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Category Audio & Video

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Audio & Video

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Audio Amplifiers

Automotive Speaker amplifiers

1.2W Monaural Class-AB Speaker Amplifiers													
Part No.	Supply Voltage (V)	Quiescent Current (mA)	Standby Current (μA)	Voltage Gain (dB)	Output Power (W)	Input Impedance Z_{in} (kΩ)	Built-in Amplifier Resistance		Distortion (%)	Output Noise Voltage (μVrms)	Package	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
							Ri (kΩ)	Rf (kΩ)					
BD78306EFJ-M	4.0 to 5.5	2.5	0.1	6.0 (Po=0.5W)	1.2 (THD+N=1%)	45	90	90	0.05 (Po=1W)	15	HTSOP-J8	FSs	YES
☆BD78308EFJ-M				8.0 (Po=0.5W)		40	80	80	0.05 (Po=1W)	16	HTSOP-J8	FSs	YES
BD78310EFJ-M				10.0 (Po=0.5W)		35	70	110	0.06 (Po=1W)	17	HTSOP-J8	FSs	YES
☆BD78312EFJ-M				12.0 (Po=0.5W)		30	60	120	0.06 (Po=1W)	19	HTSOP-J8	FSs	YES
☆BD78314EFJ-M				14.0 (Po=0.5W)		25	50	130	0.07 (Po=1W)	22	HTSOP-J8	FSs	YES
☆BD78316EFJ-M				16.0 (Po=0.5W)		20	40	140	0.09 (Po=1W)	24	HTSOP-J8	FSs	YES
☆BD78318EFJ-M				18.0 (Po=0.5W)		18	36	144	0.10 (Po=1W)	26	HTSOP-J8	FSs	YES
☆BD78320EFJ-M				20.0 (Po=0.5W)		15	30	150	0.12 (Po=1W)	31	HTSOP-J8	FSs	YES
☆BD78322EFJ-M				22.0 (Po=0.5W)		12	24	156	0.15 (Po=1W)	35	HTSOP-J8	FSs	YES
☆BD78324EFJ-M				24.0 (Po=0.5W)		10	20	160	0.17 (Po=1W)	43	HTSOP-J8	FSs	YES
BD78326EFJ-M				26.0 (Po=0.5W)		8	16	164	0.20 (Po=1W)	50	HTSOP-J8	FSs	YES

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*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

☆: Under Development

Speaker Amplifiers

Portable Amplifier 1.9W+1.9W Stereo Speaker Amplifier										
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Standby Current (μA)	Voltage Gain (dB)	Output Power (W)	Distortion (%)	Output Noise Voltage (μVrms)	Package	
BD7836EFV	4.5 to 5.5	1.0	5	0.1	6/10/15.6/21.6	1.9 (VDD=5V, 4Ω, THD+N=1%)	0.1	16	HTSSOP-B20	
Portable Amplifier 1.1W to 1.5W Monaural Speaker Amplifier										
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Standby Current (μA)	Voltage Gain (dB)	Output Power (RL=8Ω, THD=10%)		Distortion (%)	Output Noise Voltage (dBV)	Package
						VCC=3.6V	VCC=5.0V			
BD7830NUV	2.4 to 5.5	0.53	3.2	0	0 to 20	0.77W	1.5W	0.1	-100	VSON008V2030
Portable Amplifiers Analog Input Monaural Class-D Speaker Amplifiers										
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Voltage Gain (dB)	Output Power (W)		Distortion (%)	Output Noise Voltage (μVrms)	ALC Circuit	Package (mm)
BD5460GUL	2.5 to 5.5	0.69	2.0 (VDD=3.6V)	6	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)	0.3 (VDD=3.6V)	30	—	VCSP50L1 1.6x1.6, H=0.55Max
BD5461GUL		0.69	2.0 (VDD=3.6V)	12	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)		40	—	VCSP50L1 1.6x1.6, H=0.55Max
BD27400GUL		0.69	2.9 (VDD=3.6V)	External Variable	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)		40	—	VCSP50L1 1.5x1.5, H=0.55Max
BD5632NUX		0.52	2.7 (VDD=3.6V)	6	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)		40	—	VSON008X2030
BD5634NUX		0.52	2.7 (VDD=3.6V)	12	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)		40	—	VSON008X2030
BD5638NUX		0.52	2.7 (VDD=3.6V)	18	2.5 (VDD=5V, RL=4Ω, THD+N=10%)	0.85 (VDD=3.6V, RL=8Ω, THD+N=10%)		40	—	VSON008X2030
BD5465GUL		0.69	3.3 (VDD=3.6V)	12	0.6 (VDD=3.4 to 5.5V, RL=8Ω, THD+N≤1%)			40	✓	VCSP50L1 1.8x1.8, H=0.55Max
BD5466GUL		0.69	3.0 (VDD=3.6V)	18	1.5 (VDD=5V, RL=4Ω, THD+N≤1%)	0.5 (VDD=3.6V, RL=8Ω, THD+N≤1%)		40	✓	VCSP50L1 1.7x1.7, H=0.55Max
BD5467GUL		0.69	3.0 (VDD=3.6V)	13	1.5 (VDD=5V, RL=4Ω, THD+N≤1%)	0.5 (VDD=3.6V, RL=8Ω, THD+N≤1%)		40	✓	VCSP50L1 1.7x1.7, H=0.55Max
BD5468GUL		0.69	3.0 (VDD=3.6V)	13	1.5 (VDD=5V, RL=4Ω, THD+N≤1%)	0.5 (VDD=3.6V, RL=8Ω, THD+N≤1%)		40	✓	VCSP50L1 1.7x1.7, H=0.55Max
BD5469GUL		0.69	3.0 (VDD=3.6V)	13	0.88 (VDD=4.2V, RL=8Ω, THD+N≤1%)	0.64 (VDD=3.6V, RL=8Ω, THD+N≤1%)		40	✓	VCSP50L1 1.7x1.7, H=0.55Max

Portable Amplifier Analog Input Stereo Class-D Speaker Amplifier										
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Voltage Gain (dB)	Output Power (W)		Distortion (%)	Output Noise Voltage (μ Vrms)	Max LDO Current (mA)	Package
BD28412MUV	4.5 to 13.0	3.20	16 ($V_{CC}=11V$)	20/26/ 32/36	18 ($V_{CC}=12V, R_L=4\Omega$) (THD+N=10%, PBTl)	9 ($V_{CC}=12V, R_L=8\Omega$) (THD+N=10%)	0.03 ($V_{CC}=11V$)	100	—	VQFN032V5050

