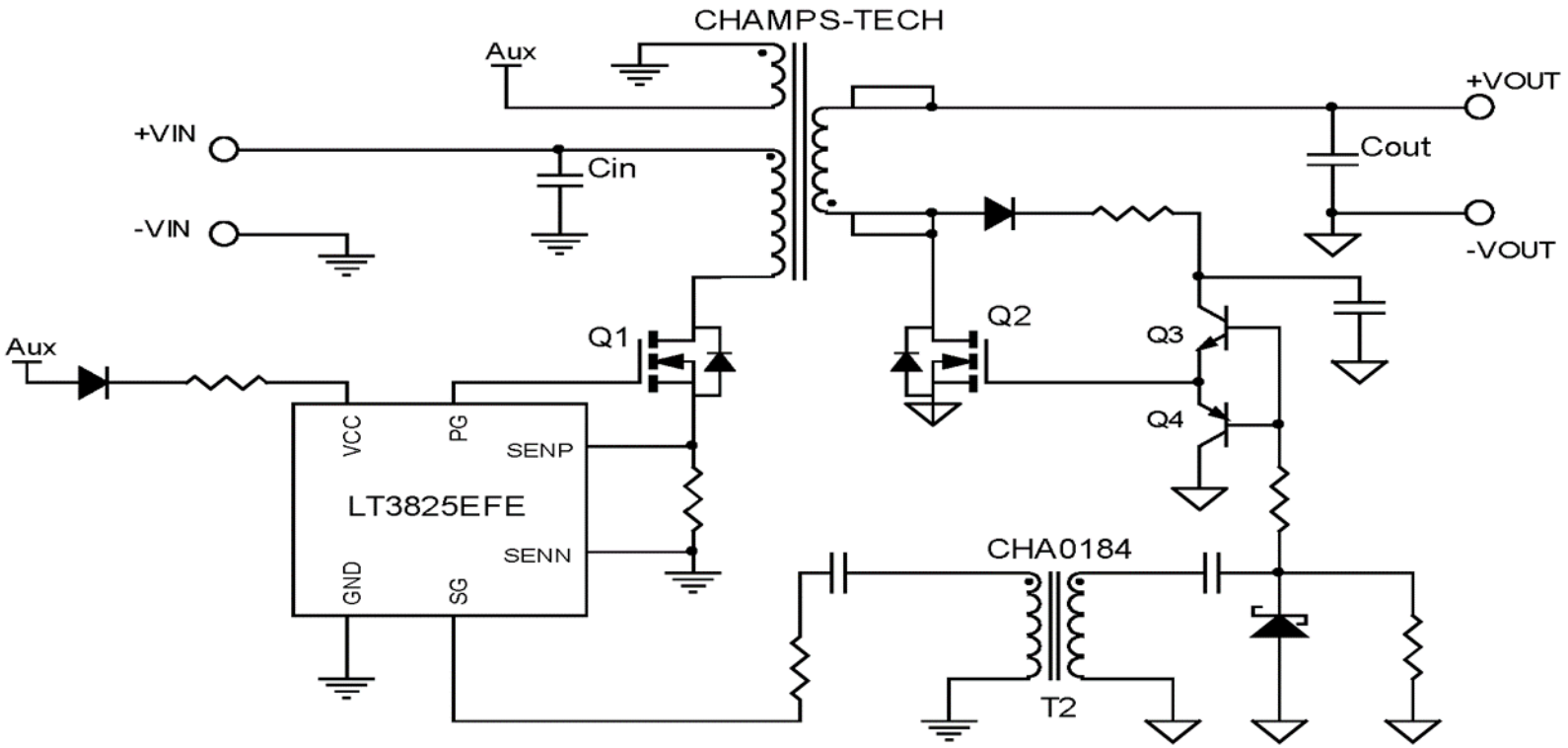
Schematic [Simplified] for CCM Flyback. [Showing LT3825 IC 36-72 Vin for reference].



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3. Input Voltage Range 36-72. BCM Flyback.

