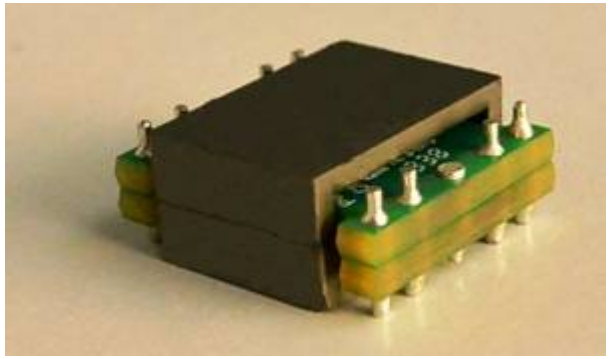
Champs Technologies Support of Linear Technology DC1317A Reference Designs



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.

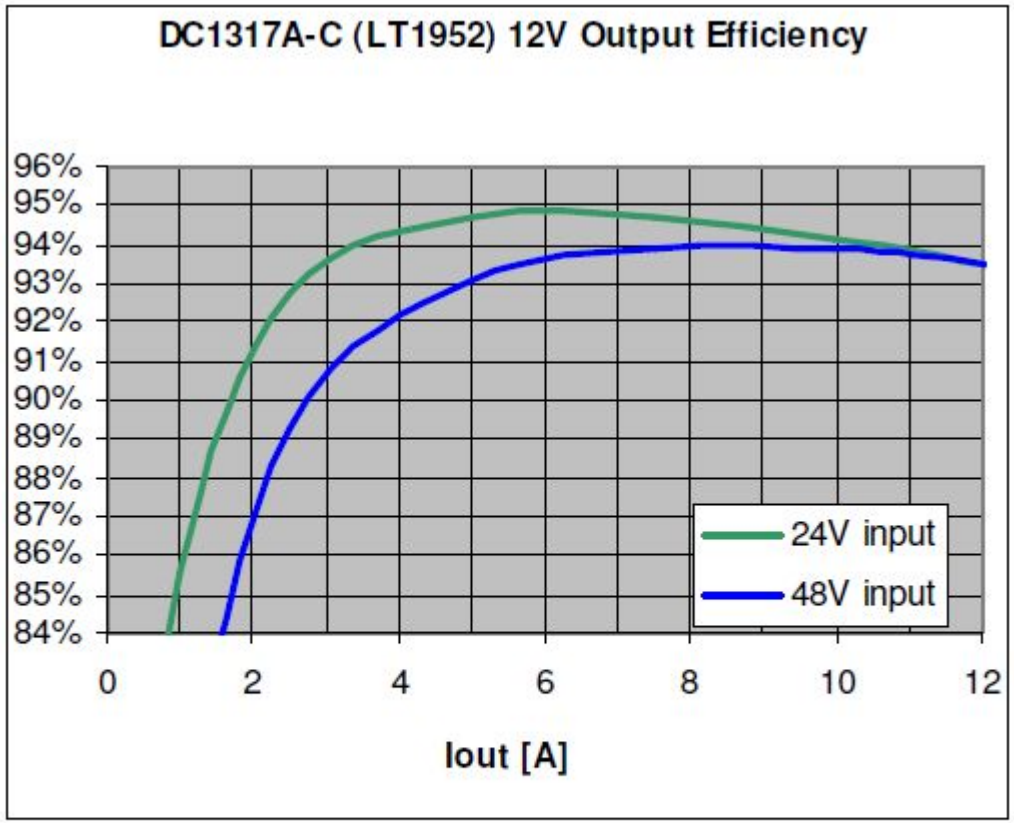
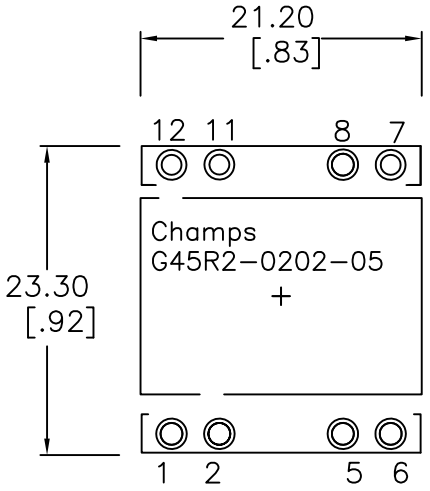