Mid./High-Power Amplifier Class-D Speaker Amplifier for Digital Input with Built-in DSP													
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Output Power (W)		Distortion (%)	Output Noise Voltage (μ Vrms)	DSP					Package
				10 ($V_{CC}=13V, R_L=8\Omega$)	17 ($V_{CC}=18V, R_L=8\Omega$)			Volume	DC Cut HPF	Hard Clipper	Parametric EQ	DRC	
BM28723AMUV	10 to 24	4.56 (4-Layer Board)	45 ($V_{CC}=18V$)	10 ($V_{CC}=13V, R_L=8\Omega$)	17 ($V_{CC}=18V, R_L=8\Omega$)	0.08	150	✓	✓	✓	✓ (12 Band)	✓ (3 Band)	VQFN032V5050

Mid./High-Power Amplifier Class-D Speaker Amplifier for Digital Input									
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Output Power (W)		Distortion (%)	Output Noise Voltage (μ Vrms)	Power Limiter Function	Package
BD28623MUV	8.5 to 24.0	3.56 (4-Layer Board) 2.21 (2-Layer Board)	40 ($V_{CC}=18V$)	—	15 ($V_{CC}=16V, R_L=8\Omega$)	0.08	150	✓ (GAIN)	VQFN024V4040

Mid./High-Power Amplifiers Analog Input/BTL Output Class-D Speaker Amplifiers										
Part No.	Supply Voltage (V)	Power Dissipation (W)	Quiescent Current (mA)	Voltage Gain (dB)	Output Power (W)		Distortion (%)	Output Noise Voltage (μ Vrms)	Power Limiter Function	Package
BD5424EFS	10.0 to 18.0	4.5 (4-Layer Board) 2.0 (2-Layer Board)	30 ($V_{CC}=12V$)	28	10 ($V_{CC}=12V, R_L=8\Omega$)	20 ($V_{CC}=17V, R_L=8\Omega$)	0.1	80	✓ (Power Limiter)	HTSSOP-A44
BD5423AEFS	10.0 to 16.5	4.5 (4-Layer Board) 2.0 (2-Layer Board)	25 ($V_{CC}=12V$)	28	10 ($V_{CC}=12V, R_L=8\Omega$)	17 ($V_{CC}=12V, R_L=4\Omega$)	0.1	80	✓ (Power Limiter)	HTSSOP-A44
BD5426EFS	10.0 to 16.5	4.5 (4-Layer Board) 2.0 (2-Layer Board)	25 ($V_{CC}=12V$)	28	9 ($V_{CC}=12V, R_L=8\Omega$)	10 ($V_{CC}=13V, R_L=8\Omega$)	0.1	80	✓ (Power Limiter)	HTSSOP-A44
BD5413EFV	6.0 to 10.5	2.8 (4-Layer Board) 1.1 (2-Layer Board)	12 ($V_{CC}=9V$)	30	4 ($V_{CC}=9V, R_L=8\Omega$)	5 ($V_{CC}=9V, R_L=6\Omega$)	0.2	90	—	HTSSOP-B24

Headphone Amplifiers

Ultra-Compact Coupling Capacitorless Headphone Amplifiers									
Part No.	Supply Voltage (V)	Quiescent Current (mA)	Gain (V/V)	Maximum Output Power (mW)	Distortion (%)	Output Noise Voltage (μ Vrms)	Ripple Rejection (dB)	Note	Package (mm)
BD88200GUL	2.4 to 5.5	2	Variable Gain with external resistor	80 ($V_{DD}=3.3V, R_L=16\Omega$)	0.006 ($V_{DD}=3.3V, R_L=16\Omega$)	10	-80 ($f=217Hz$)	Virtual ground based	VCSP50L2 2.1x2.1
BD88210GUL			-1.0					Virtual ground based	VCSP50L2 2.1x2.1
BD88215GUL			-1.5					Virtual ground based	VCSP50L2 2.1x2.1
BD88220GUL			-2.0					Virtual ground based	VCSP50L2 2.1x2.1
BD88400GUL			Variable Gain with external resistor					Ground based	VCSP50L2 2.1x2.1
BD88400FJ			Variable Gain with external resistor					Ground based	SOP-J14
BD88410GUL			-1.0					Ground based	VCSP50L2 2.1x2.1
BD88415GUL			-1.5					Ground based	VCSP50L2 2.1x2.1
BD88420GUL			-2.0					Ground based	VCSP50L2 2.1x2.1

Headphone Amplifier Designed for 0.93V Low Voltage Operation								
Part No.	Supply Voltage (V)	Quiescent Current (mA)	Maximum Output Power (mW)		Distortion (%)		Output Noise Voltage (μ Vrms)	Package
			Single-ended (16 Ω)	BTL (8 Ω)	Single-ended (16 Ω)	BTL (8 Ω)		
BU7150NUV	0.93 to 3.50 ($T_a=0^\circ C$ or more)	1	14 ($V_{DD}=1.5V$)	85 ($V_{DD}=1.5V$)	0.1 ($P_O=5mW$)	0.2 ($P_O=25mW$)	10	VSON010V3030

Standard Headphone Amplifiers							
Part No.	Supply Voltage (V)	Quiescent Current (mA)	Voltage Gain (dB)	Maximum Output Power (mW) $R_L=16\Omega$	Distortion (%)	Ripple Rejection (dB)	Package
BH3544F	2.8 to 6.5	7.0	6	62	0.02	57	SOP8
BH3547F	4.5 to 6.5	3.7	6	77	0.05	57	SOP8
BH3548F	4.0 to 5.5	6.5	6	62 (120@ $R_L=8\Omega$)	0.02	57	SOP8

Others

Line Amplifiers (Output Coupling Capacitor-less)											
Part No.	Supply Voltage (V)	Circuit Current (mA)	ch	Voltage Gain (dB)	Maximum Output Voltage (Vrms)	Distortion (%)	Output Noise Voltage (μ Vrms)	Channel Separation (dB)	Ripple Rejection (dB)	Charge Pump	Package
BD8876FV	3.0 to 5.5	3.2	2	6 or 9	3.5	0.003	8	80	65	✓	SSOP-B14
BD8878FV	3.0 to 5.5	3.2	2	6.7	3.0	0.003	10	65	65	✓	SSOP-B14

Isolation Amplifiers													
Part No.	Supply Voltage (V)	Operating Temperature (°C)	Circuit	Circuit Current (mA)	Voltage Gain (dB)	CMRR (dB)	Common-mode Input Voltage Range (V) $V_{CC}=8V$	THD (%)	Output Noise Voltage (μ Vrms)	Channel Separation (dB)	Slew Rate (V/ μ s)	Input Resistance (k Ω)	Package
BA3121F	4.0 to 18.0	-30 to +85	2	9.0	-0.04	57	3.75	0.002	3.5	82	2.0	55	SOP8
BA3123F	4.0 to 18.0	-40 to +85	2	9.0	-0.04	57	3.75	0.002	3.5	82	2.0	55	SOP8

Power Supply ICs for Audio

Power Supply ICs for High Fidelity Audio

*The following products are belonging to ICs. (Refer P.42) Please ensure that minimum Input Voltage always exceeds the sum of Output Voltage and drop out voltage for the device.