Champs PN	Vin (Min)	Vin (Max)	Vout	Iout (Adc)	Pout (Watts)	Freq (KHz)	Ipk [Rated]	Ipk [Max]	Mode (BCM/CCM)
1825F1-1602-08-25R	36	72	3.3	9.0	30.0	160-270	4.6	8.0	BCM
20F1-1602-08-25R	36	72	3.3	9.0	30.0	160-270	4.6	9.2	BCM
1825F1-1202-05-28R	36	72	5.0	6.0	30.0	150-260	4.3	5.6	BCM
20F1-1202-05-28R	36	72	5.0	6.0	30.0	150-260	4.3	6.5	BCM
1825F1-1305-06-25R	36	72	12.0	3.0	36.0	140-240	5.2	6.8	BCM
20F1-1305-06-25R	36	72	12.0	3.0	36.0	140-240	5.2	7.8	BCM

4. Input Voltage Range 9-36. BCM Flyback.

Champs PN	Vin (Min)	Vin (Max)	Vout	Iout (Adc)	Pout (Watts)	Freq (KHz)	Ipk [Rated]	Ipk [Max]	Mode (BCM/CCM)
1825F1-0602-07-4R0	9	36	3.3	7.3	24.0	90-230	12.5	19.5	BCM
20F1-0602-07-4R0	9	36	3.3	7.3	24.0	90-230	12.5	22.0	BCM
1825F1-0603-07-4R0	9	36	5.0	5.0	25.0	90-230	12.8	19.5	BCM
20F1-0603-07-4R0	9	36	5.0	5.0	25.0	90-230	12.8	22.0	BCM
1825F1-0607-07-4R5	9	36	12.0	2.0	24.0	90-230	11.8	17.5	BCM
20F1-0607-07-4R5	9	36	12.0	2.0	24.0	90-230	11.8	20.0	BCM

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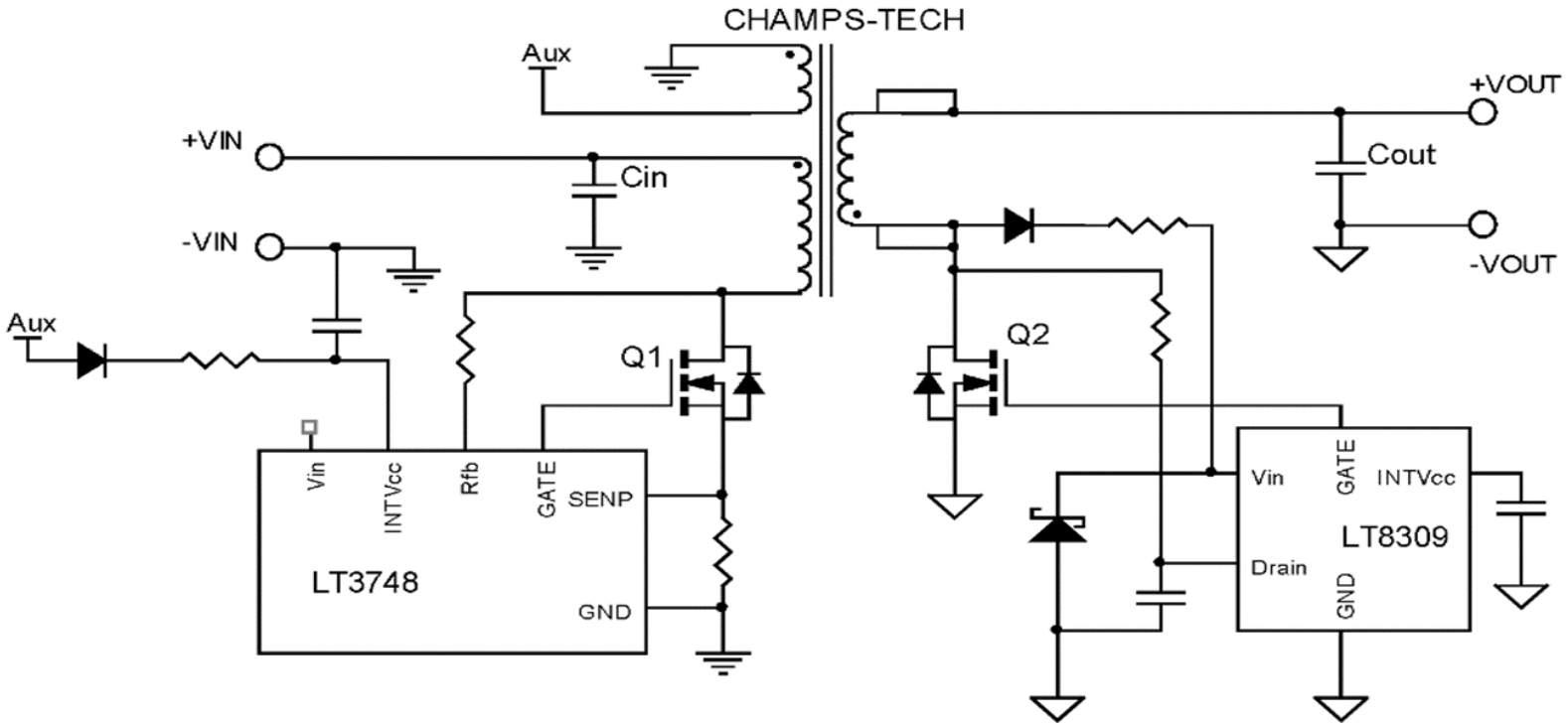
Schematic [Simplified] for BCM Flyback. [Showing LT3748 || LT8309 combination for ref].



