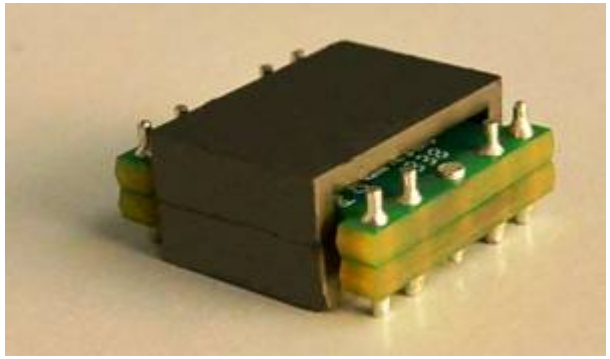
Champs Technologies Support of Linear Technology DC1317A Reference Designs



G45 Series

- Forward Active Clamp Topology -- Highest Efficiency attributable to Planar Design.
- Aggressive Interleave by design results in lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Click on Part Number in Table below for the Data Sheet.
- Wide variety of Turns Ratios in stock but not shown in Table.
- Contact Us for Module Design and SM Assy of Converter

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

Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
2. In all cases Champs Technologies makes no representation as to suitability of the Reference Design itself as that is the design responsibility and Intellectual Property of Linear Technology.
3. Champs Technologies responsibility is limited to the use of its component as described in the Data Sheet and any warranty express or implied is limited to component replacement if found defective.

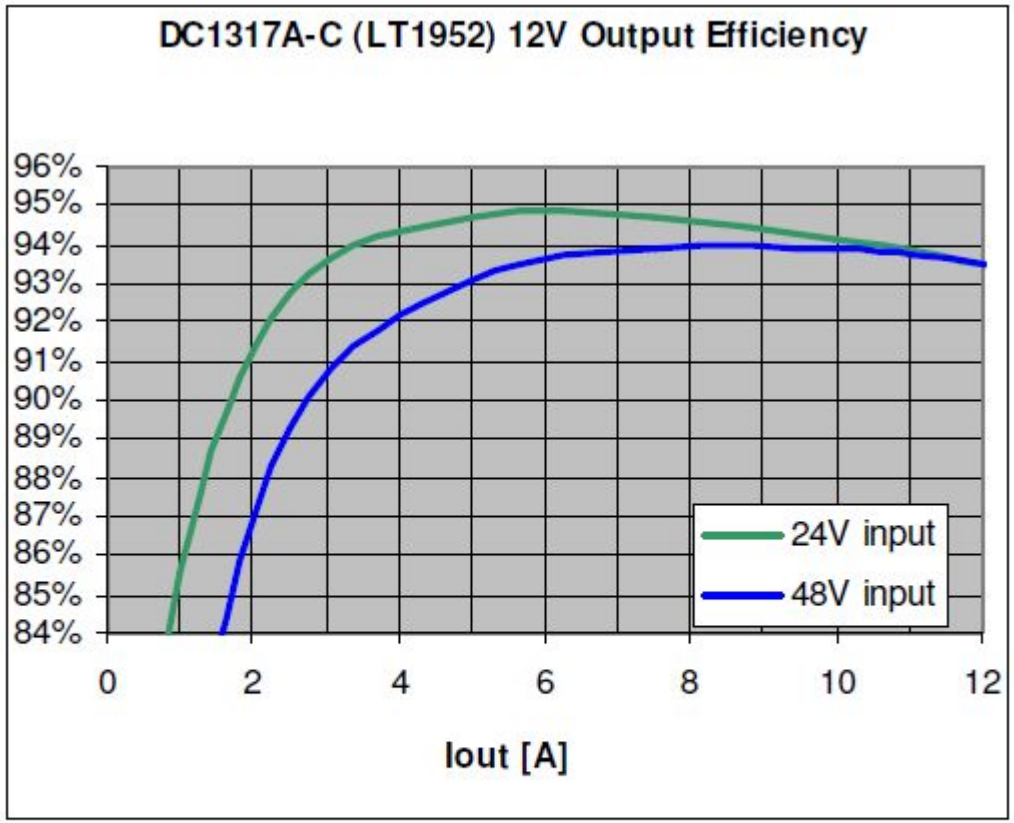
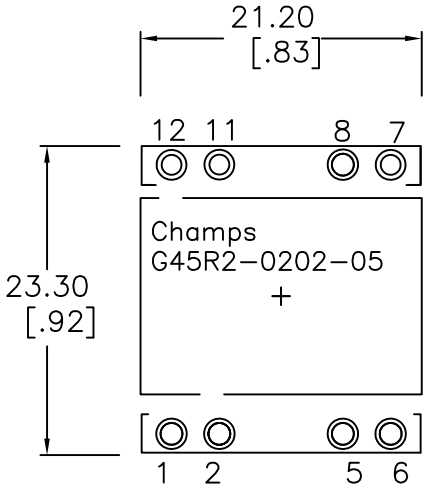


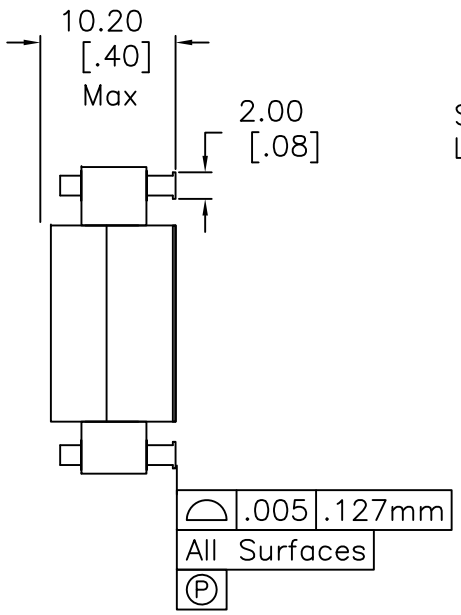
Figure 3. High efficiency of DC1317A-C allows the board to be used in thermally critical applications

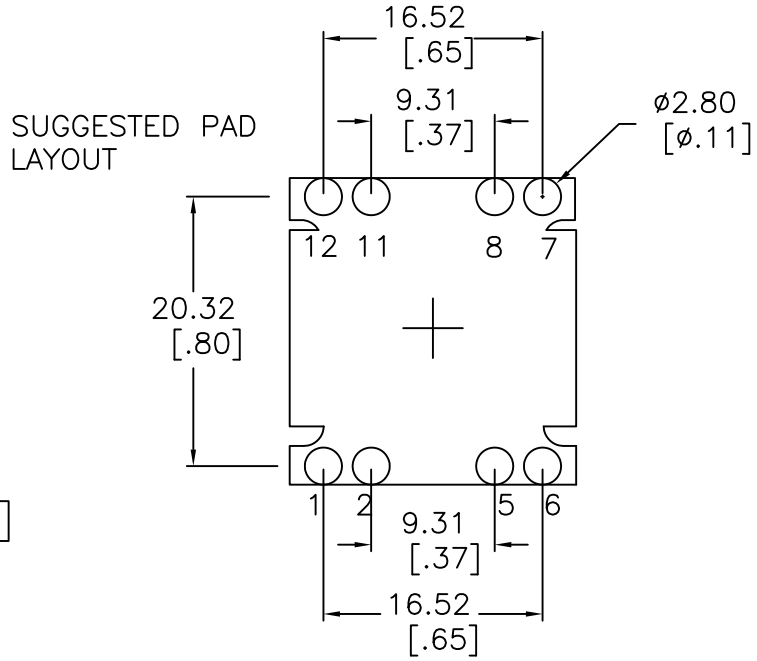
Options supplied as discrete component or integrated into a complete DC-DC Converter Module:

1. Surface Mount Discrete Component Design (as per above Data Sheets).
2. Discrete Component Implemented in Pad-to-Pad Mounting.
3. Component implemented as Half-Embedded Design + SM Assembly of all components required of DC-DC Converter.
4. Implemented as a Fully Embedded Design + SM Assembly of all components required of DC-DC Converter.

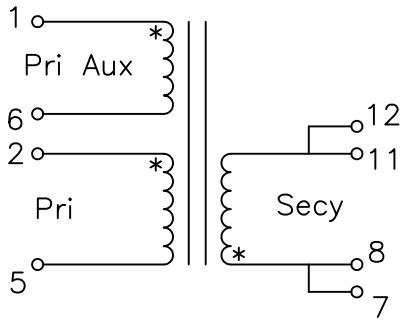
- SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month.







Schematic



NOTES:
1. TURNS RATIO [2–5] : [7,8 – 11,12] = 1.00 +/–2% || [2–5] : [1–6] = 0.40 +/–2%
2. DCR [2–5]= 0.80 mohm Nom., [7,8 – 11,12]= 0.80 mohm Nom., [1–6]= 60 mohm Max
3. Inductance [2–5]= 10.3 uH Nom, 8.80 Min at 10KHz, 0.1 VRMS @ 25C
4. Leakage Inductance [2–5] Short [7,8–11,12] = 0.03uH Max, 0.05 uH Max @100 KHz
5. Dielectric Strength [2–5] to [7–11] 1750 VDC | [1–6] to [2–5] 500Vrms 60 Hz
[1–6],[2–5] to CORE 1750 VDC, [7–11] to CORE 500 VDC
6. Capacitance [2:7] = 600 pF Nom, 800 Max
7. Weight 16.8 grams Nom | RoHS Compliant | Pin Composition Sn/Ag 96/4

ORDERING INFORMATION:
1. Order Per Part # G45R2–0202–05. Parts ship in trays unless otherwise specified.
2. For Tape & Reel packaging append "R" to PN, e.g. G45R2–0202–05–R.
Tape & Reel packaging is in accordance with Champs Dwg T40–4600014.
3. Std 180 parts per reel | 40 parts per tray.

No.	DESCRIPTION REVISIONS	DATE	APPR

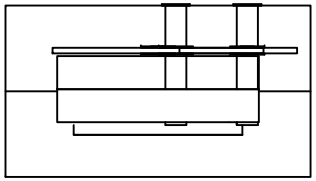
THIRD ANGLE PROJECTION

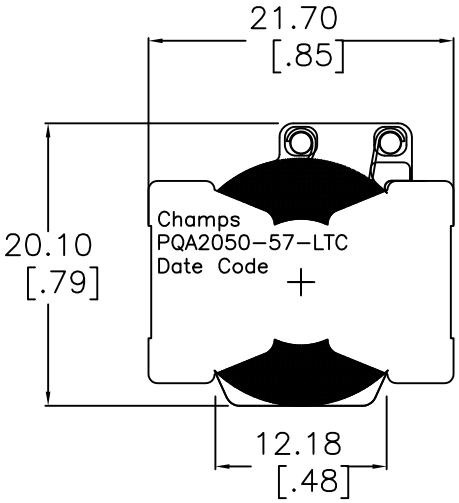
CHAMPS TECHNOLOGIES

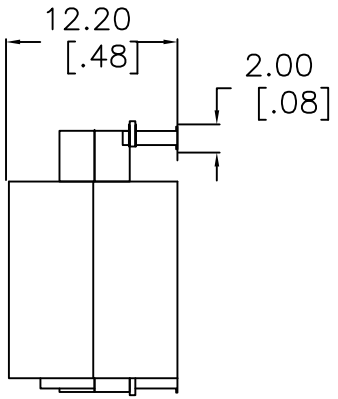
TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±.254 MM
.XX ±.76 MM
.X
ANGLE ±

	SIGN	DATE
DRAWN		11/27/08
CHKD		11/27/08
APPR		11/27/08

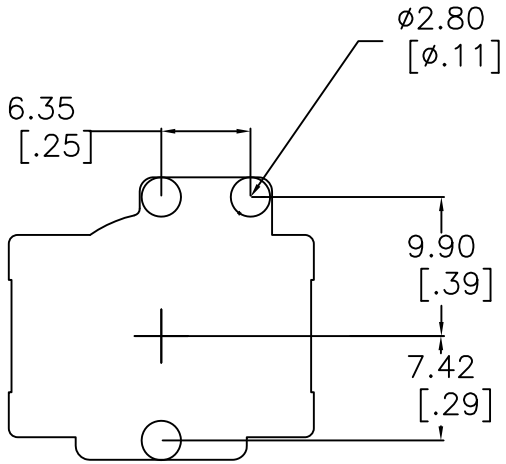
Champs No. G45R2 0202–05
Customer Part #:
ISSUE A
REV 00
SIZE
SCALE 2:1

