

UTC UNISONIC TECHNOLOGIES CO., LTD

ULV8691

LOW COST, CMOS, RRO **OPERATIONAL AMPLIFIER**

DESCRIPTION

The UTC ULV8691 is low cost, single rail-to-rail output, single-supply amplifier featuring low offset and input voltages, low current noise, and wide signal bandwidth. The combination of low offset, low noise, very low input bias currents, and high speed make this amplifier useful in a wide variety of applications. Filters, integrators, photodiode amplifiers, and high impedance sensors all benefit from this combination of performance features. Audio and other ac applications benefit from the wide bandwidth and low distortion of the device.

Applications for the amplifier include power amplifier (PA) controls, laser diode control loops, portable and loop-powered instrumentation, audio amplification for portable devices, and ASIC input and output amplifiers.

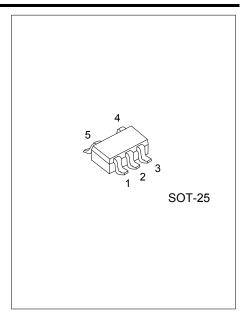
FEATURES

- * Supply Voltage:2.7~6V
- * Supply Current/Amplifier:1.15 mA (Max)
- * Input Offset Voltage:2mV (Max)
- * Rail-to-Rail Output
- * Slew Rate: 6.4V/µs (Typ.)

ORDERING INFORMATION

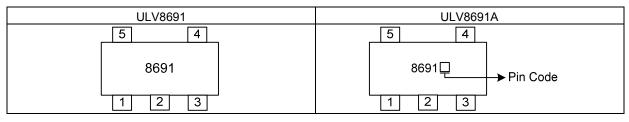
Ordering Number		Deskare	Decking	
Lead Free	Halogen Free	Package	Packing	
ULV8691L-AF5-x-R	ULV8691G-AF5-x-R	SOT-25	Tape Reel	

ULV8691G-AF5-x-R (1)Packing Type (2)Pin Assignment (3)Package Type (4)Green Package	 (1) R: Tape Reel (2) Refer to Pin Assignment (3) AF5: SOT-25 (4) G: Halogen Free and Lead Free, L: Lead Free
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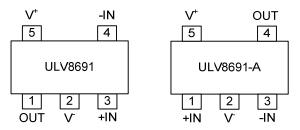


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MARKING



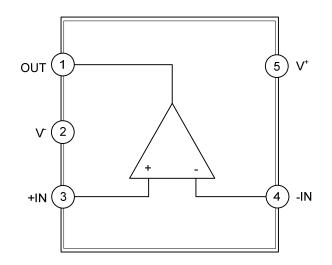
■ PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION		
1	OUT	Output		
2	V	Negative power supply		
3	+IN	Non-inverting Input		
4	-IN	nverting Input		
5	V ⁺	Positive power supply		

BLOCK DIAGRAM





■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage		6	V
Input Voltage		V ⁻ - 0.3 ~ V ⁺ + 0.3	V
Differential Input Voltage	V _{ID}	Supply Voltage	V
Junction Temperature Range	TJ	+150	°C
Storage Temperature Range	T _{STG}	-65~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

RECOMMENDED OPERATING CONDITIONS

over operating free-air temperature range (unless otherwise specified.)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V ⁺ - V ⁻	2.7		6	V
Operating Free-Air Temperature	T _{OPR}	-40		125	°C

THERMAL DATA

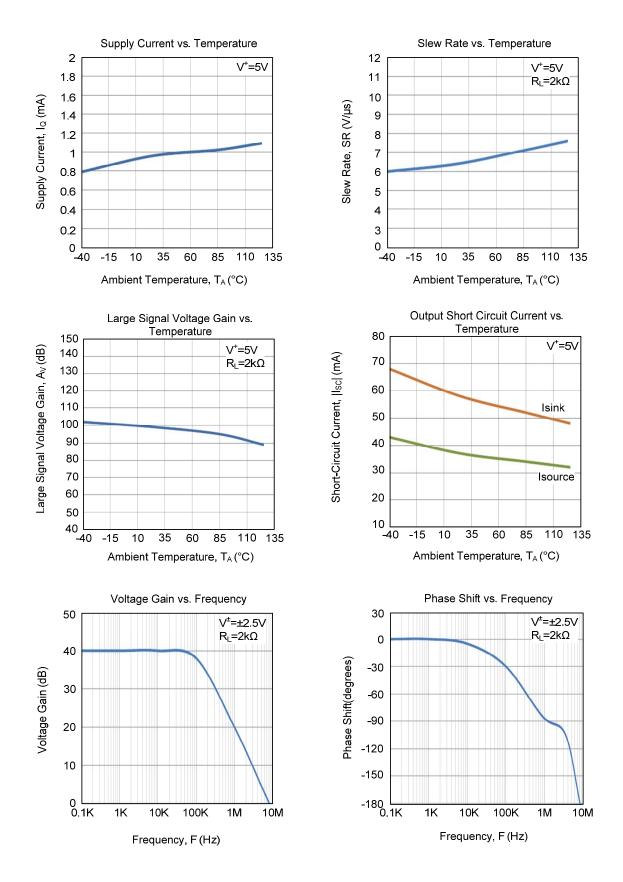
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	230	°C/W

■ ELECTRICAL CHARACTERISTICS (V⁺=2.7~5V, V_{CM}= V⁺/2, T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDI	MIN	TYP	MAX	UNIT	
Supply Current/Amplifier	lo	$V_0 = 0V$		0.95	1.15	mA	
Power Supply Rejection Ratio	PSRR	V ⁺ = 2.7V ~ 5.5V	80	110		dB	
Input Offset Voltage	V _{OS}	$V_{CM} = -0.3V \sim V^{+} - 1.1V$			0.3	2	mV
Input Offset Voltage Drift	$\Delta V_{OS} / \Delta T$				3		μV/°C
Input Bias Current	I _B				1		pА
Input Offset Current	l _{os}				1		pА
Common-Mode Voltage Range	V _{CM}		-0.3		V ⁺ -1.1	V	
Common-Mode Rejection Ratio	CMRR	$V_{CM} = -0.3V \sim V^{+} - 1.1V$	68	105		dB	
Large Signal Voltage Gain	Av	V _O = 0.5V ~ 4.5V, R _L =2	2kΩ,	80	98		dB
	Vo	I _L = 1mA	V _{OH}	V ⁺ -0.06	V ⁺ -0.03		V
			V _{OL}		0.02	0.04	V
Output Voltage		I _L = 10mA	V _{OH}	4.7	4.76		V
			V _{OL}		0.15	0.21	V
Short-Circuit Current	I _{SC}	Sourcing			37		mA
Short-Circuit Current		Sinking			59		mA
Slew Rate	SR	$R_L = 2k\Omega$			6.4		V/µs
Gain-Bandwidth Product	GBW				8		MHz
Input-Referred Voltage Noise	en	f = 1kHz			10		nV/ √Hz
Input-Referred Current Noise	İn	f = 1kHz		0.07		pA/ \/Hz	



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