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- **Champs '40R2,R1' Series -- Power Rating to 150W Forward Converter**
- **Height 7.4mm to 9.8mm | Footprint: 23.4mm x 20.1mm Max**
- **Frequency Range 100 Khz to 800 Khz Typical | Isolation: 1750 Vdc Basic**

Electrical Specifications @25C -- Operation Temperature -40ºC to +125ºC									
Part Number	Turns			Primary Induct. (µH Min)	Leakage Induct. (µH Nom)	DCR (mΩ Nom)			**Sch.**
	PRI. A	PRI. B	Sec.			PRI. A	PRI. B	**Sec.**	
Double Interleave Designs								**Max Ht 9.8 mm**	
40R2-3444	3T	4T	4T 1T:1T 1T:1T	117	0.100	5	8	4.00	A1
40R2-4444	4T	4T		153	0.100	8	8		
40R2-4544	4T	5T		194	0.100	8	14		
40R2-5544	5T	5T		240	0.150	14	14		
40R2-5644	5T	6T		290	0.150	14	19		
40R2-6644	6T	6T		345	0.150	19	19		
40R2-3411	3T	4T	1T & 1T	117	0.100	5	8	0.6 & 0.6	A2
40R2-4411	4T	4T		153	0.100	8	8		
40R2-4511	4T	5T		194	0.100	8	14		
40R2-5511	5T	5T		240	0.150	14	14		
40R2-5611	5T	6T		290	0.150	14	19		
40R2-6611	6T	6T		345	0.150	19	19		

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Electrical Specifications @25C -- Operation Temperature -40ºC to +125ºC									
Part Number	Turns			Primary Induct. (µH Min)	Leakage Induct. (µH Nom)	DCR (mΩ Nom)			Sch.
	PRI. A	PRI. B	Sec.			PRI. A	PRI. B	**Sec.**	
Double Interleave Designs									**Max Ht 9.8 mm**
40R2-3421	3T	4T	2T & 1T	117	0.100	5	8	1.7 & 0.6	A3
40R2-4421	4T	4T		153	0.100	8	8		
40R2-4521	4T	5T		194	0.100	8	14		
40R2-5521	5T	5T		240	0.150	14	14		
40R2-5621	5T	6T		290	0.150	14	19		
40R2-6621	6T	6T		345	0.150	19	19		
40R2-4431	4T	4T	3T&1T	153	0.100	8	8	5 & 0.6	A3
40R2-4531	4T	5T		194	0.100	8	14		

Notes: Inductance is measured with both primary windings connected in series(2 to 5, with 3 and 4 shorted). Leakage Inductance is measured [2-5, series connected Primary] , with secondaries 7 thru 11 shorted.