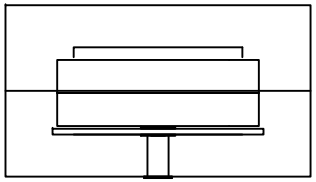




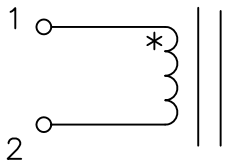


SUGGESTED
PAD
LAYOUT
Rounded
Pad





Schematic



INDUCTANCE [1–2] = 57uH Nom, 51 Min. @10kHz/0.1V 5.8Adc
DCR [1–2] = 34 mohms Nom, 38 Max
DIELECTRIC ISOLATION > 500 VDC [1–2] : CORE
SATURATION CURRENT @25C = 6.6Adc | @85C = 5.8Adc
HEATING CURRENT FOR 40C RISE AT 25C AMBIENT = 6.5Adc
RoHS Level 6/6 Compliant
Operating termperature –40C to +85C

No.	DESCRIPTION REVISIONS	DATE	APPR

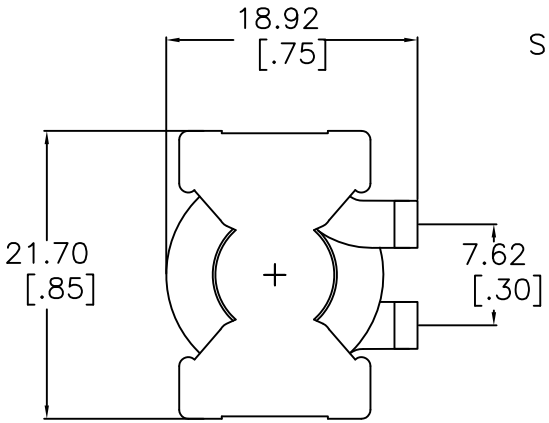
THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±
.XX ±
.X ±
ANGLE ±

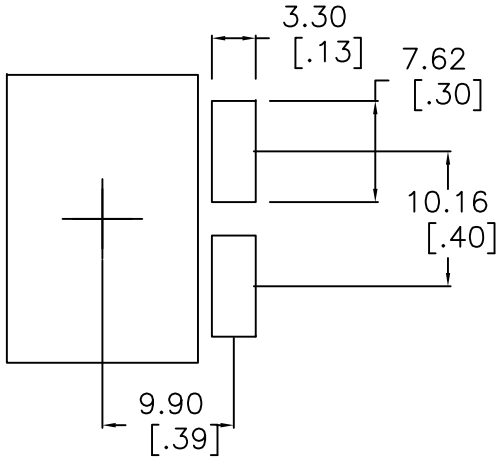
CHAMPS TECHNOLOGIES

	SIGN	DATE
DRAWN	HE	8/20/08
CHKD		
APPR		

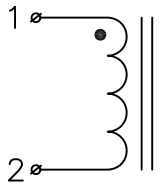
Champs No. PQA2050-57-LTC
Customer Part #: INDUCTOR
ISSUE A
REV 00
SIZE
SCALE 2:1

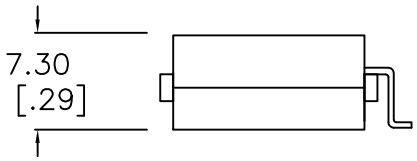


SUGGESTED PAD LAYOUT



Schematic





NOTES:

1. INDUCTANCE [1–2] = 0.65 uH ±15% @100kHz 1.0V @56 Adc
2. INDUCTANCE [1–2] = 0.50 uH ±15% @Isat 65 Adc
3. DCR [1–2] = 0.80 mohms Max
4. DIELECTRIC ISOLATION > 500 VDC [1–2] : CORE
5. SATURATION CURRENT @25C = 65 Adc | @100C = 58 Adc
6. HEATING CURRENT FOR 45C RISE AT 25C AMBIENT = 56 Adc
7. Operating Ambient Temperature: −40C to +100C
8. RoHS Level 6/6 Compliance || 96/4 Sn/Ag Pin Composition

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED

.XXX ±
.XX ±
.X ±
ANGLE ±

CHAMPS TECHNOLOGIES

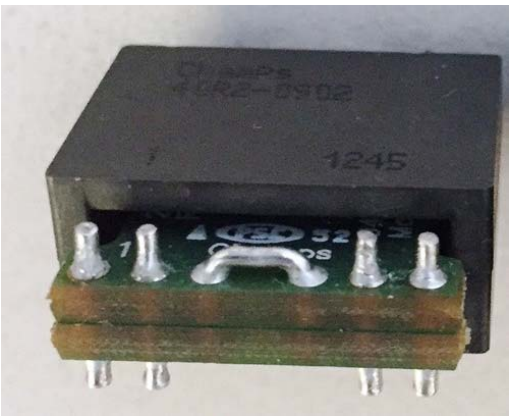
	SIGN	DATE
DRAWN	HE	08.05.14
CHKD		
APPR		

Champs No. PQL2050−0R650−HX

Customer Part #:

ISSUE A | REV 00

SIZE | SCALE 2:1



Champs Technologies DC2324A Reference Designs

G45 and Z40R2 Planar Series

Self-Driven Secondary Side Synchronous Rectification

- Forward Active Clamp Topology -- Highest Efficiency attributable to Planar Design.
- Aggressive Interleave by design results in lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect
- Click on Part Number in Table below for the Data Sheet.
- Wide variety of Turns Ratios in stock but not shown in Table.
- Contact Us for Module Design and SM Assembly of Converter

Table I: Planar Series Ref Design and Part Numbers

Ref Design	Vin (Min)	Vin (Max)	Vout	Io	Champs PN	Output Inductor
DC2324A-A	36	72	24	5.0	G45R2-0808-S01-80R	PQA2050-39-LTC
DC2324A-B	18	36	24	5.0	G45R2-0408-S01-25R	PQA2050-39-LTC
DC2324A-C	9	18	24	4.0	G45R2-0208-S01-8R	PQA2050-39-LTC

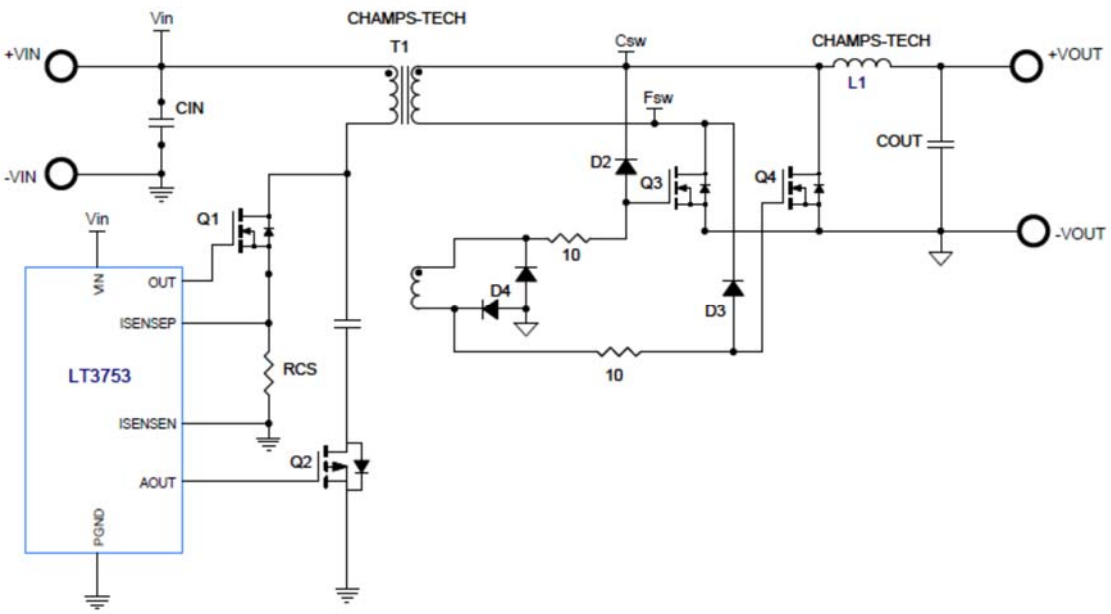
Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
2. In all cases Champs Technologies makes no representation as to suitability of the Reference Design itself as that is the design responsibility and Intellectual Property of Linear Technology.
3. Champs Technologies responsibility is limited to the use of its component as described in the Data Sheet and any warranty express or implied is limited to component replacement if found defective.

1. DC2324A-A - LT3753EFE Demo Board Isolated Forward, 36V ≤ VIN ≤ 72V; VOUT = 24V @ 5A http://www.linear.com/solutions/7298

2. DC2324A-B - LT3753EFE Demo Board | Isolated Forward, 18V ≤ VIN ≤ 36V; VOUT = 24V @ 5A http://www.linear.com/solutions/7300

3. DC2324A-C - LT3753EFE Demo Board | Isolated Forward, 9V ≤ VIN ≤ 18V; VOUT = 24V @ 4A http://www.linear.com/solutions/7301

Self-Driven Ref Design Schematic



DC2324 A Ref Design Efficiency

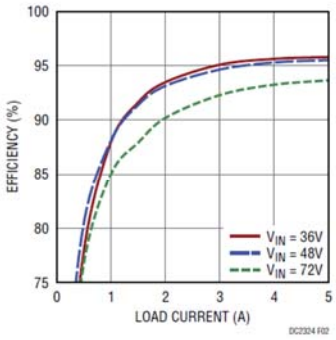


Figure 2. DC2324A-A Efficiency

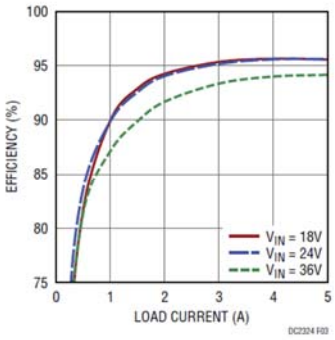


Figure 3. DC2324A-B Efficiency

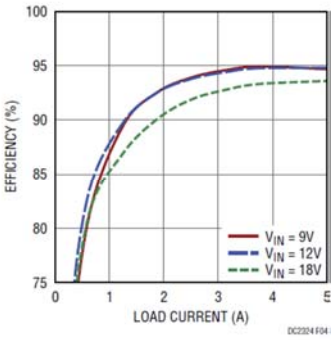
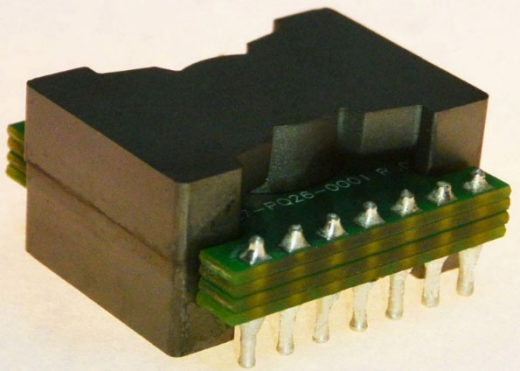


Figure 4. DC2324A-C Efficiency

1. Surface Mount Discrete Component Design (as per above Data Sheets).
2. Discrete Component Implemented in Pad-to-Pad Mounting.
3. Component implemented as Half-Embedded Design + SM Assembly of all components required of DC-DC Converter.
4. Implemented as a Fully Embedded Design + SM Assembly of all components required of DC-DC Converter.
5. SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month.