Power Supply ICs for High Fidelity Audio											
Part No.	Output Current (A)	Input Voltage (V)	Output Voltage (V)	Reference Voltage Accuracy (%)	Dropout Voltage (mV)	Noise Level (μ Vrms)	PSRR (dB)	Over Current Protection	Thermal Protection	Package	
MUS-IC BD37201NUX	0.5	2.7 to 5.5	Variable 1.0 to 4.5	± 1	200	3.3	90 (f=1kHz) 55 (f=1MHz)	✓	✓	VSON008X2030	

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It is the masterpiece of ROHM audio IC which pursues both the numerical values and sound quality performance required in an audio device.

Audio Processors

Analog Audio Processors

6ch/8ch Sound Processors with Built-in Micro-step Volume												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Output Noise Voltage (μ Vrms)	Distortion (%)	Selector	Main Volume (dB)		Zone Volume (dB)		Tone Control	Serial Control	Package
						ch	ch	ch	ch			
MUS-IC BD34704KS2	± 6.5 to ± 7.5	± 32	1.2	0.0004	18	+32 to -95 0.5/Step	8	+7.5 to -91.5 0.5/Step	2	—	2Wire	SQFP-T80C
MUS-IC BD34705KS2	± 6.5 to ± 7.5	± 32	1.2	0.0004	12	+32 to -95 0.5/Step	8	+6 to -16 1/Step, -16 to -56 2/Step	2	—	2Wire	SQFP-T64
BD34701KS2	± 6.5 to ± 7.5	± 22	1.5	0.0004	8	+32 to -95 0.5/Step	8	—	—	—	2Wire	SQFP-T52
BD3474KS2	± 6.5 to ± 7.5	± 30	1.5	0.0004	12	+32 to -95 0.5/Step	6	—	—	Bass, Treble	2Wire	SQFP-T80C

2ch/4ch/6ch Sound Processors												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Output Noise Voltage (μ Vrms)	Distortion (%)	Selector	Main Volume (dB)		Zone Volume (dB)		Tone Control	Serial Control	Package
						ch	ch	ch	ch			
BD3814FV	± 5.0 to ± 7.3	± 7	1.0	0.001	—	0 to -95 1/Step	6	—	—	Bass, Treble	2Wire	SSOP-B40
BD34700FV	± 6.5 to ± 7.5	± 22	1.5	0.0004	—	+32 to -95 0.5/Step	4	—	—	—	2Wire	SSOP-B40
BD3812F	± 5.0 to ± 7.3	± 2	1.2	0.0050	—	0,6 to 18 2/Step, 0 to -103 1/Step	2	—	—	—	2Wire	SOP14

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6ch/9ch Stereo Input Selector ICs Maximum Input Voltage: 4.2V

Part No.	Supply Voltage (V)	Current Consumption (mA)	Output Noise Voltage (μ Vrms)	Distortion (%)	Selector	Serial Control	Package
BD3843FS	± 4.0 to ± 7.3	± 3	1.0	0.004	6	2Wire	SSOP-A24
BD3841FS	± 5.0 to ± 7.3	± 3	1.0	0.004	9	2Wire	SSOP-A32

Sound Processors with Built-in 2-band Equalizer

Part No.	Supply Voltage (V)	Current Consumption (mA)	Selector		Input Gain (dB)	Volume (dB)	Fader		Parametric EQ	Loudness	LPF for Sub Woofer	Option	Serial Control	Output Noise Voltage (μ Vrms)	Distortion (%)	Package
			Single	Diff.			(dB)	Output								
BD37503FV	7.0 to 9.5	20	3	1	0 to +20	0 to -36, - ∞	0 to -63, - ∞	4	-	✓*	-	Anti-aliasing Filter*	I ² C BUS	5.8	0.001	SSOP-B20
BD37511FS	7.0 to 9.5	15	3	-	0 to +20	0 to -40	0 to -62, - ∞	4	-	-	-	-	I ² C BUS	6.0	0.005	SSOP-A20
BD37512FS	7.0 to 9.5	15	3	1	0 to +20	0 to -40	0 to -62, - ∞	4	-	-	-	-	I ² C BUS	6.0	0.005	SSOP-A20
BD37513FS	7.0 to 9.5	38	3	1	0 to +20	+15 to -79, - ∞	0 to -79, - ∞	4	-	✓	-	-	I ² C BUS	3.8	0.001	SSOP-A20
BD37514FS	7.0 to 9.5	38	3	1	0 to +20	+15 to -79, - ∞	0 to -79, - ∞	5	✓	✓	-	-	I ² C BUS	3.8	0.001	SSOP-A20
BD37515FS	7.0 to 9.5	38	3	1	0 to +20	+15 to -79, - ∞	+15 to -79, - ∞	5	✓	✓	✓	-	I ² C BUS	3.8	0.001	SSOP-A20
BD37521FS	7.0 to 9.5	38	3	1	0 to +20	+15 to -79, - ∞	0 to -79, - ∞	4	-	EXT	-	-	I ² C BUS	3.8	0.001	SSOP-A24
BD37522FS	7.0 to 9.5	38	4	1	0 to +20	+15 to -79, - ∞	0 to -79, - ∞	4	✓	✓	-	-	I ² C BUS	3.8	0.001	SSOP-A24
BD37523FS	7.0 to 9.5	38	4	1	0 to +20	+15 to -79, - ∞	+15 to -79, - ∞	5	✓	✓	✓	-	I ² C BUS	3.8	0.001	SSOP-A24
BD3870FS	4.5 to 9.5	8	3	-	0/6/12/18	0 to -87, - ∞	-	2	EXT	-	-	Surround	2Wire	4.5	0.01	SSOP-A24
BD3871FS	4.5 to 9.5	8	3	-	24/26/28	0 to -87, - ∞	-	2	EXT	-	-	Surround	2Wire	40 (Gv=24dB)	0.01	SSOP-A24
BD3490FV	4.75 to 9.50	7	4	-	0/2/4/6/8/12/16/20	0 to -87 (2ch Independent control), - ∞	-	2	EXT	-	-	Bass Boost, Surround	I ² C BUS	5.0	0.002	SSOP-B28
BD3491FS	4.75 to 9.50	7	6	-	0/2/4/6/8/12/16/20	0 to -87 (2ch Independent control), - ∞	-	2	EXT	-	-	Bass Boost, Surround	I ² C BUS	5.0	0.002	SSOP-A32

Sound Processors with Built-in 2-band Equalizer: Built-in Bass and Treble control *Loudness and Anti-aliasing Filter can be used exclusively. EXT: Set by external components
 BD37511FS and BD37512FS are pin-compatible. BD37513FS, BD37514FS and BD37515FS are pin-compatible. BD37522FS and BD37523FS are pin-compatible.