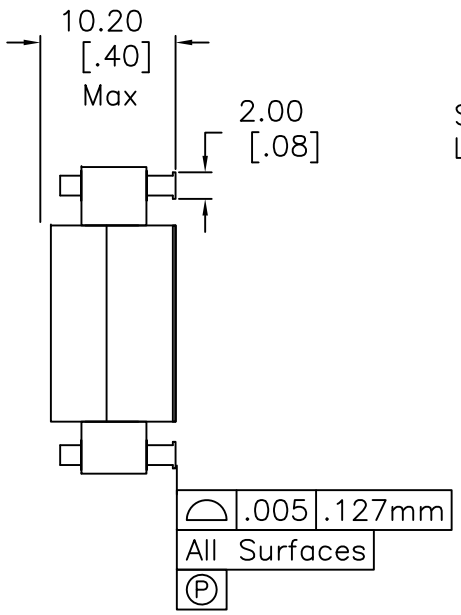
Figure 3. High efficiency of DC1317A-C allows the board to be used in thermally critical applications

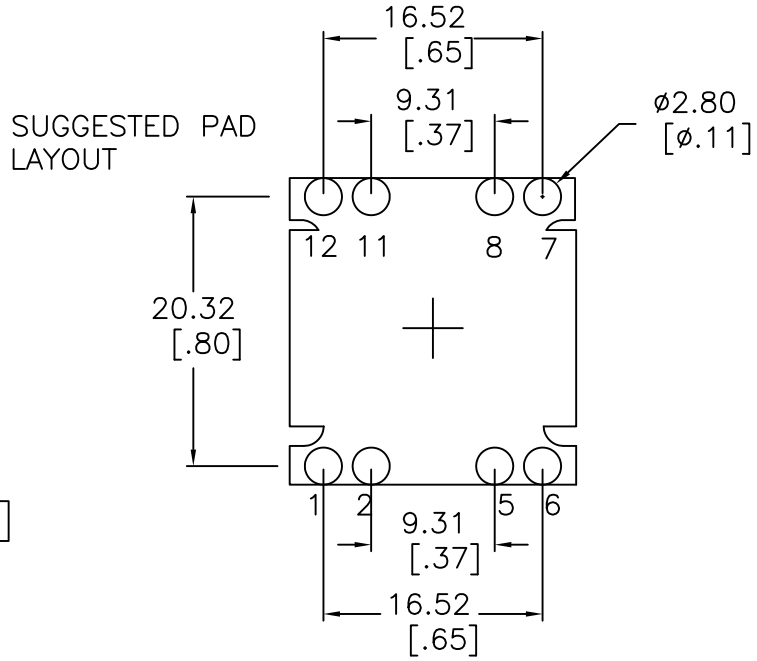
Options supplied as discrete component or integrated into a complete DC-DC Converter Module:

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.

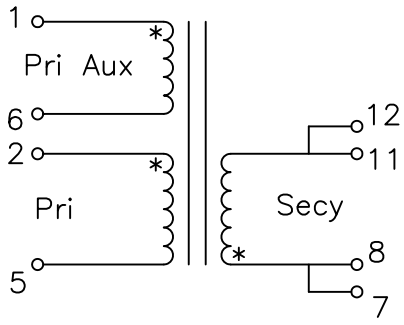
- SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month.







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

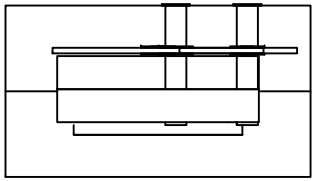
THIRD ANGLE PROJECTION

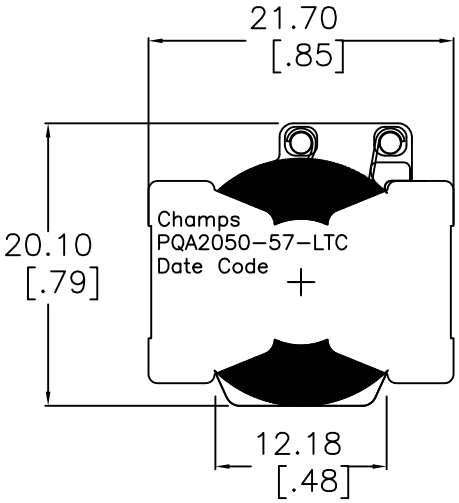
CHAMPS TECHNOLOGIES

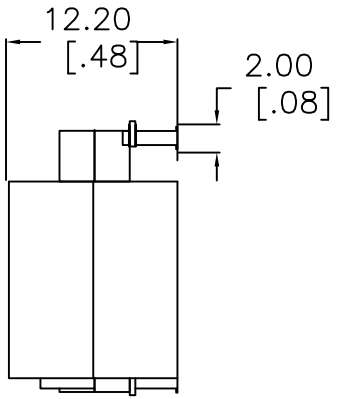
TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED
.XXX ±.254 MM
.XX ±.76 MM
.X
ANGLE ±