DC2306A Reference Design [Linear PoE 54Vout Ref Designs]

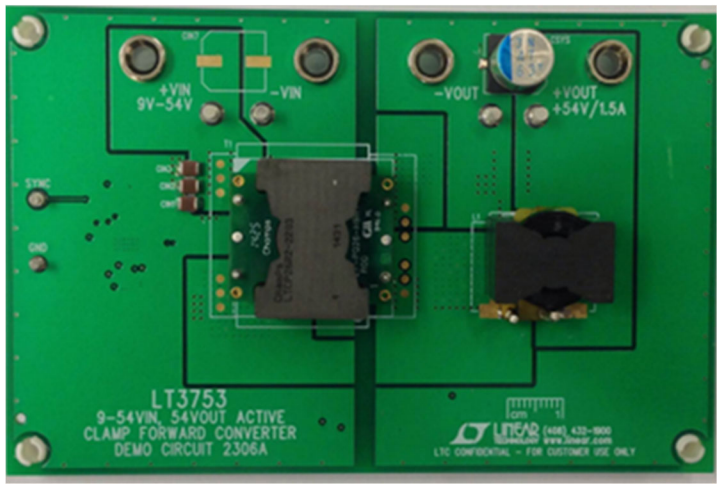
9-15Vin || 20-60Vin || 36-72Vin || 50-150Vin || 85-300Vin

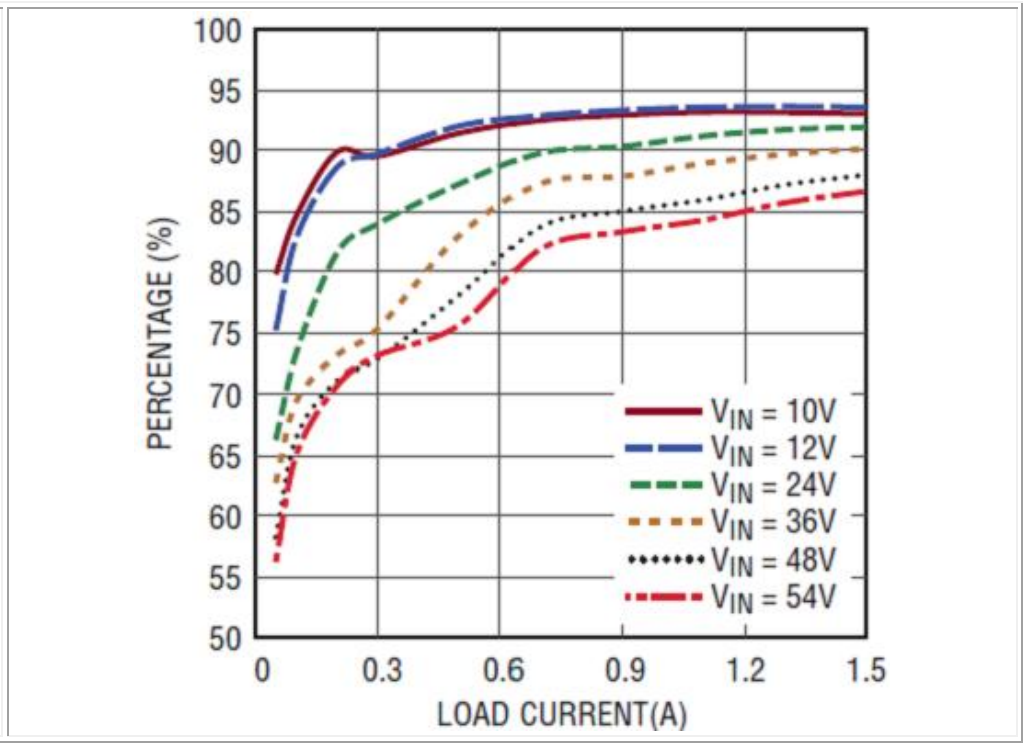


- Forward Active Clamp Topology -- Highest Efficiency. Planar Design.
- Aggressive Interleave planar construction -- lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of Turns Ratios in stock.
- Contact Us for DC-DC Module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

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

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	Output Inductor
P26R2-0322-18R0	10	54	54	1.5	PQA2050-330-LTC

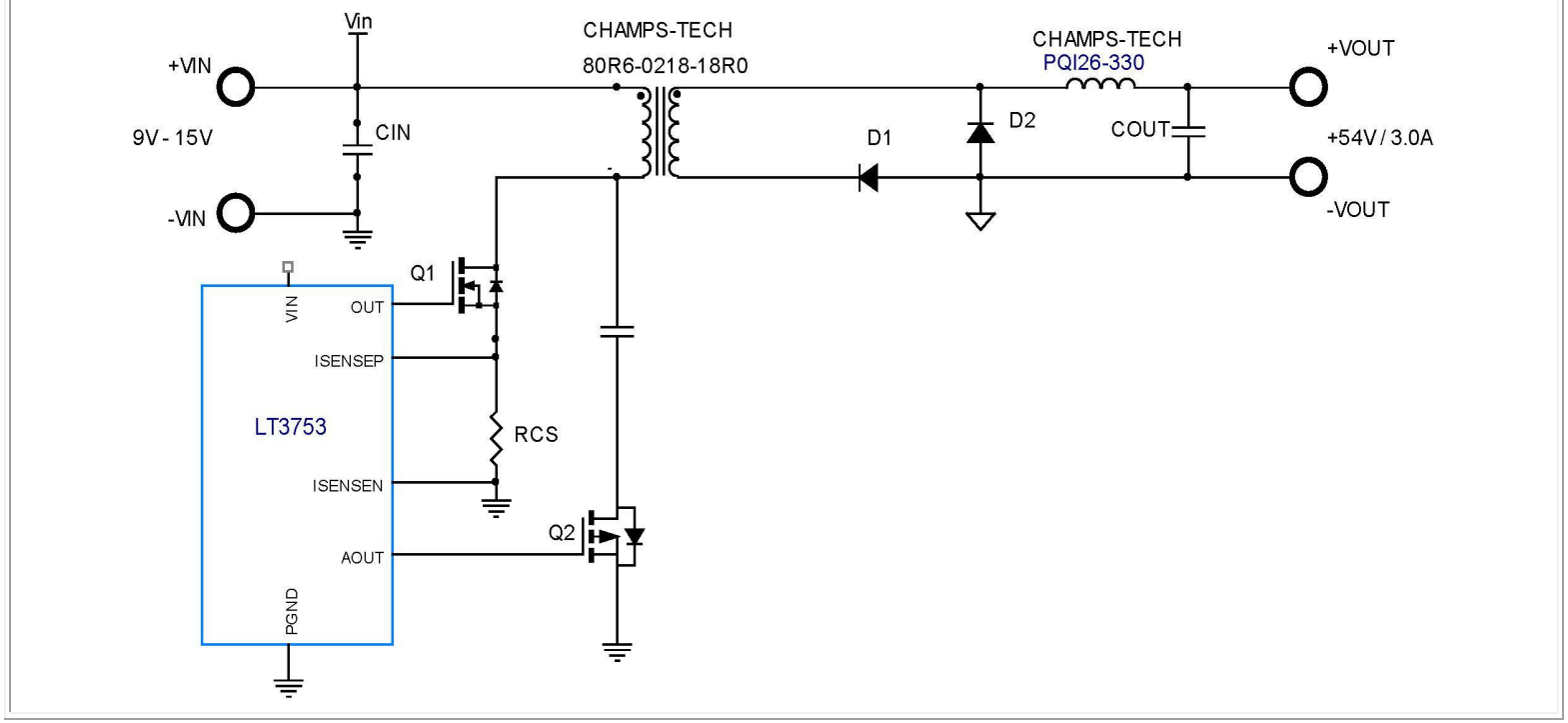


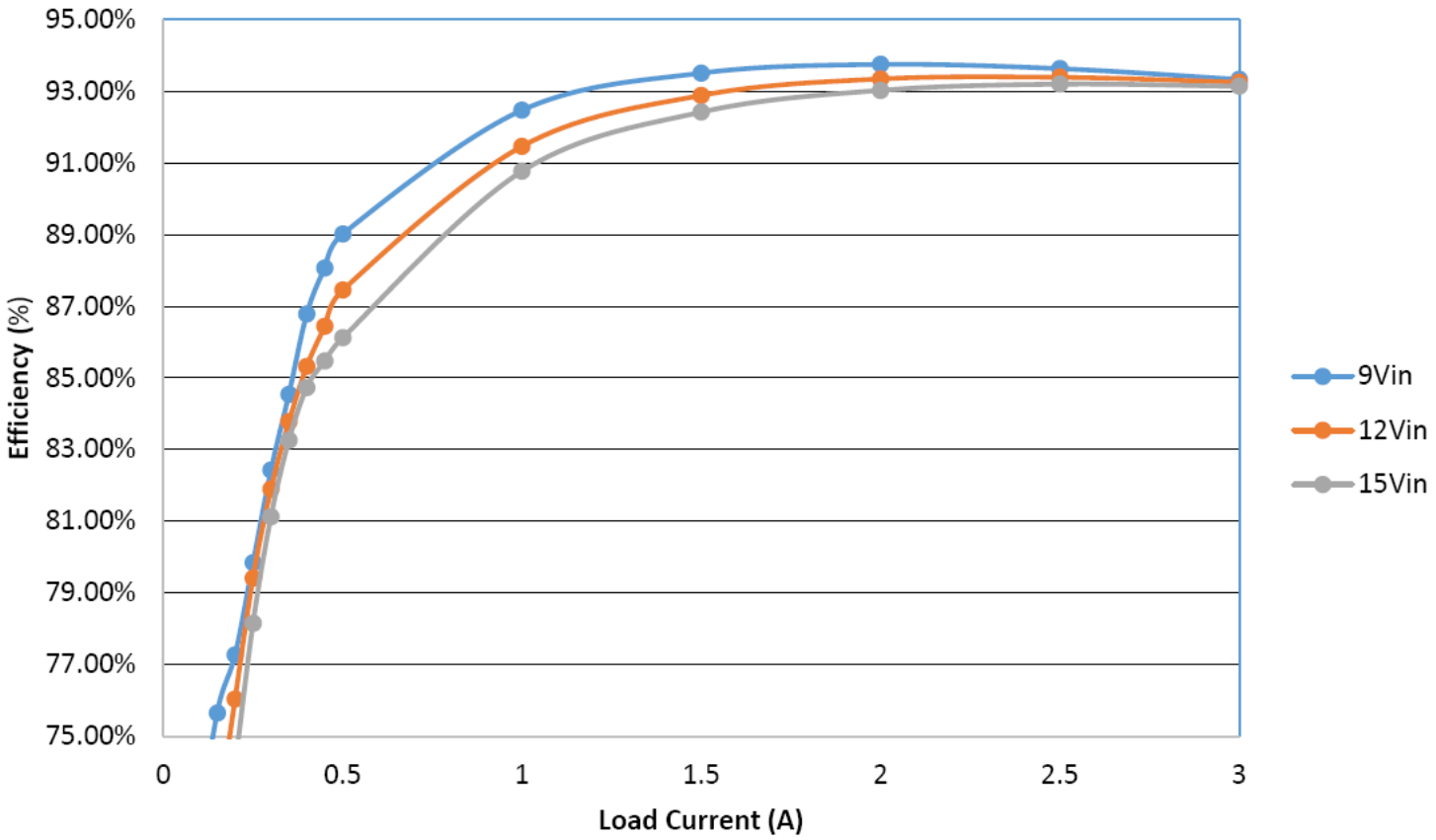


Linear Technology URL: http://www.linear.com/solutions/5885

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

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	Output Inductor
80R6-0218-8R0	9	15	54	3.0	PQI26-330-LTC





Linear Technology URL: http://www.linear.com/solutions/5650

3. Ref Design Input Range 20-60. Output Voltage 54V at 3A.

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	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	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	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.

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	Output Inductor
80R2-0614	36	72	54	3.0	PQI26-330-LTC
P26R2-0614	36	72	54	3.0	PQI26-330-LTC

6. Ref Design Input Range 50-150. Output Voltage 54V at 3A.

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	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.

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	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	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o	Output Inductor
P26R6-1814	85	300	48	3.5	PQI26-220-LTC

Options include discrete component or integrated complete DC-DC Converter Module:

- **Surface Mount Discrete Component Design.**
- **Discrete Component Implemented in Pad-to-Pad Mounting.**
- **Component implemented as Half-Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **Implemented as a Fully Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month**

Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
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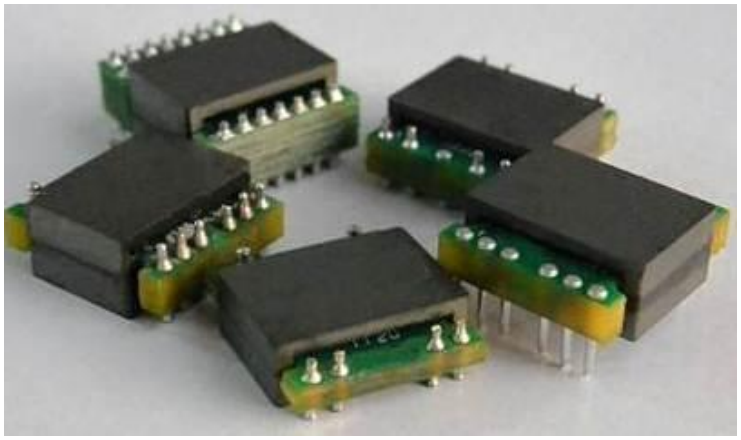
3. Champs Technologies responsibility is limited to the use of its component as described in the Data Sheet and any warranty express or implied is limited to component replacement if found defective.