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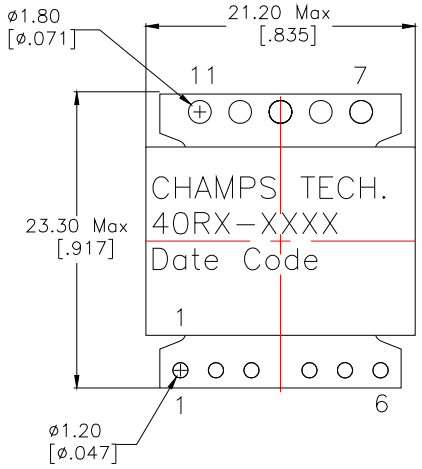
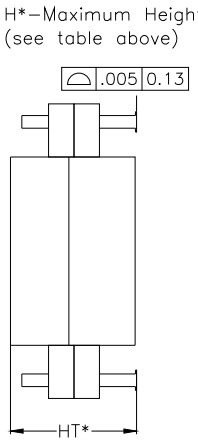
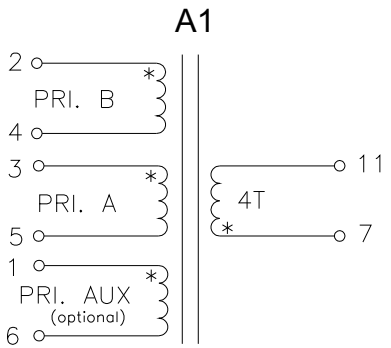
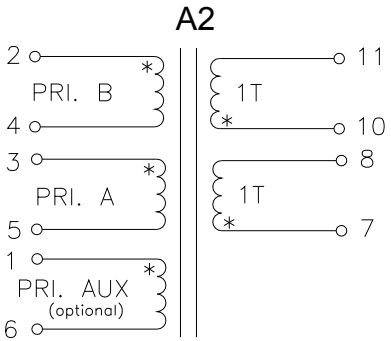
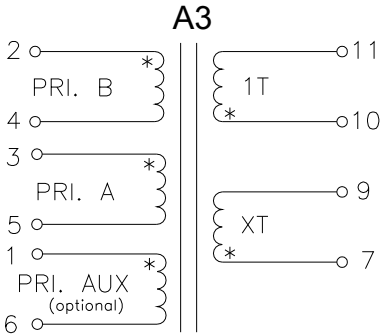




Schematics







Champs Technologies

- **'55' Series -- Power Rating to 350W Forward Converter**
- **Height 7.4mm to 10.2mm | Footprint: 30mm x 26mm Max**
- **Frequency Range 100 Khz to 800 Khz Typical | Isolation: 1750 Vdc Basic**

Electrical Specifications @25C -- Operation Temperature -40ºC to +125ºC									
Part Number	Turns			Primary* Induct. (µH Min)	Leakage Induct. (µH Nom)	DCR (mΩ Nom)			**Sch.**
	PRI. A	PRI. B	Sec.			PRI. A	PRI. B	**Sec.**	
Double Interleave Designs									**Max Ht 10.2mm**
55R2-4444	4T	4T	4T 1T & 1T 1T & 1T	216	0.100	7	7	3.50	A1
55R2-5544	5T	5T		340	0.150	12	12		
55R2-6644	6T	6T		480	0.180	17	17		
55R2-7744	7T	7T		660	0.250	25	25		
55R2-8844	8T	8T		860	0.280	32	32		
55R2-4411	4T	4T	1T & 1T	216	0.100	7	7	0.45 & 0.45	A2
55R2-5511	5T	5T		340	0.150	12	12		
55R2-6611	6T	6T		480	0.180	17	17		
55R2-7711	7T	7T		660	0.250	25	25		
55R2-8811	8T	8T		860	0.280	32	32		