Analog Audio Processors

Sound Processors with Built-in 3-band Equalizer																				
Part No.	Supply Voltage (V)	Current Consumption (mA)	Selector		Input Gain (dB)	Volume (dB)	Fader		Parametric EQ	Loudness	LPF/HPF for Sub Woofer	Mixing		Level Meter	Option	Serial Control	Output Noise Voltage (μ Vrms)	Distortion (%)	Package	ComfySIL™ Functional Safety*1
			Single	Diff.			(dB)	Outputs				ATT	ATT							
BD37524FS	7.0 to 9.5	38	4	1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF	-	-	✓	-	I ² C BUS	3.8	0.001	SSOP-A24	-
BD37531FV	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	-	-	-	-	-	I ² C BUS	3.8	0.001	SSOP-B28	-
BD37532FV	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF	-	-	-	-	I ² C BUS	3.8	0.001	SSOP-B28	-
BD37533FV	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF	✓	✓	-	-	I ² C BUS	3.8	0.001	SSOP-B28	-
BD37534FV	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF	✓	✓	✓	-	I ² C BUS	3.8	0.001	SSOP-B28	-
BD37541FS	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	0 to -79, -∞	6	✓	EXT	-	✓	-	-	-	I ² C BUS	3.8	0.001	SSOP-B28	-
BD37542FS	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	EXT	LPF	✓	✓	-	-	I ² C BUS	3.8	0.001	SSOP-A32	-
BD37543FS	7.0 to 9.5	38	2/3/5	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	EXT	LPF+HPF	✓	✓	✓	-	I ² C BUS	3.8	0.001	SSOP-A32	-
BD37544FS	7.0 to 9.5	38	1/3/4	3/2/1	0 to +20	+15 to -79, -∞	+15 to -79, -∞	6	✓	-	LPF+HPF	✓	✓	-	Super Bass	I ² C BUS	3.8	0.001	SSOP-A32	-
BD37033FV-M	7.0 to 9.5	31	3/5	2/1	0 to +16	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF	✓	✓	✓	-	I ² C BUS	5.5	0.002	SSOP-B28	FSs
BD37034FV-M	7.0 to 9.5 V _{ccL} to 13	36	3/5	2/1	0 to +16	+15 to -79, -∞	+15 to -79, -∞	6	✓	✓	LPF+HPF	✓	✓	✓	High Voltage Output	I ² C BUS	6.0	0.002	SSOP-B28	FSs
BD3883FS	6.5 to 9.5	8	5	-	0/6/12/16/20/23/26/29	0 to -87, -∞	0/-10	2	EXT	-	-	-	-	-	Surround	2Wire	4.0	0.01	SSOP-A32	-
BD3403FV	6.5 to 9.5	16	5	-	0 to +26 (2/Step)	0 to -30 (2/Step)	0 to -59, -∞	2	EXT	-	-	-	-	-	Surround	2Wire	8.0	0.02	SSOP-B40	-

General-Purpose Electronic Volume with Built-in Advanced Switch																		
Part No.	Supply Voltage (V)	Current Consumption (mA)	Selector		Input Gain (dB)	Fader Volume (dB)	Outputs	Mixing		Post Filter	High-Voltage Output (dB)	Serial Control	Output Noise Voltage (μ Vrms)	Distortion (%)	Package	ComfySIL™ Functional Safety*1		
			Single	Diff.				ch	ATT (dB)									
BD3464FV	7.0 to 9.5	25	-	-	-	+23 to -79, -∞ (1/Step)	4	-	-	-	-	I ² C BUS	1.9	0.0004	SSOP-B20	-		
BD3465FV	7.0 to 9.5	25	-	-	-	+23 to -79, -∞ (1/Step)	4	3	+0 to -64, -∞ (8/Step)	-	-	I ² C BUS	1.9	0.0004	SSOP-B20	-		
BD3460FS	7.0 to 9.5	25	-	-	-	+23 to -79, -∞ (1/Step)	6	-	-	-	-	I ² C BUS	1.9	0.0004	SSOP-A24	-		
BD3461FS	7.0 to 9.5	25	-	-	-	+23 to -79, -∞ (1/Step)	6	3	+0 to -64, -∞ (8/Step)	-	-	I ² C BUS	1.9	0.0004	SSOP-A24	-		
MUS-IC BD34602FS-M	7.0 to 9.5	35	-	-	-	+23 to -79, -∞ (1/Step)	6	3	+0 to -79, -∞ (1/Step)	-	-	I ² C BUS	1.3	0.0004	SSOP-A24	FSs		
BD37067FV-M	7.0 to 9.5	37	2/3/4/5	4/3/2/1	+23 to -15 (1/Step)	+23 to -79, -∞ (1/Step)	6	1	-	✓	-	I ² C BUS	8	0.003	SSOP-B40	FSs		
BD37068FV-M	7.0 to 9.5 V _{ccL} to 17.8	30/7	1/2/3/4/5	5/4/3/2/1	+23 to -15 (1/Step)	+23 to -79, -∞ (1/Step)	6	1	-	✓	0/8.3	I ² C BUS	23 (High-Voltage Mode)	0.003	SSOP-B40	FSs		
BD37069FV-M	7.0 to 9.5 V _{ccL} to 17.8	30/7	2/3/4/5	4/3/2/1	+23 to -15 (1/Step)	+23 to -79, -∞ (1/Step)	6	1	-	✓	2/4.6/8.3	I ² C BUS	23 (High-Voltage Mode)	0.003	SSOP-B40	FSs		

Sound Processors with Built-in 3-band Equalizer: EXT: Set by external components

BD37531FV, BD37532FV, BD37533FV and BD37534FV are pin-compatible.

BD37541FS, BD37542FS and BD37543FS are pin-compatible. BD37033FV-M and BD37034FV-M are pin-compatible.

General-Purpose Electronic Volume with Built-in Advanced Switch: BD3464FS and BD3465FS are pin-compatible. BD3461FS and BD34602FS-M are pin-compatible. BD37067FV-M and BD37068FV-M are pin-compatible.