Champs-Tech Planar for DC1739B-C Ref Design & Demo Board



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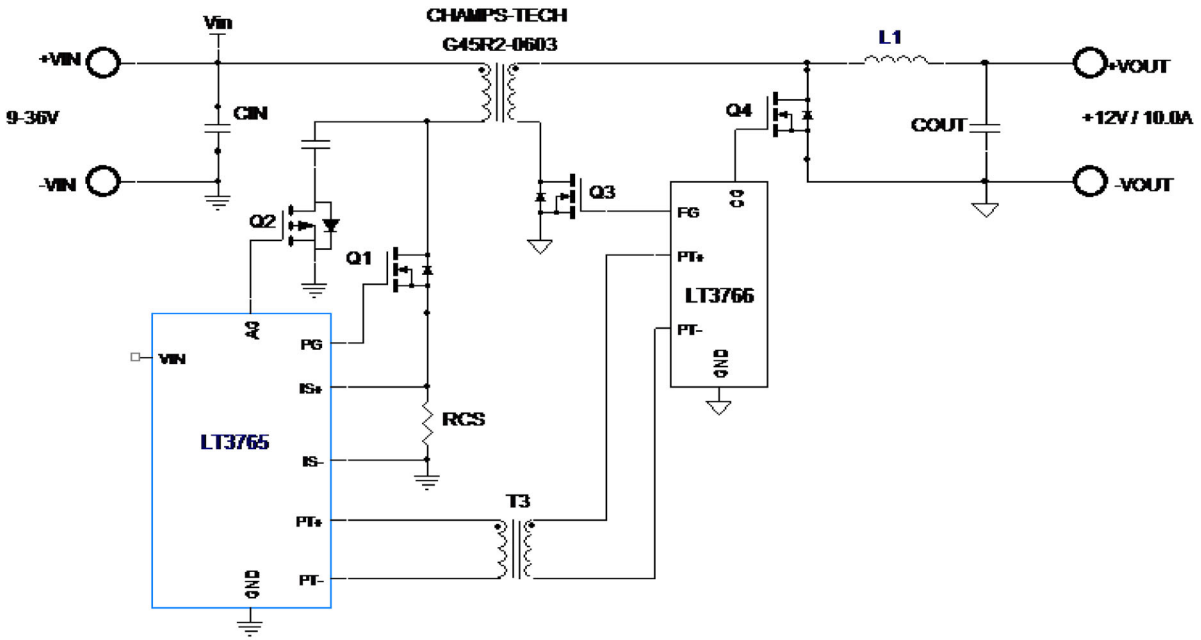
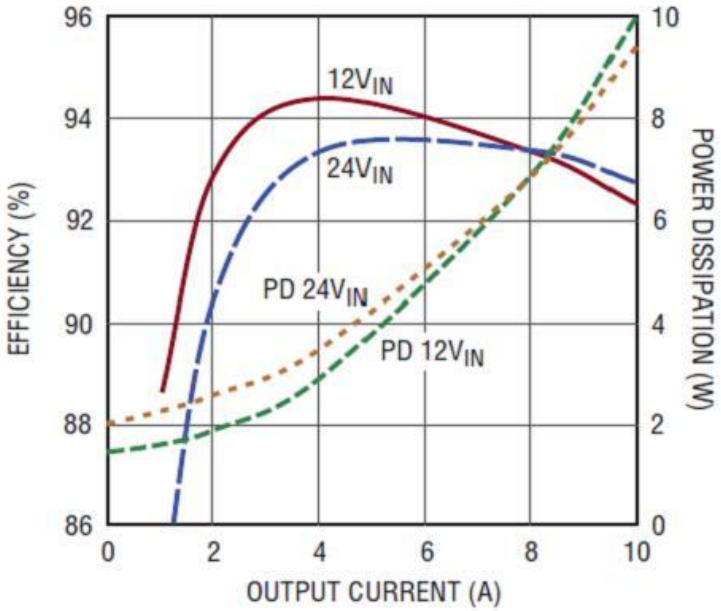
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of Turns Ratios in stock.
- Contact Us for DC-DC Module Design
- Contact Us for SM Assembly of all Components for DC-DC Converter

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

See Also: Champs G45 Series PNs and Data Sheets on Main Page

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
G45R2-0306	9	36	12	10.0
Linear Technology DC1739B-C URL				





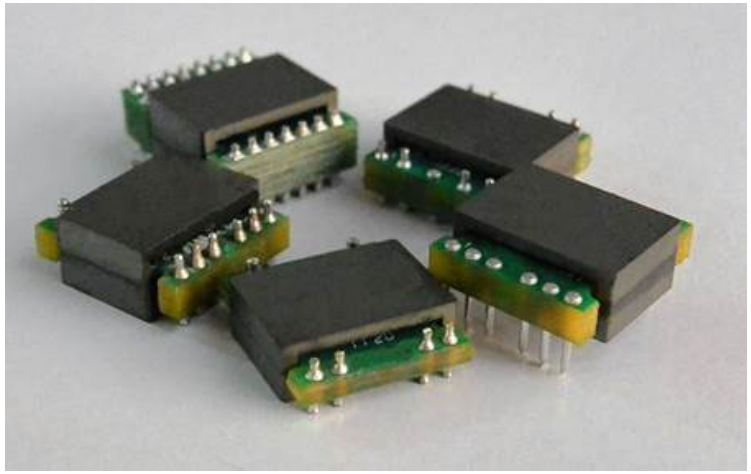
®Linear Technology Inc

Options include discrete component or integrated complete DC-DC Converter Module:

- **Surface Mount Discrete Component Design.**
- **Discrete Component Implemented in Pad-to-Pad Mounting.**
- **Component implemented as Half-Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **Implemented as a Fully Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month**

Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
2. In all cases Champs Technologies makes no representation as to suitability of the Reference Design itself as that is the design responsibility and Intellectual Property of Linear Technology.
3. Champs Technologies responsibility is limited to the use of its component as described in the Data Sheet and any warranty express or implied is limited to component replacement if found defective.

Champs-Tech Planar for DC2199A Ref Designs & Demo Boards



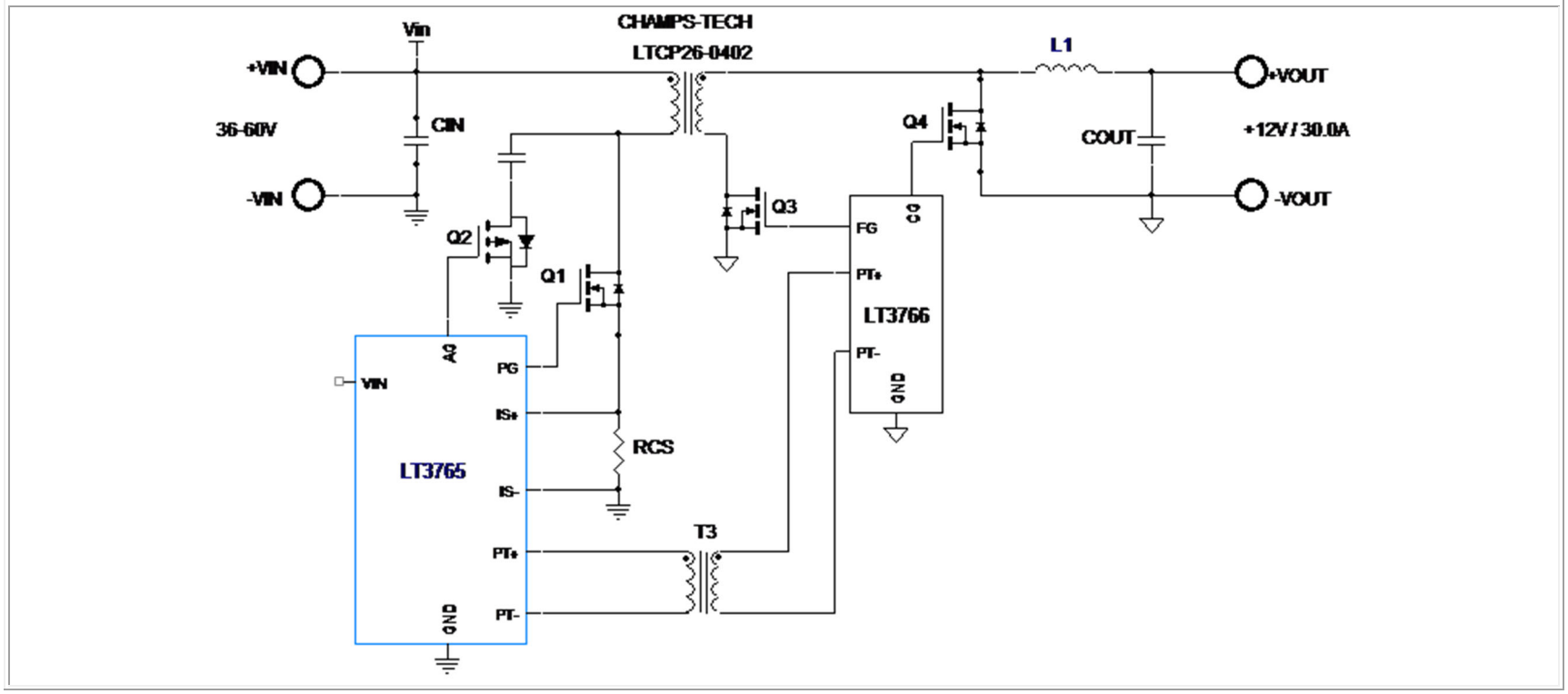
- Forward Active Clamp Topology -- Highest Efficiency. Planar Design.
- Aggressive Interleave planar construction -- lowest achievable Leakage Inductance.
- Multilayer PCB optimization for lowest AC resistance and Proximity Effect.
- Wide variety of Turns Ratios in stock.
- Contact Us for DC-DC Module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

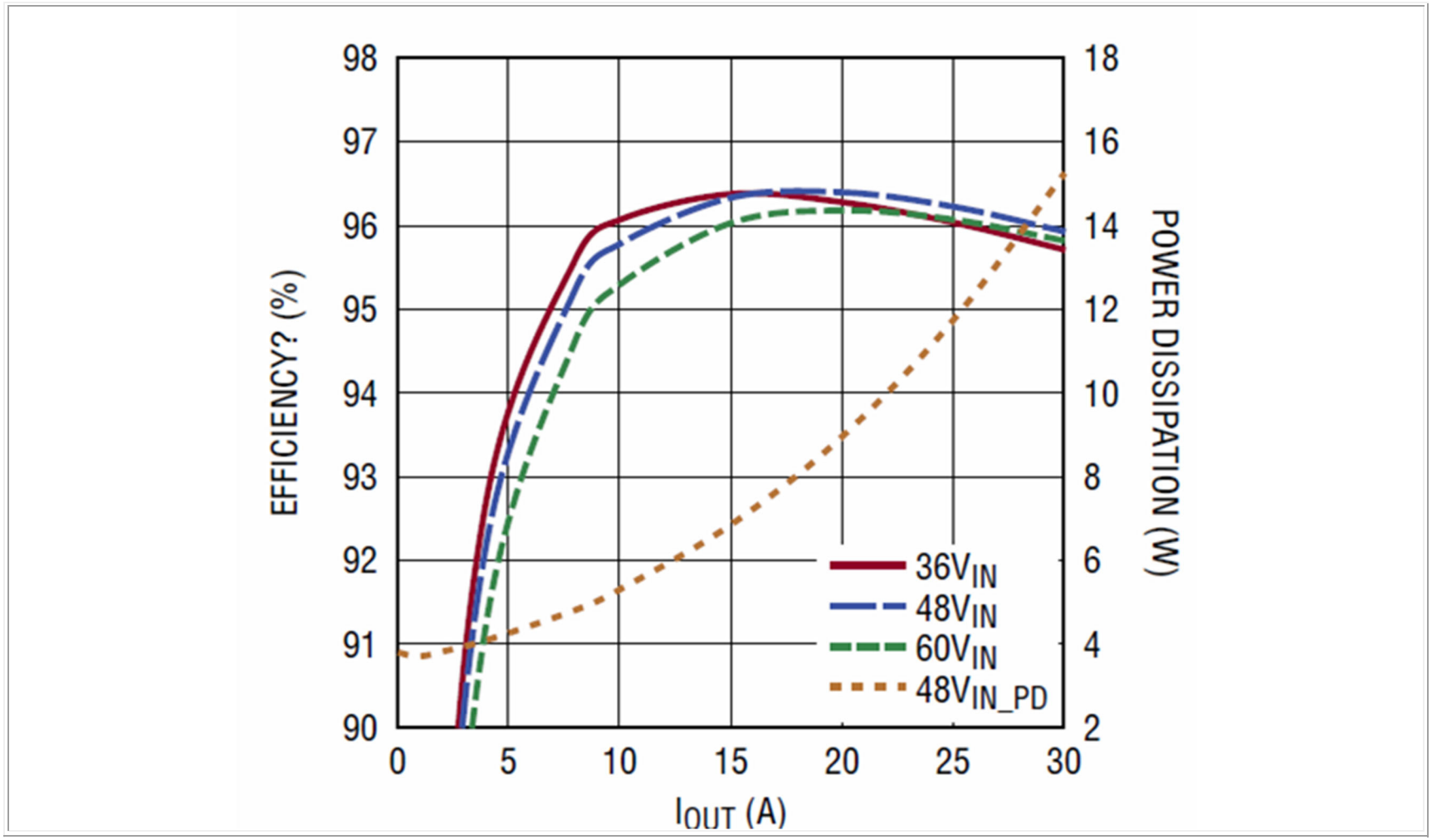
1. Ref Design DC2199A-A. Input Voltage Range 36-60.