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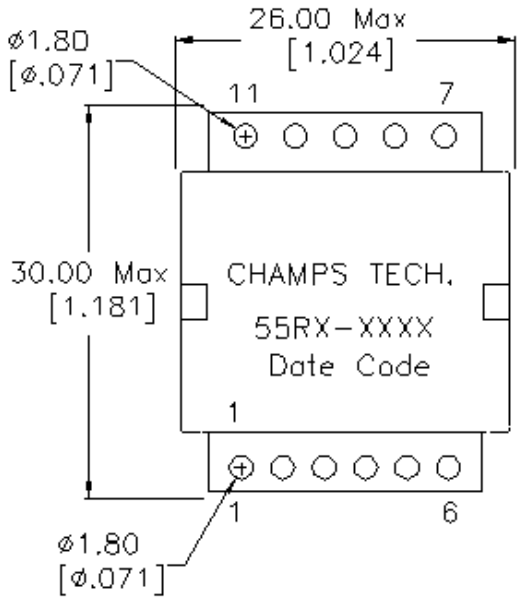

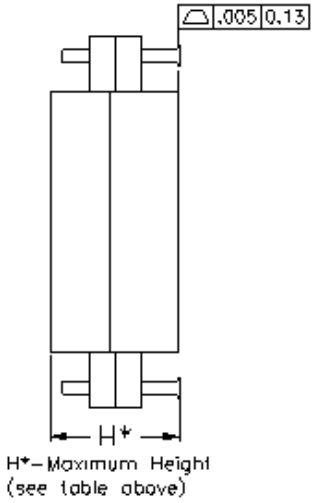

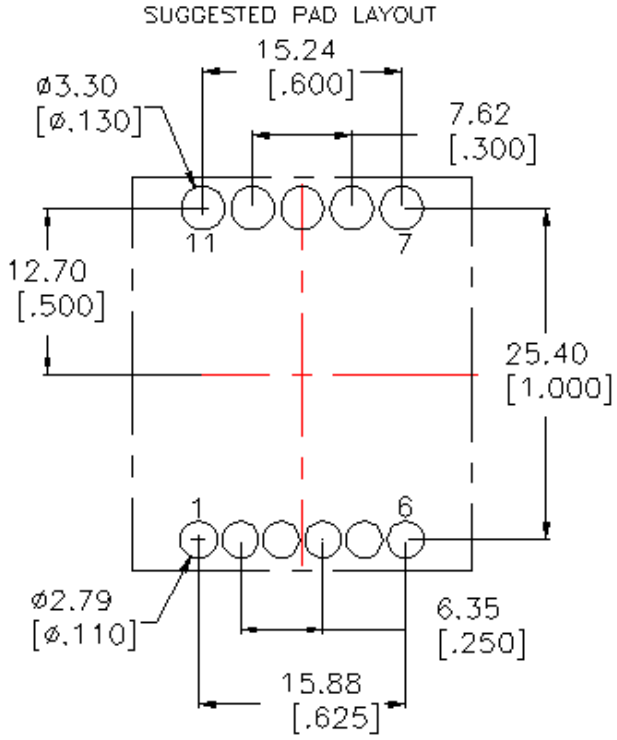

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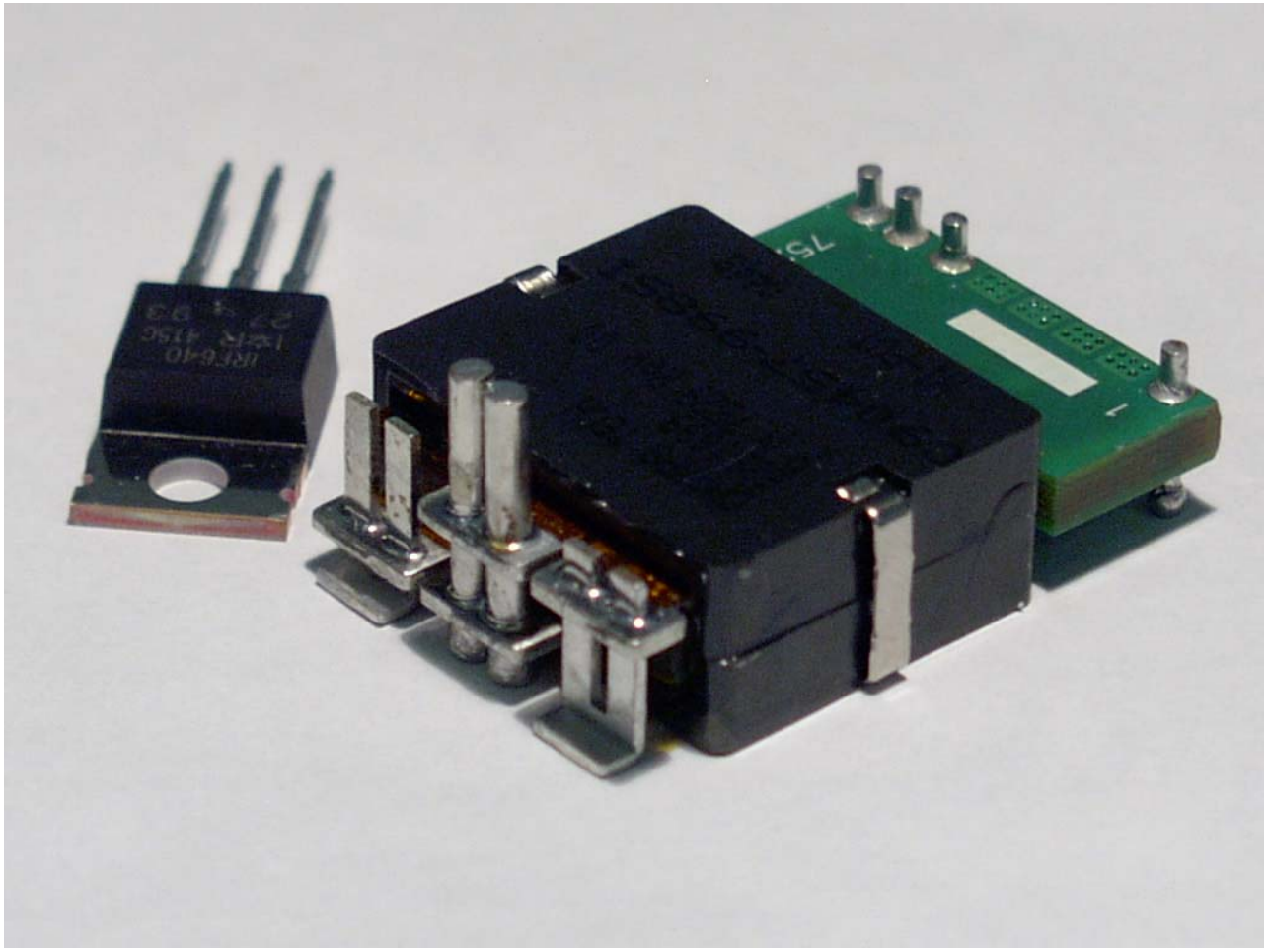
Applications: Server Power (Data Centers)



Champs Technologies

Champs USA

Champs Technologies, LLC
7 Peter Cooper Rd #10E
New York, NY 10010
Attn: Harold Eicher
646-330-5064
646-202-2899
Harold.eicher@champs-tech.com
http://www.champs-tech.com

Champs Taiwan

All Purchase Orders, Returns, Invoices, etc to:
Champs Technologies Co., Ltd
No 955 Sec 7.Taiwan Blvd.
Shalu Dist , Taichung , 43350 Taiwan R.O.C.
Phone: 886-2-2546-7766
Attn: Cathy Lee Cathy@champstech.com