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It is the masterpiece of ROHM audio IC which pursues both the numerical values and sound quality performance required in an audio device.

©ComfySIL™ is a trademark or a registered trademark of ROHM Co., Ltd.

*1 For more information about "ComfySIL™ Functional Safety", please refer to the reverse side of the cover.

Media Decoders

AAC/WMA/MP3/WAV+SD Memory Card+CD-ROM																
Part No.	Supply Voltage (V)	USB	SD	iPod	Serial I/F	Display Information	MP3	WMA	AAC	CD-ROM Mode	CD-ROM File System	MP3 Recording Format	File Search	Audio Output		Package
														Analog	Digital	
BU94605AKV	3.0 to 3.6	USB2.0 Full Speed	MMC SD, miniSD, microSD, SDHC	—	I ² C BUS	Folder number, File number, Play time, Folder name, File name, TAG (Artist, Album, Title)	MPEG1, 2, 2.5 LAYER1, 2, 3	WMA9 Standard	MPEG4 AAC-LC	Mode1, Mode2, form1/2, Romeo, Joliet	ISO 9660 Level1, 2	—	Search during the playback	Line	I ² S SPDIF	VQFP80

AAC/WMA/MP3/WAV+SD Memory Card+CD-ROM+MP3 Record																
Part No.	Supply Voltage (V)	USB	SD	iPod	Serial I/F	Display Information	MP3	WMA	AAC	CD-ROM Mode	CD-ROM File System	MP3 Recording Format	File Search	Audio Output		Package
														Analog	Digital	
BU94702AKV	3.0 to 3.6	USB2.0 Full Speed	MMC SD, miniSD, microSD, SDHC	—	I ² C BUS	Folder number, File number, Play time, Folder name, File name, TAG (Artist, Album, Title)	MPEG1, 2, 2.5 LAYER1, 2, 3	WMA9 Standard	MPEG4 AAC-LC	Mode1, Mode2, form1/2, Romeo, Joliet	ISO 9660 Level1, 2	MPEG1 Layer3 Sample Rate: 32, 44.1, 48kHz Bit Rate: 32, 64, 128, 192, 256, 320kHz	Search during the playback	Line	I ² S SPDIF	VQFP80

Audio Converters

Audio Codec

Audio Codec											
Part No.	Supply Voltage (V)	ADC	DAC	Microphone Input	Speaker Output		Headphone Output	Filter		ALC	Package
		ch/bit	ch/bit		Type	Monaural/ Stereo		EQ	Notch		
BU26154MUV	HV _{DD} 2.7 to 5.5 LV _{DD} 2.7 to 3.6	1ch/24bit	2ch/24bit	1	AB/D	Monaural	Stereo	✓	✓	✓	VQFN040V6060
BU26156RFS	HV _{DD} 2.7 to 5.5 LV _{DD} 2.7 to 3.6	2ch/24bit	2ch/24bit	2	AB/D	Stereo	Stereo	✓	✓	✓	HTSSOP-A44R

Audio DAC

PCM 768kHz/32bit, DSD 22.4MHz Stereo Audio D/A Converters												
Part No.	Supply Voltage			Output Channels	Peak Output Current (mApp)	Resolution (Bit)	SNR (dB)	THD+N (dB)	Dynamic Range (dB)	Sampling Frequency (kHz)	DSD Clock (MHz)	Package
	AVCC (V)	DVDD (V)	DVDDIO (V)									
MUS-IC BD34301EKV	4.5 to 5.5	1.4 to 1.6	3.0 to 3.6	2	9.8	32	130	-115	130	32 to 768	2.8, 5.6, 11.2, 22.4	HTQFP64BV
BD34352EKV	4.5 to 5.5	1.4 to 1.6	3.0 to 3.6	2	6.25	32	126	-112	126	32 to 768	2.8, 5.6, 11.2, 22.4	HTQFP64BV

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Video Amplifiers

Composite Video Amplifiers

Ultra-compact (WL-CSP) Output Capacitor-less 1ch Video Drivers												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara.1 (dB)	Freq. Chara.2 (dB)	Input type	LPF	Mute (Standby) (μA)	Output Capa-less	Max Output Level (V _{p-p})	Video Out→In Change Mode	Package (mm)
BH76906GU	2.5 to 3.45	15	6	-0.2 (4.5MHz)	-26 (18MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	—	VCSP85H 1.6×1.6, H=1.0 Max
BH76912GU		15	12	-0.2 (4.5MHz)	-26 (18MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	—	VCSP85H 1.6×1.6, H=1.0 Max
BH76916GU		15	16.5	-0.2 (4.5MHz)	-26 (18MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	—	VCSP85H 1.6×1.6, H=1.0 Max

Output Capacitor-less 1ch Video Drivers												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara.1 (dB)	Freq. Chara.2 (dB)	Input type	LPF	Mute (Standby) (μA)	Output Capa-less	Max Output Level (V _{p-p})	Package	
BH76806FVM	2.5 to 3.45	16	6	-0.45 (4.5MHz)	-51 (23.5MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	MSOP8	
BH76809FVM		16	9	-0.45 (4.5MHz)	-51 (23.5MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	MSOP8	
BH76812FVM		15	12	-0.45 (4.5MHz)	-51 (23.5MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	MSOP8	
BH76816FVM		15	16.5	-0.45 (4.5MHz)	-51 (23.5MHz)	Bias (150kΩ)	8th order 4.5MHz	0	✓	5.2	MSOP8	

Compact Low Current 1ch Video Drivers												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara.1 (dB)	Freq. Chara.2 (dB)	Input type	LPF	Mute (Standby) (μA)	Output Capa-less	Max Output Level (V _{p-p})	Video Out→In Change Mode	Package
BH76106HFV	2.6 to 5.5	7	6	0.1 (4.5MHz)	-45 (19MHz)	Clamp	8th order 4.5MHz	0	✓	2.6	—	HVSOF6
BH76109HFV		7	9	0.1 (4.5MHz)	-45 (19MHz)	Clamp	8th order 4.5MHz	0	✓	2.6	—	HVSOF6
BH76112HFV		7	12	0.1 (4.5MHz)	-45 (19MHz)	Clamp	8th order 4.5MHz	0	✓	2.6	—	HVSOF6
BH76206HFV		8	6	-0.3 (6MHz)	-40 (27MHz)	Clamp	8th order 6MHz	0	✓	2.6	—	HVSOF6