See Also: Champs P26 and 80R6 Series PNs and Data Sheets [Coming Soon]

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

Linear Technology DC2199A URL



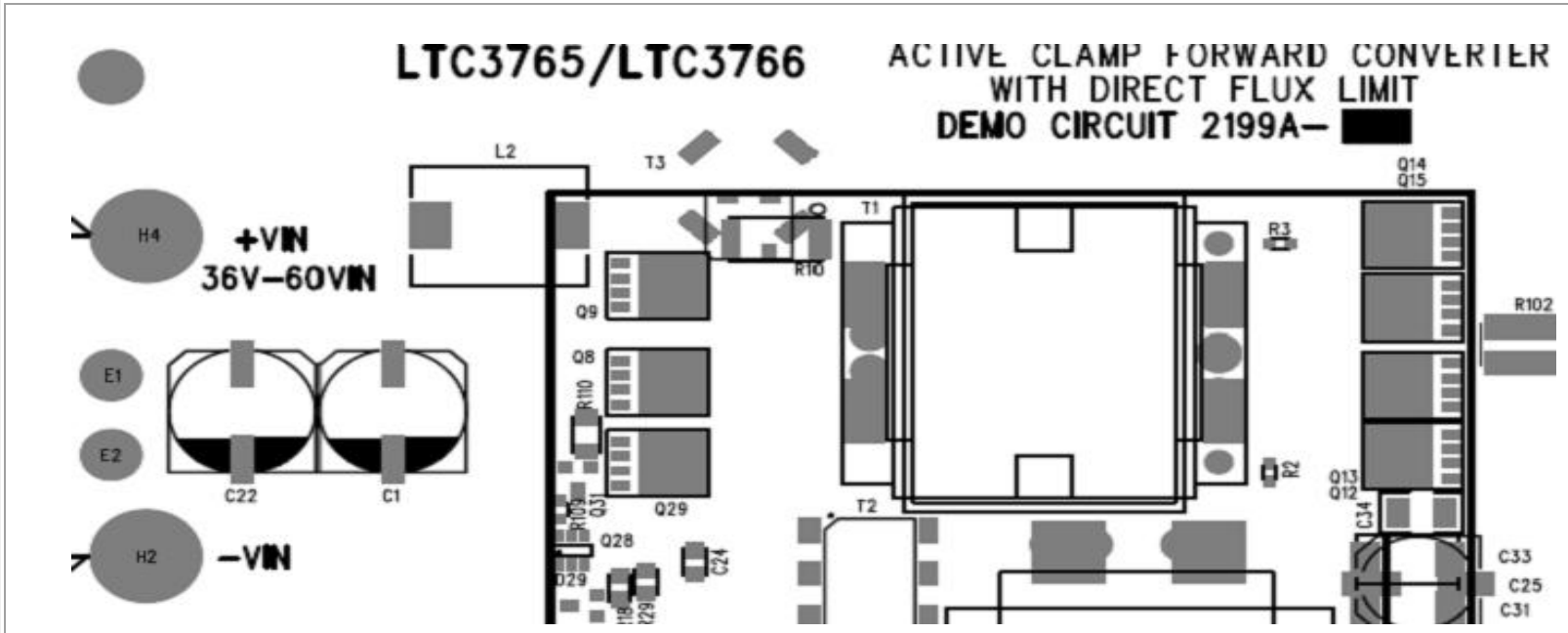


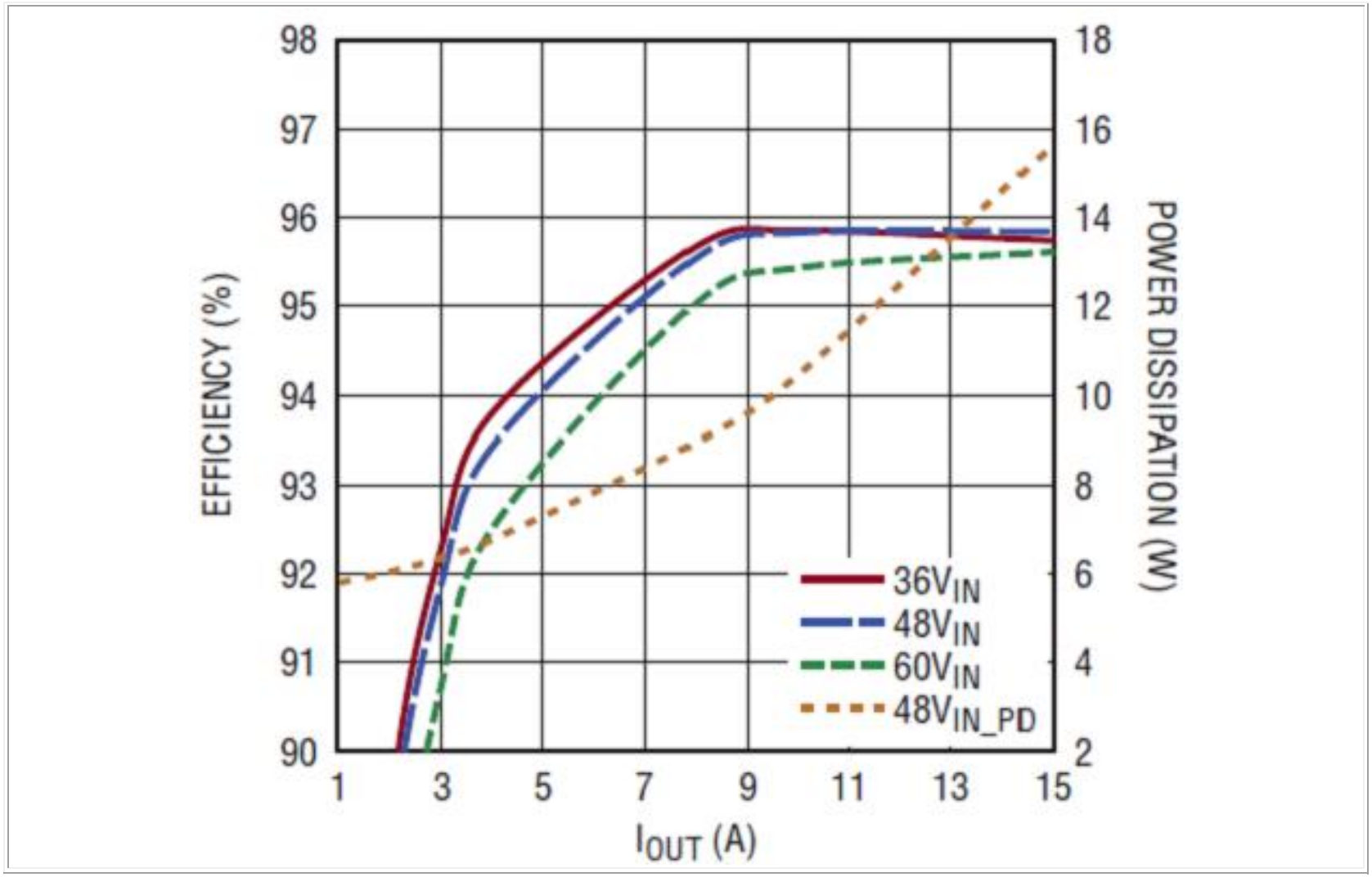
2. Ref Design DC2199A-B. Input Voltage Range 36-60.