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

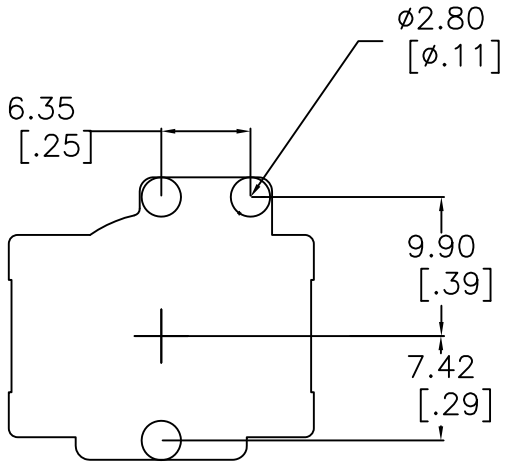
Champs No. G45R2 0202–05
Customer Part #:
ISSUE A
REV 00
SIZE
SCALE 2:1

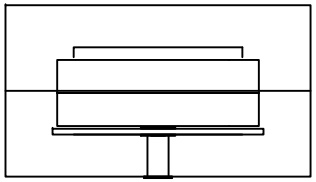




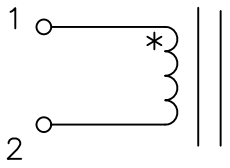


SUGGESTED
PAD
LAYOUT
Rounded
Pad





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

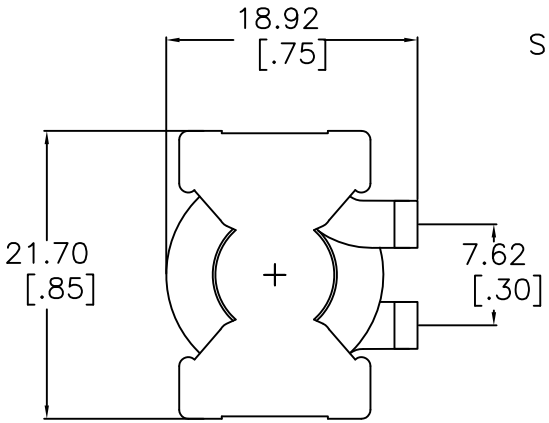
THIRD ANGLE PROJECTION

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

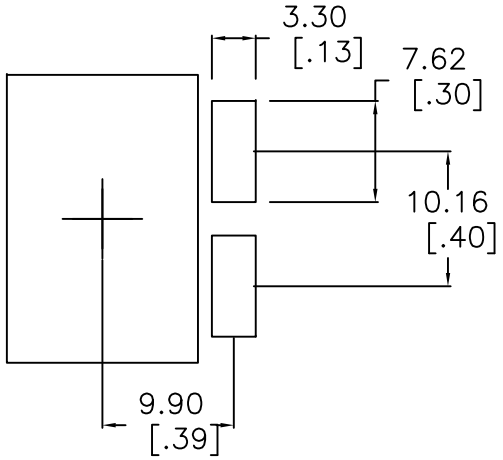
CHAMPS TECHNOLOGIES

	SIGN	DATE
DRAWN	HE	8/20/08
CHKD		
APPR		

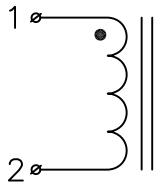
Champs No. PQA2050-57-LTC
Customer Part #: INDUCTOR
ISSUE A
REV 00
SIZE
SCALE 2:1

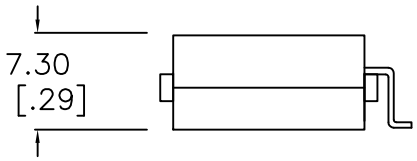


SUGGESTED PAD LAYOUT



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