

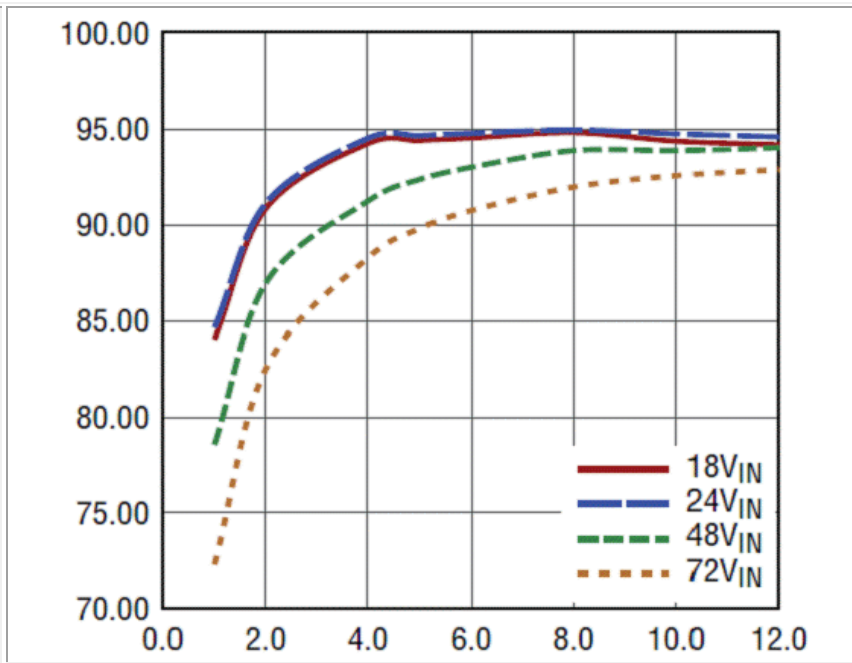
DC1994A Reference Design



- 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>

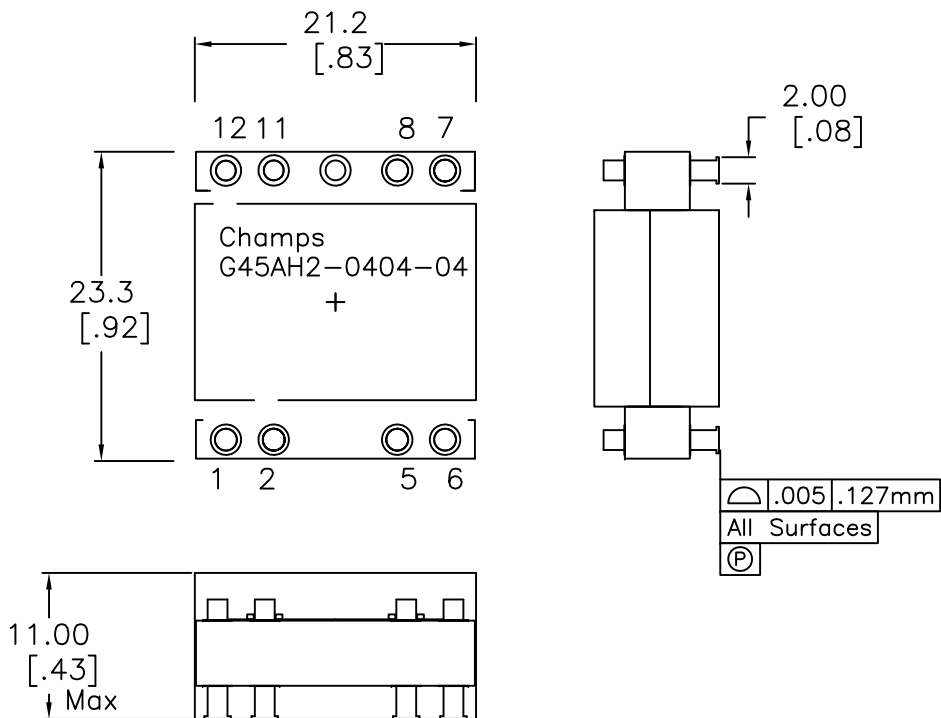
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- **Surface Mount Discrete Component Design or Discrete Component Implemented in Pad-to-Pad Mounting.**
- **SMT Component Assembly of PCB Including Planar Magnetics Inclusive of Converter Testing. Volume capacity 100K per month**