1ch Video Drivers Built-in Video Switch												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara. (dB)	Switchers	Input type	Video Driver	Mute	Output Capa-less	Max Output Level (V _{p-p})		Package
										V _{CC} =3V	V _{CC} =5V	
BH76330FVM	2.8 to 5.5	10	6	0 (10MHz)	3 input-1 output	Clamp	✓	✓ (Standby)	✓	2.7	4.6	MSOP8
BH76331FVM		10	6	0 (10MHz)	3 input-1 output	Bias	✓	✓ (Standby)	—	2.8	4.6	MSOP8
BH76360FV		12	6	0 (10MHz)	6 input-1 output	Clamp	✓	✓ (Standby)	✓	2.7	4.6	SSOP-B16
BH76361FV		12	6	0 (10MHz)	6 input-1 output	Bias	✓	✓ (Standby)	—	2.8	4.6	SSOP-B16

Video Switches

1ch Video Switches (Wide Band-width)												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara. (dB)	Switchers	Input type	Video Driver	Mute	Crosstalk (dB)	Max Output Level (V _{p-p})		Package
										V _{CC} =3V	V _{CC} =5V	
BH76332FVM	2.8 to 5.5	9	0	0 (30MHz)	3 input-1 output	Clamp	—	✓ (Standby)	-65 (4.43MHz)	1.8	3.8	MSOP8
BH76333FVM		8	0	0 (30MHz)	3 input-1 output	Bias	—	✓ (Standby)	-65 (4.43MHz)	1.9	3.4	MSOP8
BH76362FV		11	0	0 (30MHz)	6 input-1 output	Clamp	—	✓ (Standby)	-65 (4.43MHz)	1.8	3.8	SSOP-B16
BH76363FV		11	0	0 (30MHz)	6 input-1 output	Bias	—	✓ (Standby)	-65 (4.43MHz)	1.9	3.4	SSOP-B16

Video and Audio Signal Switch												
Part No.	Supply Voltage (V)	Video Circuit Current (mA)	Audio Circuit Current (mA)	Video Freq. Chara.1 (dB)	Video Freq. Chara.2 (dB)	Video Amplifier Gain (dB)	Audio Freq. Chara.1 (dB)	Audio Freq. Chara.2 (dB)	Audio Amplifier Gain (dB)	Residual Noise (μVrms)	Package	
BH7649KS2	7.5 to 9.5	34	23	0 (6.75MHz)	-30 (27MHz)	-3/-6/0/+3/+6	-0.5 (24kHz)	-26 (96kHz)	-6/0	20	SQFP-T52	

Others

Isolation Amplifier												
Part No.	Supply Voltage (V)	Circuit Current (mA)	Amplifier Gain (dB)	Freq. Chara. (dB)	ch	Input type	Video Driver	Input Impedance (kΩ)	CMRR (dB)	Max Output Level (V _{p-p})	Package	
BH7673G	4.5 to 5.5	4.8	0	0 (10MHz)	1	Bias	—	150	60	3.8	SSOP5	

Image Correction

Image Correction IC for Panel											
Part No.	Supply Voltage (V)			Image Data Size	Control I/F	Input/Output Digital I/F	Image Adjustment	PWM Output	LVDS Transmitter	Package	Automotive Grade AEC-Q100
	V _{DD} Core	V _{DD} I/O	V _{DD} LVDS								
BU1523KV	1.65 to 1.95	3.0 to 3.6	3.0 to 3.6	Supports up to WVGA+ (864x480)	I ² C BUS	24bit RGB Interface 8bit YUV=4 : 2 : 2 ITU-R BT.656	✓	–	✓	VQFP100	Preparing

Video Encoders Built-in Image Correction										
Part No.	Supply Voltage (V)			Image Data Size	Control I/F	Input/Output Digital I/F	Fog Reduction	Video Encoder	Package	Automotive Grade AEC-Q100
	V _{DD} Core	V _{DD} I/O	AV _{DD}							
BU6521KV	1.4 to 1.6	2.7 to 3.6	2.7 to 3.6	ITU-R BT.656	I ² C BUS Serial EEPROM Interface	8bit YUV=4 : 2 : 2 ITU-R BT.656	✓	✓	VQFP48C	YES

Video LSIs

Video Decoder

(LAPIS Technology products)

CVBS/S-video									
Part No.	Supply Voltage (V)	Input (Analog)		Output (Digital)	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
		Terminal	Type						
ML86101A	3.3/1.5	CVBSx4 or CVBSx2+S-videox1 or S-videox2	NTSC PAL SECAM	ITU-R BT.656 YUV 8bit	Simple, small	-40 to +85	P-TQFP48 -0707-0.50-ZK6	✓	YES
New ML86112	3.3/1.2	CVBSx4 or differentialx2	NTSC PAL	MIPI CSI-2 (YUV422-8bit) ITU-R BT.656	Simple, small MIPI output I/P conversion	-40 to +105	P-WQFN32 -0505-0.50-W66	✓	YES
ML86V7668A	3.3/2.5	CVBSx4 or CVBSx1+S-videox3	NTSC PAL SECAM	ITU-R BT.656 YUV 8/16bit RGB 18bit	RGB output	-40 to +85	P-TQFP100 -1414-0.50-ZK6	✓	YES
☆ ML86160	3.3/1.2	CVBSx4 or differentialx2	NTSC PAL High Definition Analog	ITU-R BT.656 MIPI CSI-2	High Definition Analog Decoder HD-ACT*3	-40 to +105 (T.B.D)	P-WQFN36 -0606-0.50 (T.B.D)	✓	YES

CVBS/S-video/Component/RGB									
Part No.	Supply Voltage (V)	Input (Analog)		Output (Digital)	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
		Terminal	Type						
ML86V7675	3.3/1.5	CVBSx4 +(Comp or S-video)x1 +Compx1	NTSC PAL SECAM	ITU-R BT.656 YUV 8bit	WVGA, EGA analog RGB supported	-40 to +85	P-TQFP64 -1010-0.50-ZK6	✓	YES

*1 A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales. ☆: Under Development
 *2 Please inquire to the sales for AEC-Q100.
 *3 HD-ACT (High Definition-Analog Composite Transport) Analog video is displayed clearly by original high definition technology.

