

L6725: 20A Demoboard

Data Brief

General description

L6725 demoboard realizes in a four layer PCB a step-down DC/DC converter and shows the operation of the device in a general purpose application. The input voltage can range from 4.5 V to 14 V and the output voltage is at 3.3 V. The module can deliver an output current in excess of 20 A. The switching frequency is set at 250 KHz (controller free-running F_{SW}) but it can be set to 500 KHz acting on the EAREF pin.

Demoboard picture

1 Features

Figure 1. Demoboard schematic

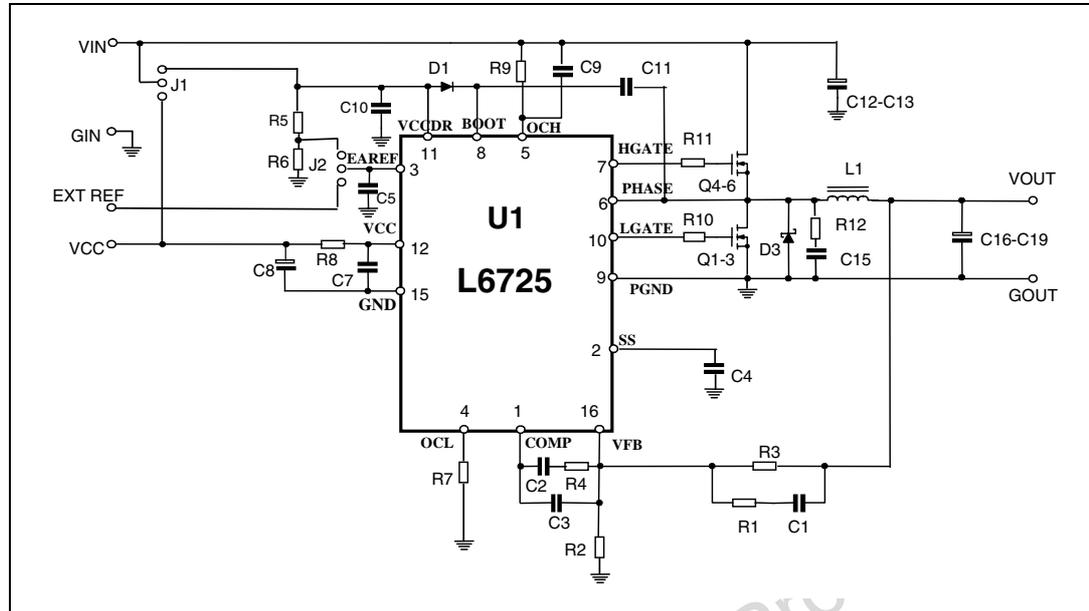


Table 1. Demoboard part list

Reference	Value	Manufacturer	Package	Supplier
R1	1 kΩ	Neohm	SMD 0603	IFARCAD
R2	1 kΩ	Neohm	SMD 0603	IFARCAD
R3	4.7kΩ			
R4	2.7 kΩ	Neohm	SMD 0603	IFARCAD
R5	0 Ω	Neohm	SMD 0603	IFARCAD
R6	N.C.	Neohm	SMD 0603	IFARCAD
R7	2 kΩ	Neohm	SMD 0603	IFARCAD
R8	10 Ω	Neohm	SMD 0603	IFARCAD
R9	1.5 kΩ	Neohm	SMD 0603	IFARCAD
R10	2.2 Ω	Neohm	SMD 0603	IFARCAD
R11	2.2 Ω	Neohm	SMD 0603	IFARCAD
R12	N.C.	Neohm	SMD 0603	IFARCAD
C1	4.7 nF	Kemet	SMD 0603	IFARCAD
C2	47 nF	Kemet	SMD 0603	IFARCAD
C3	1 nF	Kemet	SMD 0603	IFARCAD
C4	100 nF	Kemet	SMD 0603	IFARCAD
C5	100 nF	Kemet	SMD 0603	IFARCAD

Table 1. Demoboard part list (continued)

Reference	Value	Manufacturer	Package	Supplier
C6	N.C.	/	/	/
C7	100 nF	Kemet	SMD 0603	IFARCAD
C8	4.7 μ F 20 V	AVX	SMA6032	IFARCAD
C9	1 nF	Kemet	SMD 0603	IFARCAD
C10	1 μ F	Kemet	SMD 0603	IFARCAD
C11	220 nF	Kemet	SMD 0603	IFARCAD
C12-13	3X 15 μ F	/	/	ST (TDK)
C15	N.C.	/	/	/
C16-19	2X 330 μ F	/	/	ST (poscap)
L1	1.8 μ H	Panasonic	SMD	ST
D1	STPS1L30M	ST	DO216AA	ST
D3	N.C.	/	/	/
Q1-Q2	STS12NH3LL	ST	SO8	ST
Q4-Q5	STS25NH3LL	ST	SO8	ST
U1	L6725	ST	SO16N	ST