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

Linear Technology DC2199A-B URL

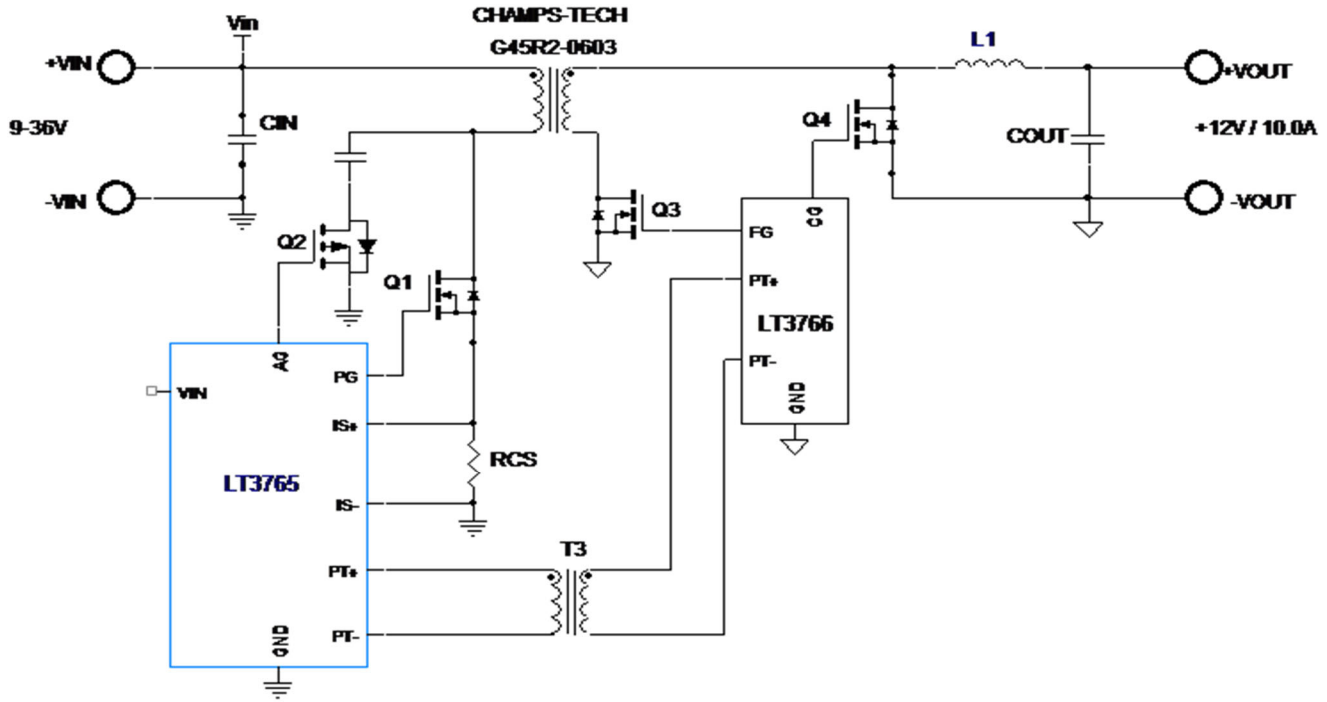


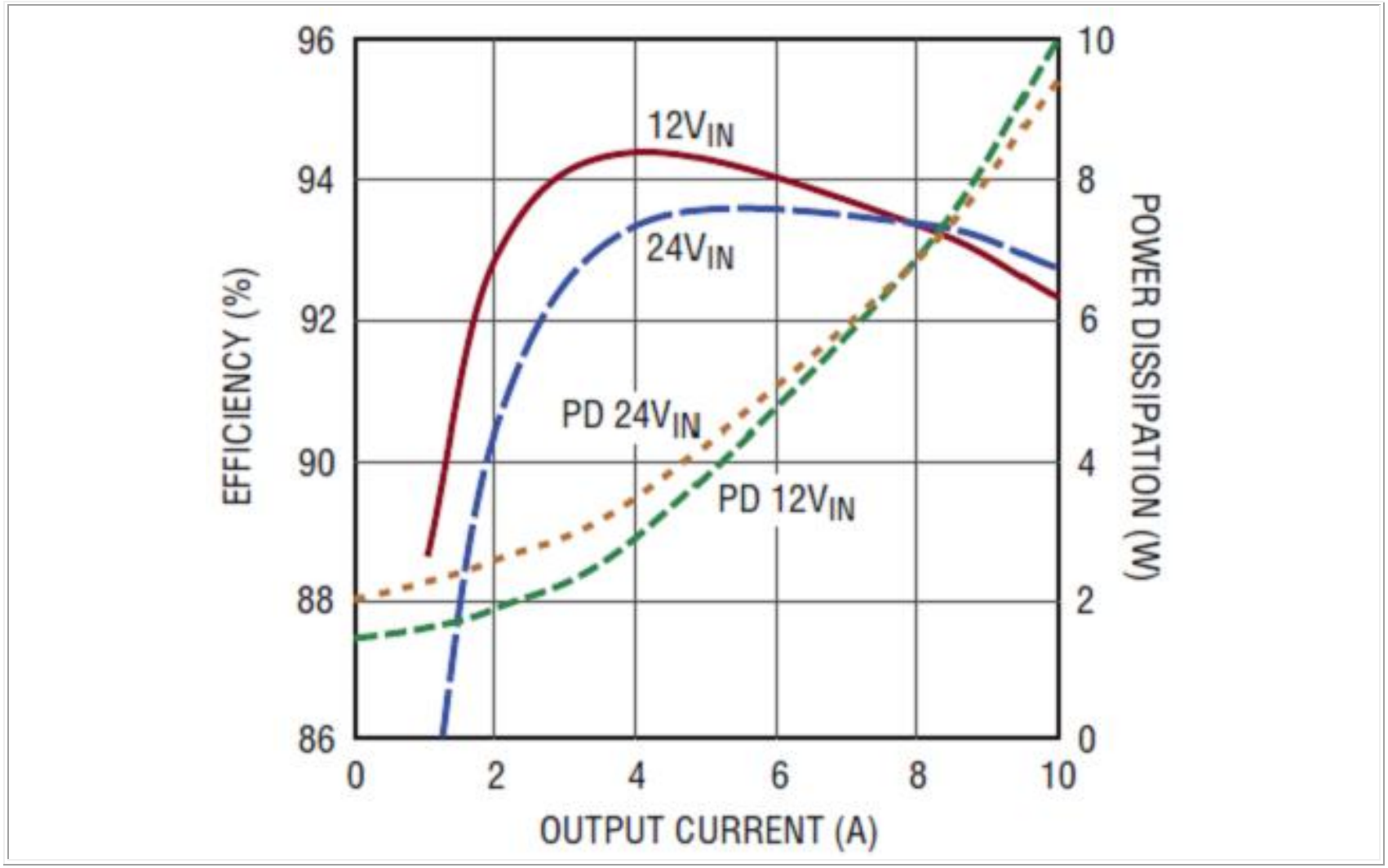


3. Ref Design DC1739B-C. Input Voltage Range 9-36. See Also: Champs G45 Series PNs and Data Sheets

Champs PN	Vin (Min)	Vin (Max)	Vout	Io
G45R2-0306	9	36	12	10.0

Linear Technology DC1739B-C URL





Options include discrete component or integrated complete DC-DC Converter Module:

- **Surface Mount Discrete Component Design.**
- **Discrete Component Implemented in Pad-to-Pad Mounting.**
- **Component implemented as Half-Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **Implemented as a Fully Embedded Design + SM Assembly of all components required of DC-DC Converter.**
- **SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month**

Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
2. In all cases Champs Technologies makes no representation as to suitability of the Reference Design itself as that is the design responsibility and Intellectual Property of Linear Technology.
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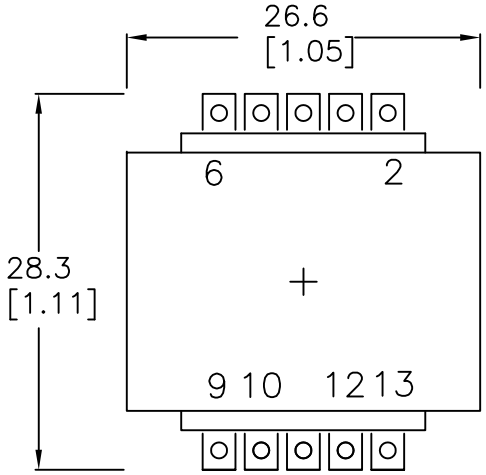
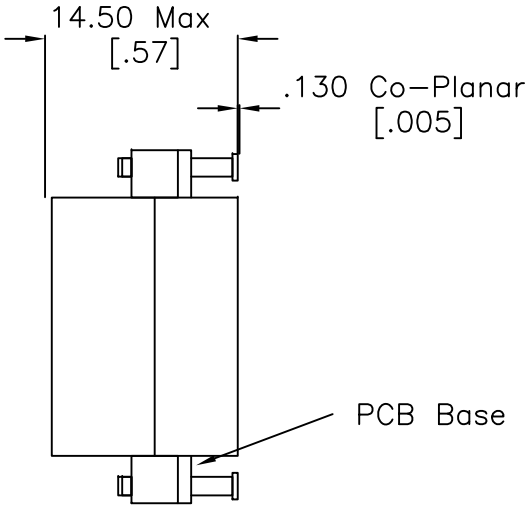
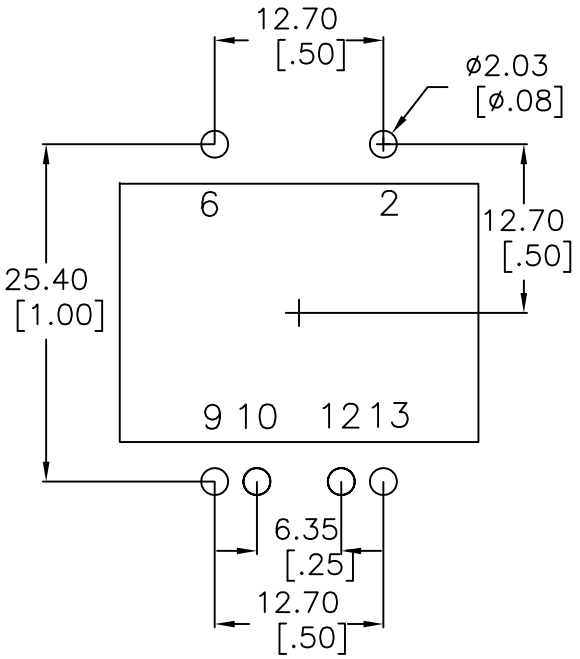
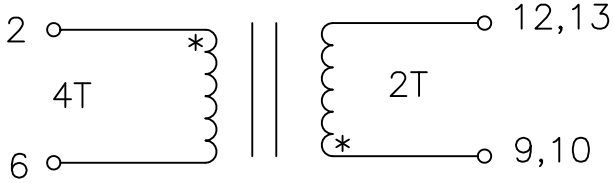




SUGGESTED PAD LAYOUT





Electrical Information:

1. INDUCTANCE [2–6] = 100uH Nom, 75uH Min. @100kHz/1.0V
2. LEAKAGE INDUCTANCE [2–6] : SHORT 9,13 = 30nH Nom @100kHz
3. DCR[2–6]= 3.5 mohms Nom, 4.1 Max DCR[9,10–12,13]= 1.2 mohms Nom, 1.4 Max
4. CAPACITANCE 2,6 to 9,13 = 1000 pF Max @100kHz
5. DIELECTRIC ISOLATION :1500 VDC [2–6] : [9–13] || 500 VDC CORE :[2,6] : [9,13]
6. RoHS Level 6/6 Compliant | Halogen Free || REACH Compliant
7. Weight 31 grams Nom, 34 Max
8. Temp Rating –55C to +130C [Inclusive of temp Rise] || Materials to +170C
9. Typical Application DC2199A–A 36–72Vin To 12V 25A Forward, Active Clamp

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ± 0.180
.XX ± 0.38
.X 1.5
ANGLE ±

CHAMPS TECHNOLOGIES

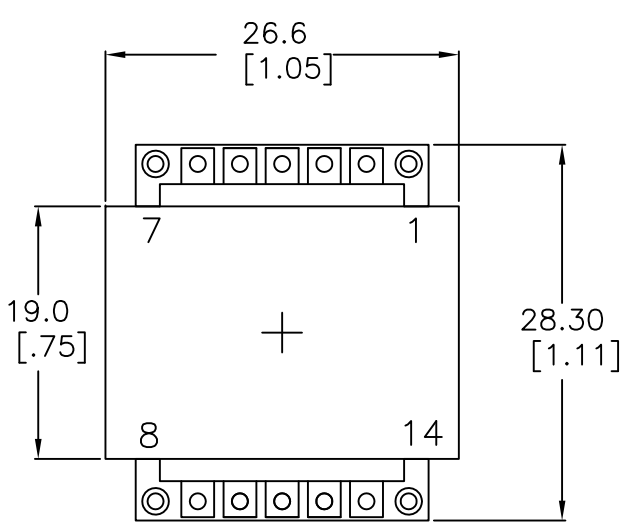
	SIGN	DATE
DRAWN	JL	09.18.15
CHKD	PH	
APPR	DT	

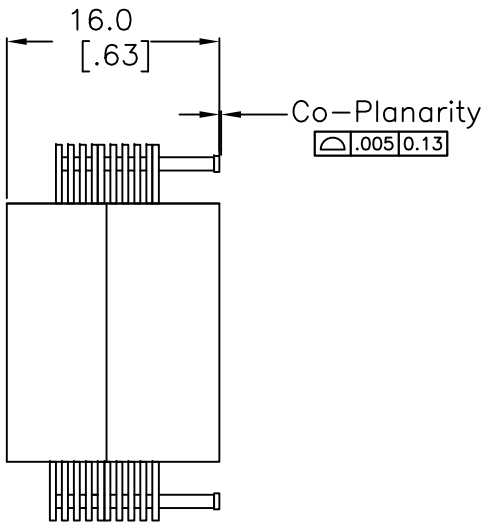
Champs No. LTCP26-0402

Customer Part #:

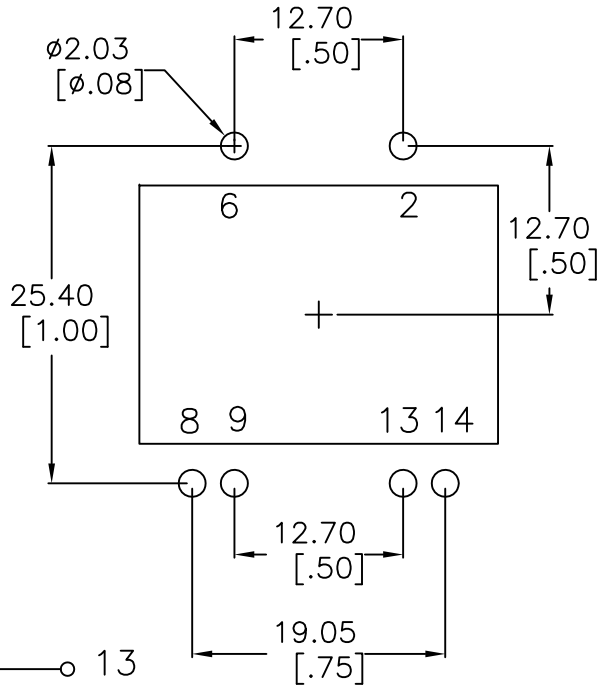
ISSUE A | REV 05

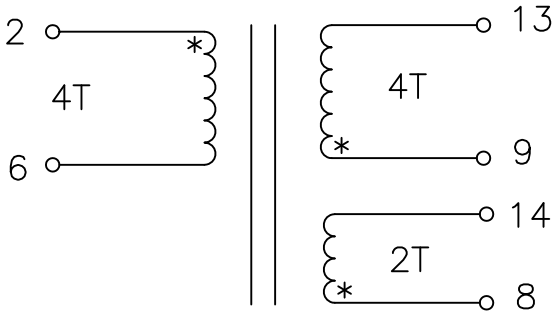
SIZE | SCALE 2:1





SUGGESTED PAD LAYOUT





Electrical Information:

