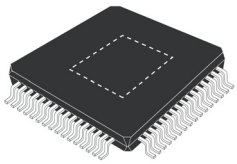
L6713 - L6714

3,4 PHASE CONTROLLER FOR INTEL VR10,VR11 AND AMD 6BIT CPUS

Data Brief

Features

- 0.5% OUTPUT VOLTAGE ACCURACY
- 7/8 BIT PROGRAMMABLE OUTPUT UP TO 1.60000V - INTEL VR10.x, VR11 DAC
- 6 BIT PROGRAMMABLE OUTPUT UP TO 1.5500V - AMD 6BIT DAC
- HIGH CURRENT INTEGRATED GATE DRIVERS
- FULL DIFFERENTIAL CURRENT SENSING ACROSS INDUCTOR OR LOW SIDE MOSFET
- PIN-TO-PIN COMPATIBILITY ALLOWS SYSTEM SCALABILITY
- EMBEDDED VRD THERMAL MONITOR
- INTEGRATED REMOTE SENSE BUFFER
- DYNAMIC VID MANAGEMENT
- ADJUSTABLE REFERENCE VOLTAGE OFFSET
- PROGRAMMABLE SOFT START
- PROGRAMMABLE OVER VOLTAGE PROTECTION
- PRELIMINARY OVER VOLTAGE
- CONSTANT OVER CURRENT PROTECTION
- OSCILLATOR INTERNALLY FIXED AT 150kHz EXTERNALLY ADJUSTABLE
- OUTPUT ENABLE
- SS_END / PGOOD SIGNAL
- TQFP64 10x10mm PACKAGE WITH EXPOSED PAD



TQFP64 (Exposed Pad)

Description

L6713, L6714 implement a three/four phase stepdown controller with 120º/90º phase-shift between each phase with integrated high current drivers in a compact 10x10mm body package with exposed pad. Pin-to-pin compatibility allows system scalability: a 4 phase application can be easily downgraded to 3 phases by removing one phase. The device embeds selectable DACs: the output voltage ranges up to 1.60000V (both Intel VR10.x and VR11 DAC) or up to 1.5500V (AMD 6BIT DAC) managing D-VID with ±0.5% output voltage accuracy over line and temperature variations. Additional programmable offset can be added to the reference voltage with a single external resistor. The controller assures fast protection against load over current and under / over voltage (in this last case also before UVLO). In case of over-current the system works in Constant Current mode until UVP. Selectable current reading adds flexibility to the design allowing current sense across inductor or LS mosfets. System Thermal Monitor is also provided allowing system protection from over-temperature conditions.

Applications

- HIGH CURRENT VRD FOR DESKTOP CPUs
- WORKSTATION AND SERVER CPU POWER SUPPLY
- VRM MODULES

Order codes

Part number	Package	Packing
L6713 - L6714	TQFP64 (Exposed Pad)	TUBE
L6713TR - L6714TR	TQFP64 (Exposed Pad)	TAPE & REEL

Package Mechanical Data

In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second Level Interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

Table 1. TQFP64 Mechanical Data

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.20			0.0472
A1	0.05		0.15	0.002		0.006
A2	0.95	1.00	1.05	0.0374	0.0393	0.0413
b	0.17	0.22	0.27	0.0066	0.0086	0.0086
c	0.09		0.20	0.0035		0.0078
D	11.80	12.00	12.20	0.464	0.472	0.480
D1	9.80	10.00	10.20	0.386	0.394	0.401
D2	2.00			0.787		
D3		7.50			0.295	
E	11.80	12.00	12.20	0.464	0.472	0.480
E1	9.80	10.00	10.20	0.386	0.394	0.401
E2	2.00			0.787		
E3		7.50			0.295	
e		0.50			0.0197	
L	0.45	0.60	0.75	0.0177	0.0236	0.0295
L1		1.00			0.0393	
k	0°	3.5°	7°	0°	3.5°	7°
ccc			0.080			0.0031

Table 2. TQFP64 Package Dimensions

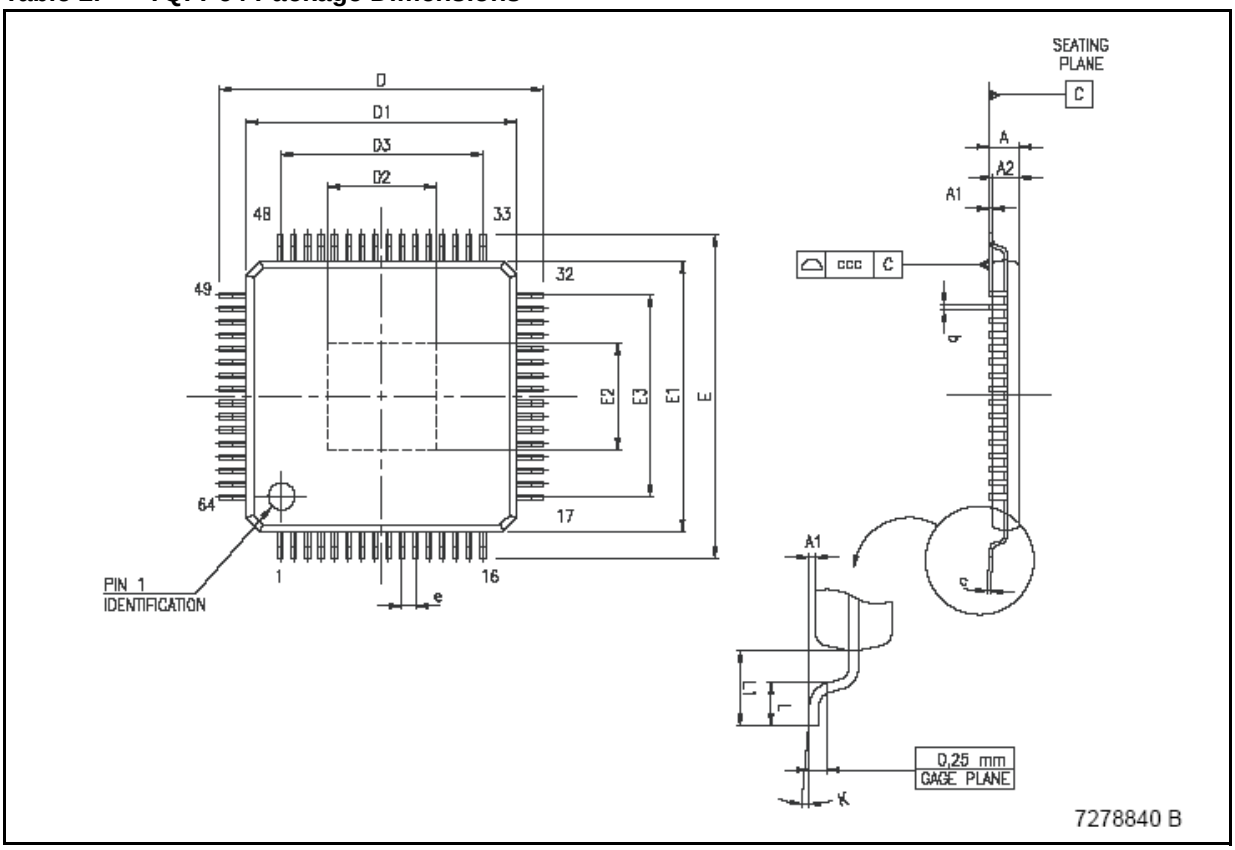


Table 3. Revision History

Date	Revision	Description of Change
5 Oct 2005	1	First Draft