Table 2. Other inductor manufacturer

Manufacturer	Series	Inductor value (μ H)	Saturation current (A)
WURTH ELEKTRONIC	744318180	1.8	20
SUMIDA	CDEP134-2R7MC-H	2.7	15
EPCOS	HPL 13 T640	1.4	22
TDK	SPM12550T-1R0M220	1	22
TOKO	FDA1254	2.2	14
COILTRONICS	HCF1305-1R0	1.15	22
	HC5-1R0	1.3	27

Table 3. Other capacitor manufacturer

Manufacturer	Series	Capacitor value(μ F)	Rated voltage (V)
TDK	C4532X5R1E156M	15	25
	C3225X5R0J107M	100	6.3
NIPPON CHEMI-CON	25PS100MJ12	100	25
PANASONIC	ECJ4YB0J107M	100	6.3

Figure 2. Demoboard efficiency

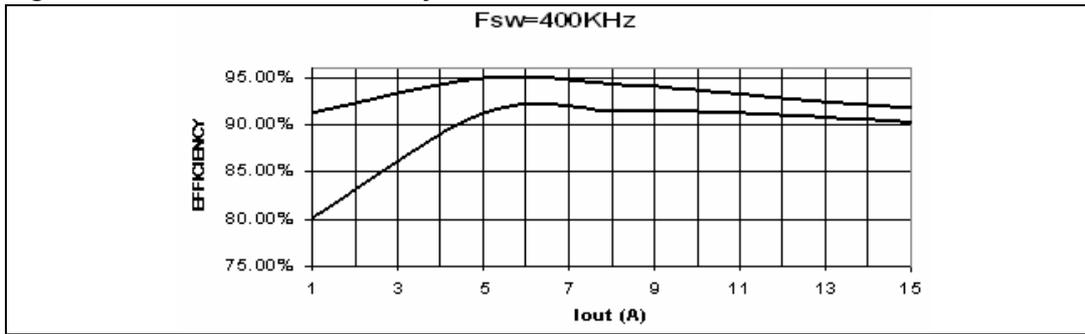
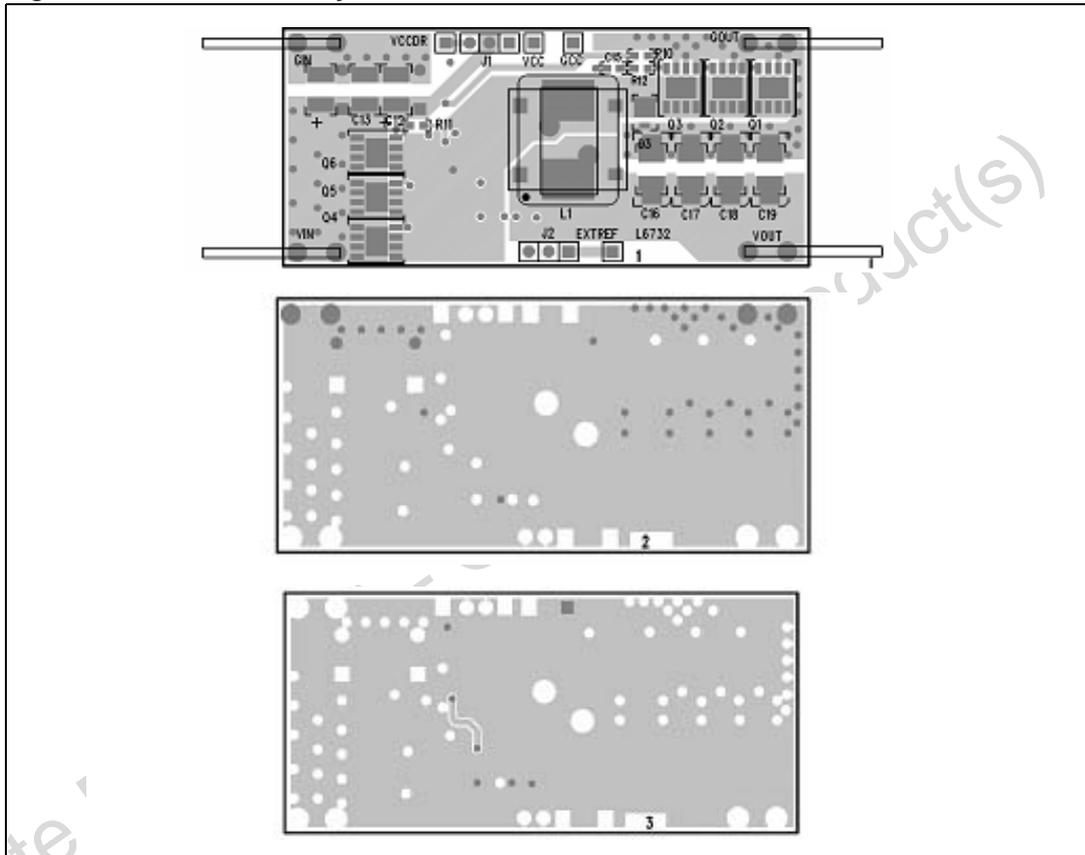


Figure 3. Demoboard layout



2 Revision history

Table 4. Revision history

Date	Revision	Changes
03-Jan-2007	1	First issue

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