Real-time Video processor LSI for Car Navigation/Car Entertainment Systems
BU1573KV

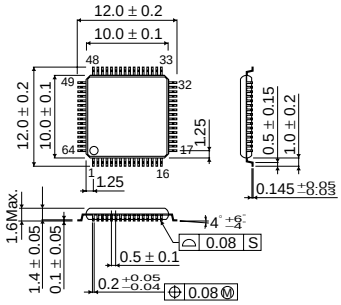
●Outline

The BU1573KV is a real-time video processing LSI featuring ROHM's unique AIE (Adaptive Image Enhancer) developed specifically for car navigation and car entertainment systems

●Features

1) Supports a wide range of resolutions, from QCIF (176 x 144) to WVGA+ (864 x 480)
2) Compatible with 80 series CPU and RGB interfaces.
3) INPUT/OUTPUT data format compatible with RGB=6:6:6,5:6:5.
4) Equipped with multiple operation modes: image enhance, analysis, through, sleep.
5) Register setting possible via indirect 80 series CPU addressing or 2-line serial interface (I^2C).
6) PWM output for the LCD backlight
7) Build-in edge-emphasizing filter and gamma correction

●Dimensions (Unit: mm)



VQFP64
(BU1573KV)

●Applications

Car navigation/Car entertainment systems/Car monitor

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Supply Voltage 1	VDDIO	-0.3 to +4.2	V
Power Supply Voltage 2	VDD	-0.3 to +2.1	V
Input Voltage	VIN	-0.3 to VDDIO+0.3	V
Storage Temperature Range	Tstg	-40 to +125	°C
Power Dissipation	PD	750*1	mW

*1 Derated at 7.5mW/ °C above 25 °C.

●Operating Conditions

Parameter	Symbol	Rating	Unit
Power Supply Voltage 1	VDDIO	2.70 to 3.60(Typ: 3.0V)	V
Power Supply Voltage 2	VDD	1.40 to 1.60 (Typ: 1.50V)	V
Input Voltage Range	VIN-VDDIO	0 to VDDIO	V
Operating Temperature Range	Topr	-40 to +85	°C

Current specifications in effect of 1st. May 2007.

Excellence in Electronics

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●Electrical Characteristics

(Unless otherwise specified, VDD = 1.50 V, VDDIO = 3.0 V, GND = 0.0 V, Ta = 25°C, f_{IN} = 36.0 MHz)

Parameter	Symbol	Limits			Unit	Condition
		MIN.	TYP.	MAX.		
Input Frequency	f_{IN}	-	-	36.0	MHz	DCKI (DUTY45% - 55%)
Operating Current Consumption	IDD1	-	10	-	mA	In the enhance mode (36 MHz in operation)
Standby Current Consumption	IDDst	-	-	30	uA	In the sleep mode, input pin: GND or OPEN
Input “H” Current	IIH	-10	-	10	uA	VIH = VDDIO
Input “L” Current	IIL	-10	-	10	uA	VIL = GND
Input “H” Voltage 1	VIH1	VDDIO ×0.8	-	VDDIO +0.3	V	Normal input (including input mode of I/O terminal)
Input “L” Voltage 1	VIL1	-0.3	-	VDDIO ×0.2	V	Normal input (including input mode of I/O terminal)
Input “H” Voltage 2	VIH2	VDDIO ×0.85	-	VDDIO +0.3	V	Hysteresis input (RESETB, DCKI, LCDCSBI, LCDWRBI, LCDRDBI, SDA, SDC)
Input “L” Voltage 2	VIL2	-0.3	-	VDDIO ×0.15	V	Hysteresis input (RESETB, DCKI, LCDCSBI, LCDWRBI, LCDRDBI, SDA, SDC)
Hysteresis Voltage Range	Vhys	-	0.5	-	V	Hysteresis input (RESETB, DCKI, LCDCSBI, LCDWRBI, LCDRDBI, SDA, SDC)
Output “H” Voltage	VOH	VDDIO -0.4	-	VDDIO	V	IOH = -1.0 mA (DC) (including output mode of I/O terminal)
Output “L” Voltage	VOL	0.0	-	0.4	V	IOL = 1.0 mA (DC) (including output mode of I/O terminal)

●Block Diagram