Video Encoder

(LAPIS Technology products)

CVBS									
Part No.	Supply Voltage (V)	Input (Digital)	Output (Analog)		Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
			Terminal	Type					
ML86V76580	3.3/1.8	ITU-R BT.656 YUV 8bit	CVBS	NTSC PAL	75Ω drive	-40 to +85	P-TQFP48 -0707-0.50-ZK6	✓	YES
ML86640	3.3	ITU-R BT.656 YUV 8/16/24bit RGB 24bit	CVBS	NTSC PAL	75Ω drive P/I conversion	-40 to +105	P-TQFP48 -0707-0.50-ZK6	✓	YES
☆ ML86660	3.3	ITU-R BT.656 MIPI CSI-2	CVBS	NTSC PAL High Definition Analog	High Definition Analog Encoder HD-ACT*3	-40 to +105 (T.B.D)	WQFN36 -0505-0.50 (T.B.D)	✓	YES

CVBS/S-video/Component/RGB									
Part No.	Supply Voltage (V)	Input (Digital)	Output (Analog)		Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
			Terminal	Type					
ML86V7655	3.3/2.5	ITU-R BT.656 YUV 8/16/24bit RGB 24bit	CVBS S-video Component	NTSC PAL	I/P, P/I conversion	-40 to +85	P-TQFP100 -1414-0.50-ZK6	✓	YES

*1 A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales. ☆: Under Development
 *2 Please inquire to the sales for AEC-Q100.
 *3 HD-ACT (High Definition-Analog Composite Transport) Analog video is displayed clearly by original high definition technology.

Video Interface

(LAPIS Technology products)

LVTTTL/LVDS/MIPI Video Interface								
Part No.	Supply Voltage (V)	Input	Output	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
ML86795	3.3 (1.8)/1.5	ITU-R BT.656 YUV 8bit Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/888, YUV422-8bit)	ITU-R BT.656 YUV 8/16bit Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/888, YUV422-8bit)	LVTTTL/LVDS/MIPI CSI-2 to LVTTTL/ LVDS/MIPI CSI-2, MIPI Virtual Channel output	-40 to +105	P-WQFN64 -0909-0.50-63	✓	YES
☆ ML86781	3.3/1.5	RGB 24bit MIPI CSI-2 (RGB565/888, YUV422-8bit) MIPI DSI (RGB565/888, YUV422-8bit)	Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/888, YUV422-8bit)	LVTTTL/MIPI DSI/CSI-2 to LVDS/ MIPI CSI-2 Separate one image into two	-40 to +85	P-TQFP128 -1414-0.40-Z6K6- MC	✓	YES
☆ ML86796	3.3/1.2	MIPI CSI-2 (RGB565/666/888, YUV422-8/10bit, RAW8/10/12/14/16/20/24)×4	MIPI CSI-2 (RGB565/666/888, YUV422-8/10bit, RAW8/10/12/14/16/20/24)×2	MIPI CSI-2 to MIPI CSI-2 Supports 4Virtual Channel inputs/ outputs	-40 to +105 (T.B.D)	P-TQFP100 -1414-0.50-ZK6 (T.B.D)	✓	YES
☆ ML86797	3.3/1.2	Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/666/888 YUV422-8bit) MIPI DSI (RGB565/888 YUV422-8bit)	Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/666/888 YUV422-8bit) MIPI DSI (RGB565/888 YUV422-8bit)	LVDS to MIPI CSI-2/DSI MIPI CSI-2/DSI to LVDS MIPI CSI-2/DSI to MIPI DSI/CSI-2	-40 to +105 (T.B.D)	P-WQFN64 -0909-0.50-63 (T.B.D)	✓	YES
☆ ML86799	3.3/1.2	Single/Dual LVDS (RGB666/888) MIPI CSI-2 (RGB565/666/888 YUV422-8bit) MIPI DSI (RGB565/666/888 YUV422-8bit)	eDP (RGB565/666/888)	LVDS/MIPI CSI-2/DSI to eDP	-40 to +105 (T.B.D)	P-WQFN64 -0909-0.50-63 (T.B.D)	✓	YES

*1 A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales.
*2 Please inquire to the sales for AEC-Q100.

☆: Under Development

Display Controller Series for Small to TFT LCD

(LAPIS Technology products)

Video Decoder, Scaler Included																
Part No.	Supply Voltage (V)	Input (Analog)		Input (Digital)	Output	Resolution	OSD	MCU	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2			
		Terminal	Type													
ML86V8201	3.3/1.5	CVBS×2 or S-video×1	NTSC PAL SECAM	ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit	ITU-R BT.656 YUV 8bit RGB 18/24bit	QVGA to WVGA	Line	—	Rear camera function Image quality adjustment	-40 to +85	P-TQFP100 -1414-0.50-ZK6	✓	YES			
ML86203		CVBS×1		ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit	ITU-R BT.656 YUV 8bit Single LVDS (RGB666/888)		—	—	Rear camera function WXGA panel support Image quality adjustment		P-TQFP80 -1010-0.40-ZK6	✓	YES			
ML86207		CVBS×2			ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit + Single LVDS (RGB666/888)	ITU-R BT.656 YUV 8bit RGB 18/24bit Single LVDS (RGB666/888)	VGA to WXGA	Text Line BMP (ML 86287 Only)	—		LVTTTL/LVDS I/F Digital video input x2 WXGA panel support Rear camera function Picture in Picture (ML86287 Only) Image quality adjustment OSD ROM-OSD function (ML86287 Only)	P-TQFP100 -1414-0.50-ZK6	✓	YES		
ML86287														P-TQFP128 -1414-0.40-ZK6-MC	✓	YES
ML86209		CVBS single×2 or differential×1		NTSC PAL	ITU-R BT.656 YUV 8/16bit ITU-R BT.1120 like Single/Dual LVDS (RGB666/888)	ITU-R BT.656 or MIPI CSI-2 (RGB565/888, YUV422-8bit) + Single/Dual LVDS (RGB666/888)	VGA to Full HD	Text Line BMP	—		LVTTTL/LVDS/MIPI CSI-2 I/F Digital video input x4 Full HD panel support Rear camera function Picture in Picture (ML86289 Only) Image quality adjustment OSD, ROM-OSD function	P-TQFP128 -1414-0.40-Z6K6	✓	YES		
ML86289																P-TQFP128 -1414-0.40-Z6K6-MC
New ML86290		CVBS single×3 or differential×1			ITU-R BT.656 YUV 8/16bit ITU-R BT.1120-like MIPI DSI (RGB565/888 YUV422-8bit ARGB8565 (ML86290)) MIPI CSI-2 (RGB565/888, YUV422-8bit)	Dual/Single LVDS (RGB666/888)	VGA to Full HD	BMP	—		Multi Input support LVTTTL/MIPI-DSI/MIPI CSI-2/CVBS I/F Rear camera function Picture in Picture ROM-OSD function (10windows, 2layers (ML86291 Only))	P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES		
New ML86291																P-TQFP128 -1414-0.40-Z6K6-MC
ML86V8202C		3.3/1.8	CVBS×2 or (Comp or S-video)×1 +Comp×1	NTSC PAL SECAM	ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit	ITU-R BT.656 style YUV 8/16/24bit RGB 18/24bit	VGA to WXGA	Text Line BMP	—		Component video support Image quality adjustment	-40 to +85	P-TQFP100 -1414-0.50-ZK6	✓	YES	
ML86240		3.3/1.5	CVBS×4 or CVBS×2 or (Comp or S-video)×1 +Comp×1		ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit 2ch	ITU-R BT.656 YUV 8bit RGB 18/24bit									Component video support Digital video input x2 Rear camera function Image quality adjustment OSD function	P-TFBGA144 -1111-0.80-1
ML86241	3.3 (1.8)/1.5	CVBS×4 or CVBS×2 or (Comp or S-video)×1 +Comp×1	ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit + Single LVDS (RGB 18/24bit)		ITU-R BT.656 YUV 8/16bit + RGB 18/24bit YUV 16bit Single LVDS (RGB 18/24bit)								Component video support LVTTTL/LVDS I/F Digital video input x2 WXGA panel support Rear camera function Image quality adjustment OSD, ROM-OSD function	P-TFBGA144 -1111-0.80-1	✓	YES
New ML86242	3.3/1.5	CVBS single×2 or differential×1 Component (ML86242 Only)	NTSC PAL	*3 ITU-R BT.656 YUV 8/16bit ITU-R BT.1120 like Single/Dual LVDS (RGB666/888, YUV422-8/16bit, YUV444-24bit)	*3 ITU-R BT.656 YUV 8/16bit RGB 24bit Single/Dual LVDS (RGB666/888) MIPI-CSI2 (RGB565/888 YUV422-16bit)	VGA to WXGA	Text Line BMP	—	*3 Multi Input/Output support LVTTTL/LVDS/MIPI CSI-2/ CVBS/Comp I/F Rear camera function Picture in Picture Image quality adjustment OSD, ROM-OSD function State monitor function	P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES				
ML86243														P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES
New ML86244															P-TQFP128 -1414-0.40-Z6K6-MC	✓
ML86245	3.3/1.5	—	—	*3 ITU-R BT.656 YUV 8/16bit ITU-R BT.1120 like Single/Dual LVDS (RGB666/888 YUV422-8/16bit)	*3 ITU-R BT.656 YUV 8/16bit RGB 24bit Single/Dual LVDS (RGB666/888)		Text Line BMP	—	Multi Input/Output support LVTTTL/LVDS/MIPI CSI-2 I/F Rear camera function Picture in Picture Image quality adjustment OSD, ROM-OSD function State monitor function	P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES				
ML86321		CVBS single×2 or differential×1	NTSC PAL	ITU-R BT.656 YUV 8/16bit ITU-R BT.1120 like MIPI CSI-2 (RGB565/888, YUV422-8bit)	YUV 8/16bit Single LVDS (RGB666/888)		Text Line BMP	—	Electronic rear-view mirror support 3-screen synthesis Image correction function (Angle/Aspherical/Keystone/Lens distortion correction) OSD, ROM-OSD function (15windows, 1layer) State monitor function	P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES				