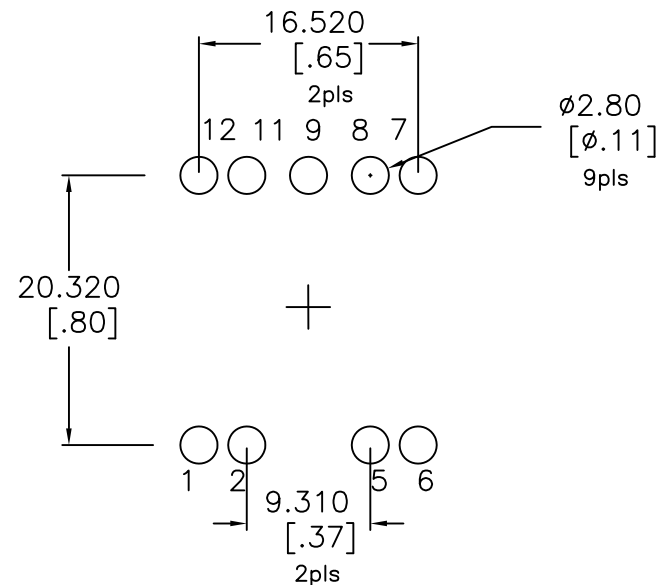
Notes:

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]



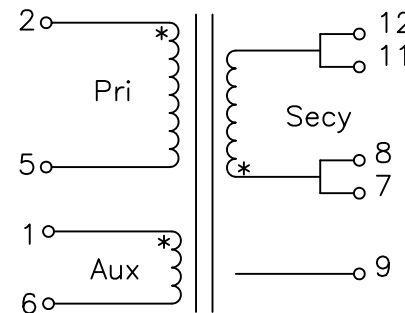
SUGGESTED PAD LAYOUT [TOP PCB VIEW]



- 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.

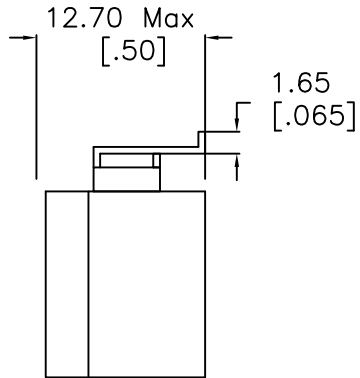
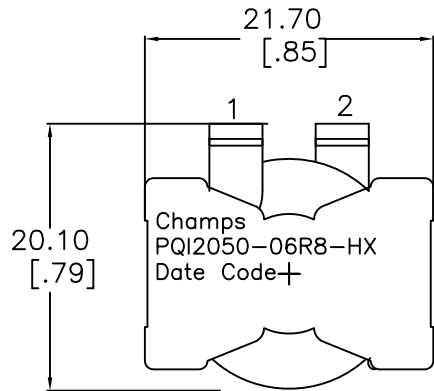
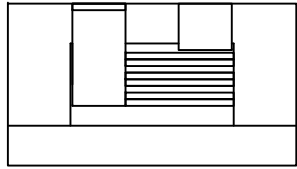
Schematic



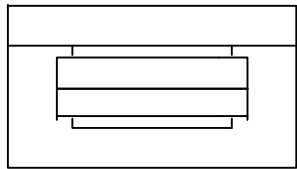
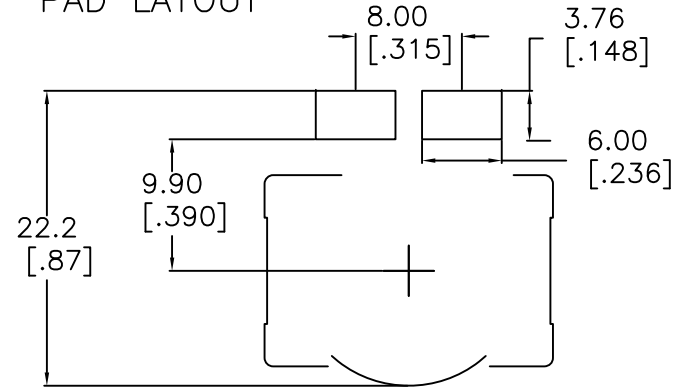
No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES/UNITS in MM UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs-Tech PN G45AH2 0404-04
.XXX ± 0.254	.XX ± 0.38	DRAWN DK	10/26/09	Customer
.X ± 0.78	ANGLE ±	CHKD		Part #:
		APPR HE	9/11/13	ISSUE A REV 00
		SIZE		SCALE 2:1