1. INDUCTANCE [2–6] = 90 uH Nom, 70 Min. @100kHz/1.0V
2. LEAKAGE INDUCTANCE [2–6] : SHORT 8,14 = 30nH Nom @100kHz
3. DCR [2–6] = 4.0 mohms Nom, 4.51 Max DCR [9–13] = 4.0 mohms Nom, 4.51 Max DCR [8–14] = 300 mohms Max.
4. CAPACITANCE 2,6 to 9,13 = 1000 pF Max @100kHz
5. DIELECTRIC ISOLATION :1500 VDC [2–6] : [8–14] || 500 VDC CORE :[2,6] : [8,9]
6. RoHS Level 6/6 Compliant || Halogen Free || REACH Compliant
7. Weight 32.5 grams Nom, 35 Max
8. Temp Rating –55C to +130C [Inclusive of Temp Rise] Materials to +170C
9. Typical Application DC2199A–B 36–72Vin to 24V 300W Active Clamps Forward

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±
.XX ±
.X ±
ANGLE ±

CHAMPS TECHNOLOGIES

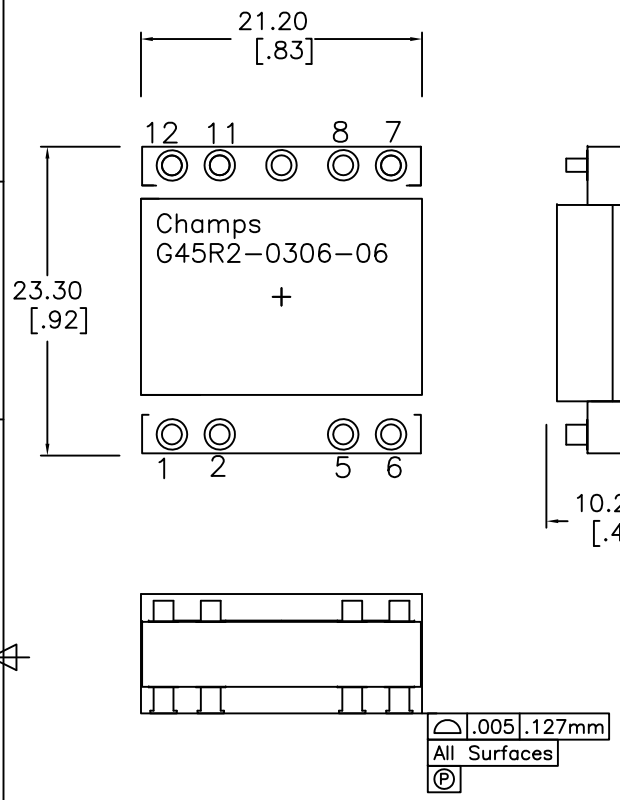
	SIGN	DATE
DRAWN	JL	1/28/15
CHKD	PH	
APPR	DT	

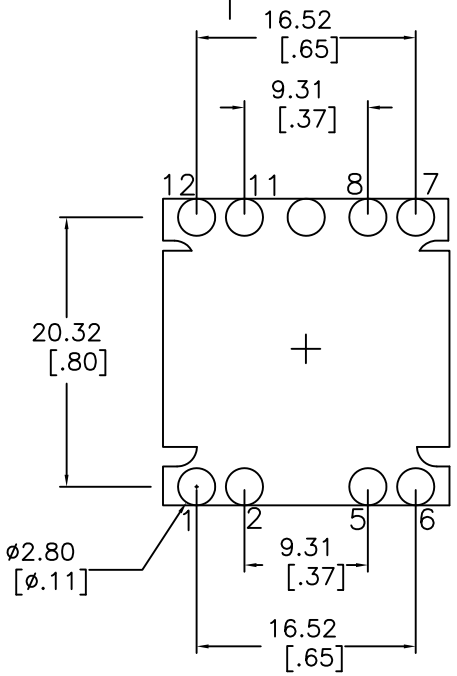
Champs No. LTCP26–0404–S02

Customer Part #:

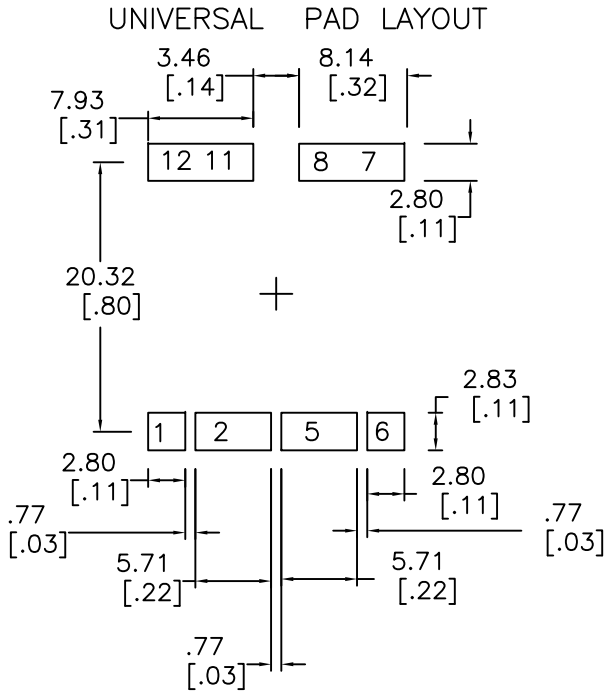
ISSUE A | REV 01

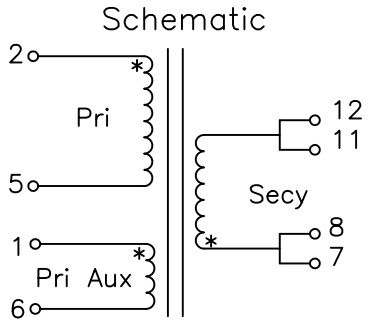
SIZE | SCALE 2:1





SUGGESTED PAD LAYOUT





NOTES:

1. TURNS RATIO [2–5] : [7,8 – 11,12] = 0.50 +/–2% || [2–5] : [1–6] =0.50 +/–2%
2. DCR [2–5]= 2.1 mohm Nom., [7,8 – 11,12]= 8.6 mohm Nom., [1–6]= 300 mohm Max
3. Inductance [2–5]= 27 uH +–25% 10KHz, 0.1 VRMS @ 25C
4. Leakage Inductance [2–5] Short [7,8–11,12] = 0.07uH Nom, 0.10 uH Max @100 KHz
5. Dielectric Strength [2–5] to [7–12] 1750 VDC | [1–6] to [2–5] 500Vrms 60 Hz
   [1–6],[2–5] to CORE 1750 VDC, [7–12] to CORE 500 VDC
6. Weight 16.8 grams Nom | RoHS Level 6/6 Compliant | Pin Composition Sn/Ag 96/4
7. Operating Temperature –55C to +130C [Inclusive of Temp Rise]

ORDERING INFORMATION:

1. Order Per Part # G45R2–0306–06. Parts ship in trays unless otherwise specified.
2. For Tape & Reel packaging append "R" to PN, e.g. G45R2–0306–06–R.
   Tape & Reel packaging is in accordance with Champs Dwg T40–4600014.
3. Std 180 parts per reel | 40 parts per tray.

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±.254 MM
.XX ±.76 MM
.X
ANGLE ±

CHAMPS TECHNOLOGIES

	SIGN	DATE
DRAWN		
CHKD		
APPR	HE	4/29/08

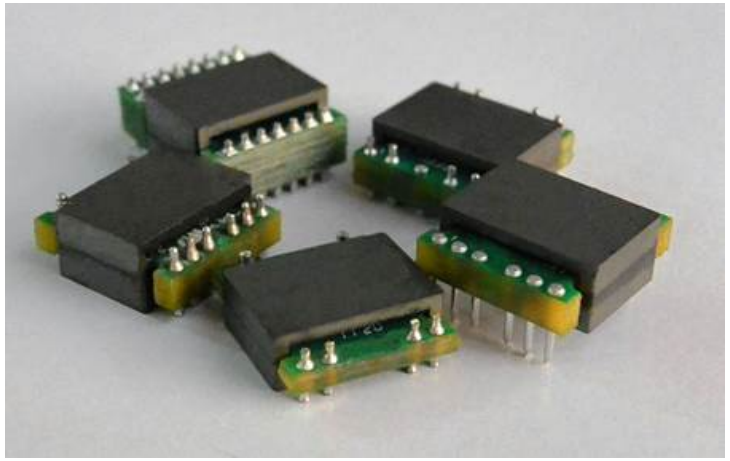
Champs No. G45R2 0306–06

Customer Part #:

ISSUE A | REV 00

SIZE | SCALE 2:1

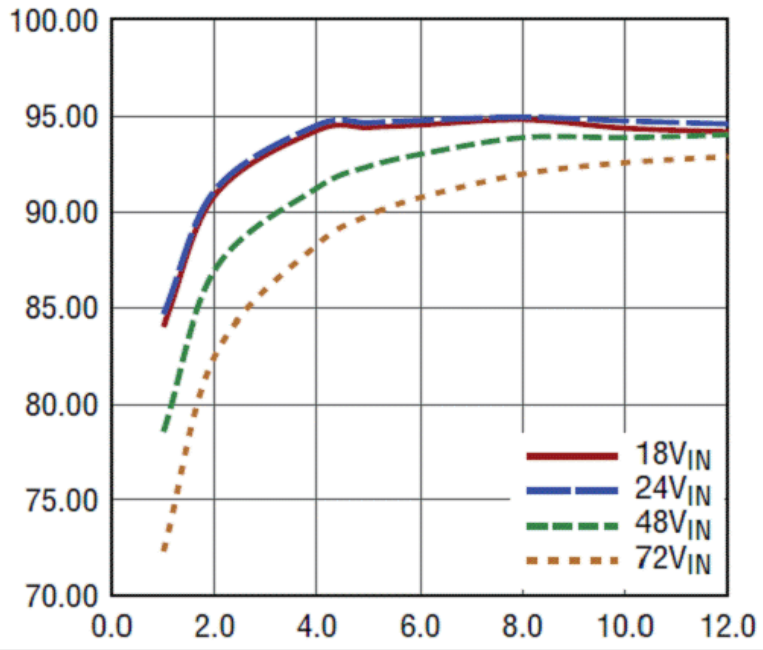
DC1994A Reference Design



- 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

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

Champs PN	V_{in} (Min)	V_{in} (Max)	V_{out}	I_o
G45AH2-0404-04	18	72	12.0	12.0



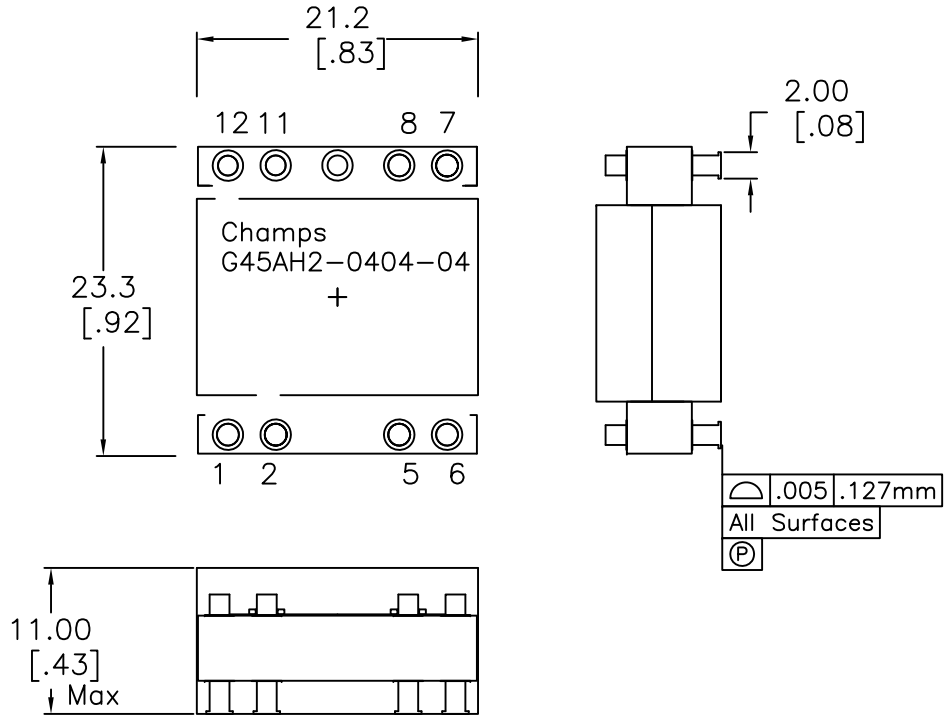
Linear Technology DC1994A URL: http://www.linear.com/solutions/4698