*1 A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales.
*2 Please inquire to the sales for AEC-Q100.
*3 Please inquire to the sales for input/output specification and feature.

Display Controller Series for Small to TFT LCD

(LAPIS Technology products)

Image Adjustment Functions Included													
Part No.	Supply Voltage (V)	Input (Analog)		Input (Digital)	Output	Resolution	OSD	MCU	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
		Terminal	Type										
ML86V8101	3.3			RGB 18bit	RGB 18bit	QVGA to QHD	-		Image quality adjustment function	-40 to +85	P-TQFP64 -1010-0.50-ZK6	✓	YES
ML86V8102				RGB 18/24bit	RGB 18/24bit				RGB 24bits supported image quality adjustment function		P-TQFP80 -1010-0.40-ZK6	✓	YES
New ML86172	3.3/1.5			ITU-R BT.656 YUV 8/10bit RGB 18/24bit Single/Dual LVDS (RGB666/888)	RGB 18/24bit (ML86172 Only) Single/ Dual LVDS (RGB666/888bit)	WVGA to H 2880 (Max) V 1080 (Max) (Pixel rate 160MHz Max)			Image quality adjustment OSD, ROM OSD function (30windows, 2layers) Error Detection (Input data/Input sync/ Output data/Pattern check (ML86172 Only)) Frequency conversion function State monitor function	-40 to +85	P-TQFP100 -1414-0.50-Z6K6	✓	YES
ML86173											P-TQFP100 -1414-0.50-Z6K6	✓	YES
☆ ML86174	3.3/1.2		-	Single/Dual LVDS (RGB565/888) MIPI CSI-2, MIPI DSI (RGB565/888, YUV422-8bit)	Single/ Dual LVDS (RGB666/888)	H 2880 (Max) V 1080 (Max) (Pixel rate 160MHz Max)	Text BMP		Image quality adjustment OSD, ROM OSD function (50windows, 2layers) Error Detection (Input data/Input sync/ Output data/Pattern check) Frequency conversion function State monitor function	-40 to +85	P-TQFP100 -1414-0.50-Z6K6	✓	YES
ML86175	3.3/1.5			ITU-R BT.656 YUV 8/16bit RGB 18/24bit Single/Dual LVDS (RGB666/888)		H 2048 (Max) V 2048 (Max) (Pixel rate 160MHz Max)			Image quality adjustment 90 degree rotation function OSD, ROM OSD function (15windows, 1layer) Frequency conversion function State monitor function	-40 to +85	TQFP128 -1414-0.40-Z6K6-MC	✓	YES
New ML86177											P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES
				RGB 24bit Single LVDS (RGB888)	RGB 24bit Single LVDS (RGB888)	QVGA to WXGA	BMP		Warping and rotation for HUD ROM OSD function (10windows, 2layers) Status output Fail detection function	-40 to +85	P-TQFP128 -1414-0.40-Z6K6-MC	✓	YES

Video decoder, 8051MCU Included													
Part No.	Supply Voltage (V)	Input (Analog)		Input (Digital)	Output	Resolution	OSD	MCU	Feature	Operating Temperature (°C)	Package	Halogen Free Support*1	Automotive Grade*2
		Terminal	Type										
ML86V8401	3.3/1.8	CVBS×3 or CVBS×2 +S-video×1	NTSC PAL SECAM	ITU-R BT.656 YUV 8/16/24bit RGB 18/24bit	ITU-R BT.656 RGB 18/24bit	QVGA to WVGA	Text	8051 (8bit)	System control MCU installed	-40 to +85	P-TQFP100 -1414-0.50-ZK6	✓	YES

*1 A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales.
 *2 Please inquire to the sales for AEC-Q100.

☆: Under Development

Audio & Video