A
B
C
D
E
F

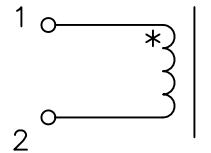
1 2 3 4 5 6 7 8



SUGGESTED PAD LAYOUT



Schematic



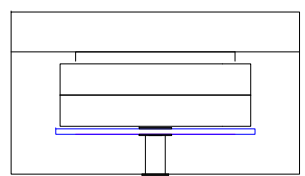
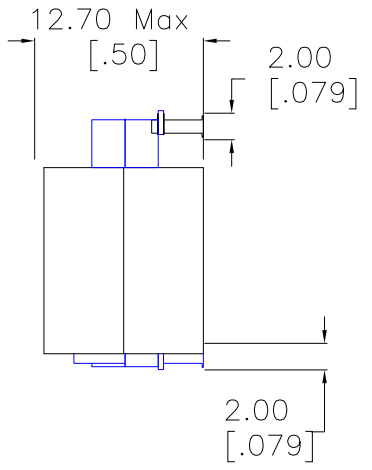
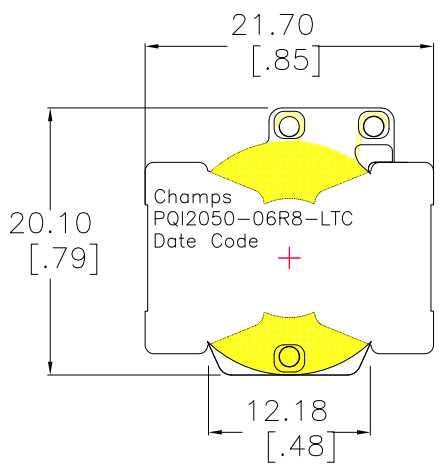
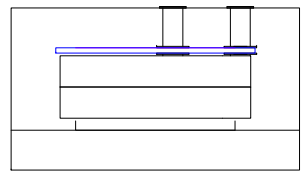
NOTES:

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 L E vel 6/6 Compliant || REACH Compliant

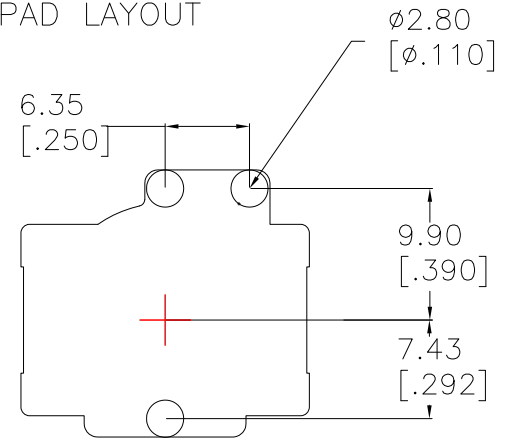
No.	DESCRIPTION	REVISIONS	DATE	APPR
THIRD ANGLE PROJECTION				
CHAMPS TECHNOLOGIES				
TOLERANCES +/- 1.0 UNLESS OTHERWISE INDICATED		SIGN	DATE	Champs No. PQI2050-06R8-HX
DRAWN	DK	3/31/10	Customer	INDUCTOR
CHKD			Part #:	INDUCTOR
APPR	HE	8/27/13	SIZE	SCALE 2:1
			ISSUE	REV
			A	00

A
B
C
D
E
F

1 2 3 4 5 6 7 8

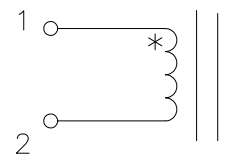


SUGGESTED PAD LAYOUT



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		SIGN	DATE	Champs No. PQI2050-06R8-LTC		
.XXX ±	DK	8/20/08	Customer		ISSUE	REV
.XX ±	CHKD		Part #: INDUCTOR		A	00
.X ANGLE ±	APPR	HE	8/27/13	SIZE	SCALE 2:1	