®Linear Technology Inc

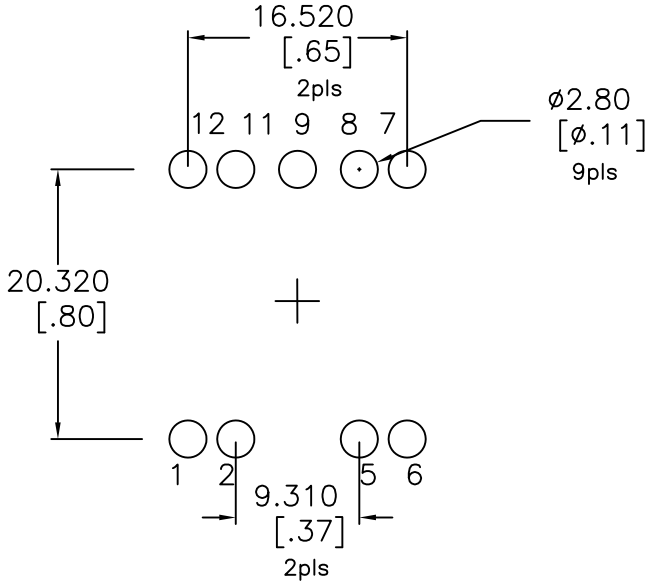
- **Surface Mount Discrete Component Design or Discrete Component Implemented in Pad-to-Pad Mounting.**
- **SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month**

Notes:
1. Consult Linear Tech Ref Design BOM and Schematic for exact device as specified for use by Linear in that Reference Design.
2. In all cases Champs Technologies makes no representation as to suitability of the Reference Design itself as that is the design responsibility and Intellectual Property of Linear Technology.
3. Champs Technologies responsibility is limited to the use of its component as described in the Data Sheet and any warranty express or implied is limited to component replacement if found defective.

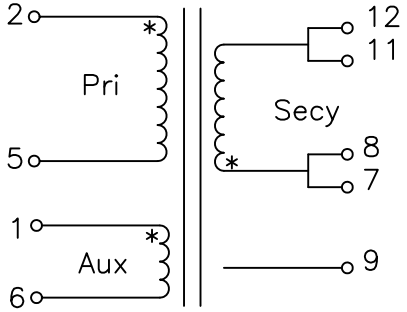
MECHANICAL DIMENSIONS [TOP VIEW]



SUGGESTED PAD LAYOUT [TOP PCB VIEW]



Schematic



NOTES:

1. TURNS RATIO [7,8–11,12] : [2–5] & [1–6] = 1.00 ±2%
2. DCR [2–5]=4.0 mohm Nom, [7,8–11,12]=4.0 mohm Nom, [1–6]= 300 mohm Max
3. Inductance [2–5] = 65 uH Nom, 48 uH Min 100KHz, 1 VRMS @ 25C
4. Leakage Inductance [2–5] Short [7–11] = 30 nH Nom @100 KHz
5. Dielectric Strength [2,5] to [7–11] 1750 VDC,
   [1–6] to [2–5] 500VAC | [1–6],[2–5] to CORE 1750 VDC, [7–11] to CORE 500 VDC
6. Weight 16 grams Max || Pin Composition is 96/4 Sn–Ag.
7. This device is certified RoHS Compliant in materials used and construction.
8. Temperature Range: –40C to +85C operating | –55C to +155C Non–Operating

ORDERING INFORMATION:

1. Order Per Part # G45AH2–0404–04 Parts ship in trays unless otherwise specified.
2. For Tape & Reel packaging append "R" to PN, e.g. G45AH2–0404–04–R.
   Tape & Reel packaging is in accordance with Champs Dwg T40–4600014.
3. Std 180 parts per reel | 40 parts per tray.

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED
.XXX ± 0.254
.XX ± 0.38
.X ± 0.78
ANGLE ±

CHAMPS TECHNOLOGIES

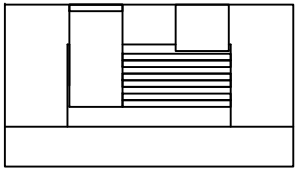
	SIGN	DATE
DRAWN	DK	10/26/09
CHKD		
APPR	HE	9/11/13

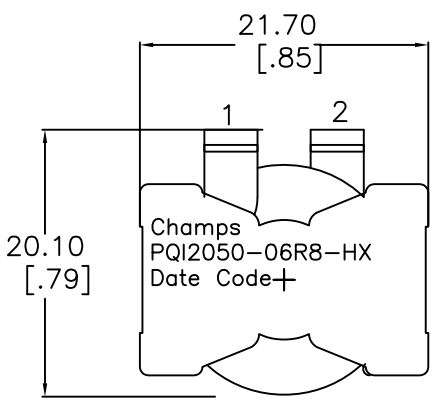
Champs–Tech PN G45AH2 0404–04

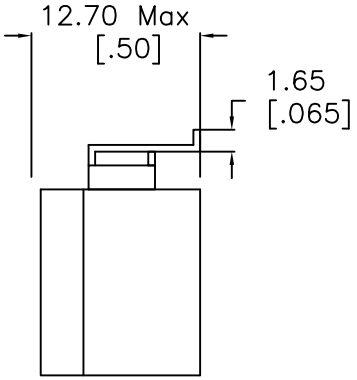
Customer Part #:

ISSUE A | REV 00

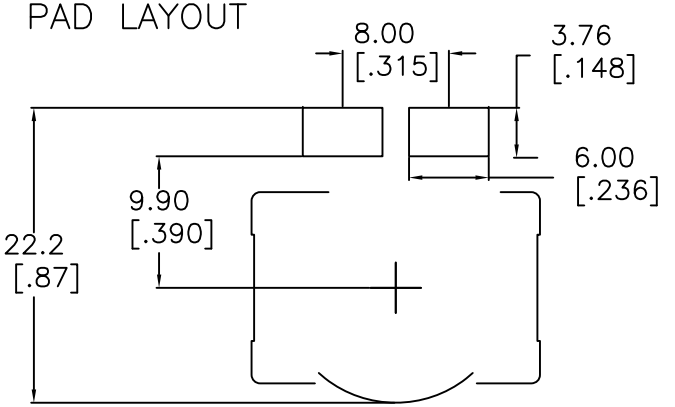
SIZE | SCALE 2:1

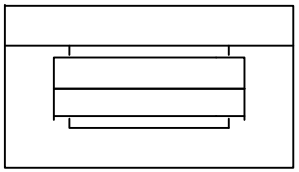




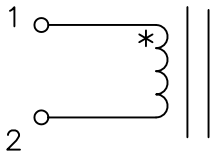


SUGGESTED
PAD LAYOUT





Schematic



NOTES:
1. INDUCTANCE [1–2] = 6.8uH Nom, 6.1 Min. @100kHz 1.0V 16Adc
2. INDUCTANCE [1–2] = 5.6 uH Min @100kHz 1.0V 19Adc
3. DCR [1–2] = 1.80 mohms Nom, 2.10 Max
4. DIELECTRIC ISOLATION > 500 VDC [1–2] : CORE
5. SATURATION CURRENT @25C = 19.0Adc | @85C = 17.5Adc
6. HEATING CURRENT FOR 40C RISE AT 25C AMBIENT = 30 Adc
7. Temp Rating –55C to +130C [Inclusive of Temp Rise]
8. RoHS LEvel 6/6 Compliant || REACH Compliant

No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±
.XX ±
.X
ANGLE ±

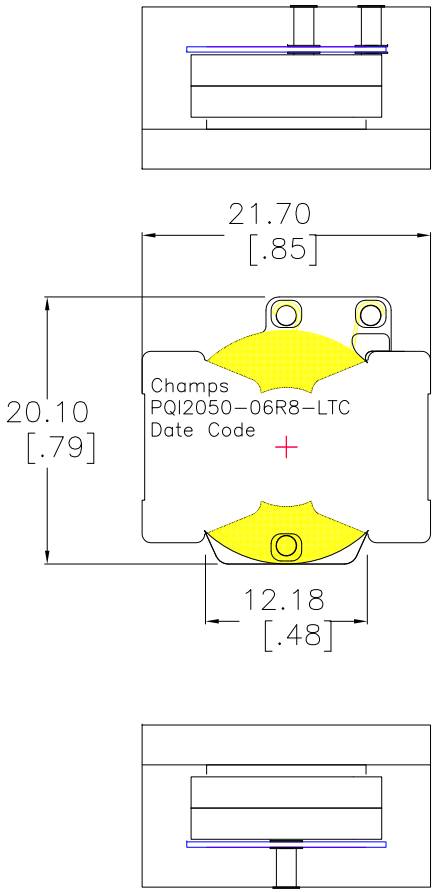
CHAMPS TECHNOLOGIES

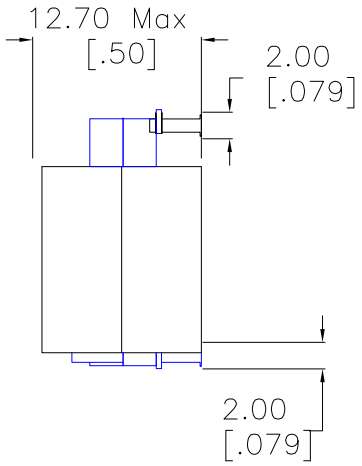
	SIGN	DATE
DRAWN	DK	3/31/10
CHKD		
APPR	HE	8/27/13

Champs No. PQI2050-06R8-HX

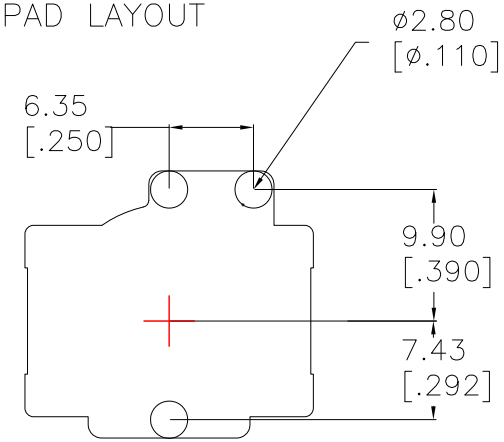
Customer Part #: INDUCTOR | ISSUE A | REV 00

SIZE | SCALE 2:1



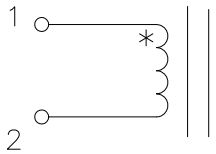


SUGGESTED PAD LAYOUT



INDUCTANCE [1-2] = 6.8uH Nom, 6.1 Min. @100kHz 1.0V 16Adc
INDUCTANCE [1-2] = 5.6 uH Min @100kHz 1.0V 19Adc
DCR [1-2] = 2.83 mohms Nom, 3.34 Max
DIELECTRIC ISOLATION > 500 VDC [1-2] : CORE
SATURATION CURRENT @25C = 19.0Adc | @85C = 17.5Adc
HEATING CURRENT FOR 40C RISE AT 25C AMBIENT = 25 Adc

Schematic



No.	DESCRIPTION REVISIONS	DATE	APPR

THIRD ANGLE PROJECTION

CHAMPS TECHNOLOGIES

TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±
.XX ±
.X
ANGLE ±

	SIGN	DATE
DRAWN	DK	8/20/08
CHKD		
APPR	HE	8/27/13

Champs No. PQI2050-06R8-LTC
Customer Part #: INDUCTOR
ISSUE A
REV 00
SIZE
SCALE 2:1