



## ULV7266

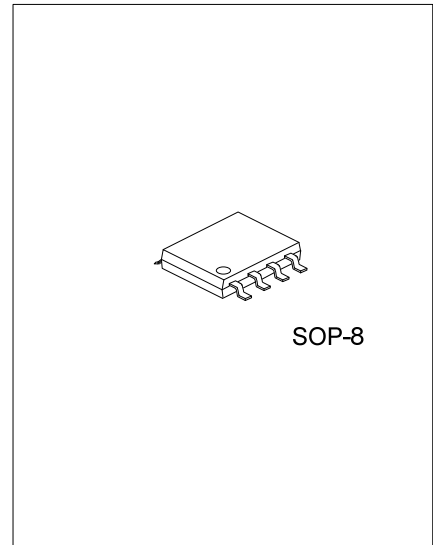
CMOS IC

### ULTRA LOW POWER CMOS OPERATIONAL AMPLIFIERS

#### DESCRIPTION

The UTC **ULV7266** is ultra low supply current, rail-to-rail input and output CMOS operational amplifiers.

The UTC **ULV7266** have an wide operating temperature range. They have a wide input common mode voltage range and output voltage swing, and take the minimum operating supply voltage down to 1.8V. The maximum recommended supply voltage is 5.5V. These features are suitable for portable equipment and sensor amplifiers.



#### FEATURES

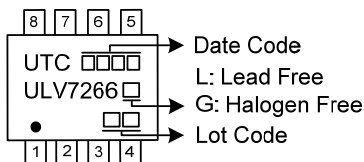
- \* Low Operating Supply Voltage: 1.8V(MIN)
- \* Ultra Low Supply Current:0.9μA (Typ.)

#### ORDERING INFORMATION

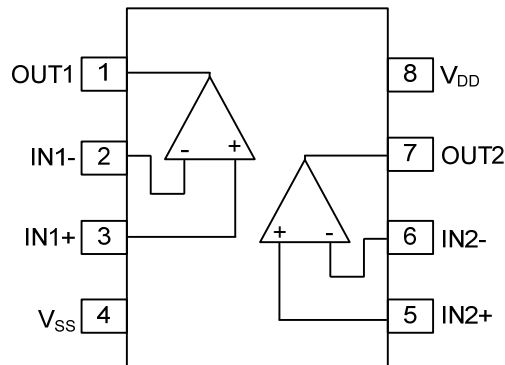
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULV7266L-S08-R	ULV7266G-S08-R	SOP-8	Tape Reel

<p>ULV7266G-S08-R</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) R: Tape Reel</li> <li>(2) S08: SOP-8</li> <li>(3) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



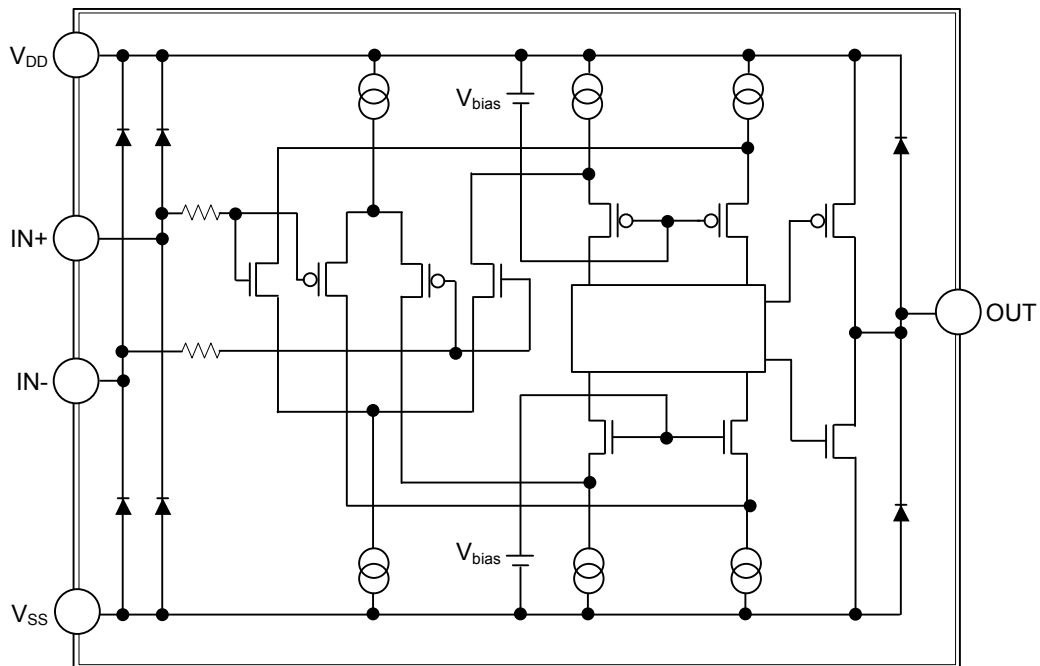
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	OUT1	Output (op amp1)
2	IN1-	Inverting Input (op amp1)
3	IN1+	Non-inverting Input (op amp1)
4	V <sub>SS</sub>	Negative Power Supply
5	IN2+	Non-inverting Input (op amp2)
6	IN2-	Inverting Input (op amp2)
7	OUT2	Output (op amp2)
8	V <sub>DD</sub>	Positive Power Supply

■ BLOCK DIAGRAM



## ■ ABSOLUTE MAXIMUM RATING

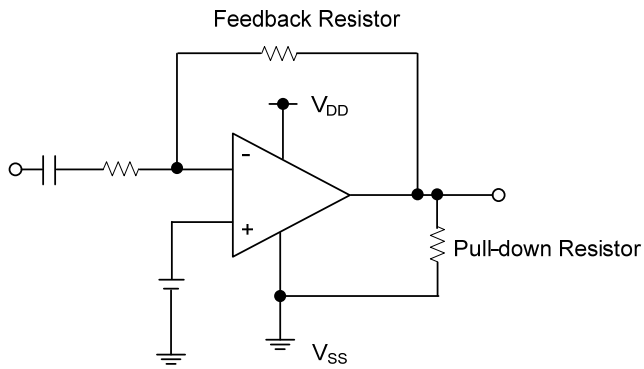
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{DD}-V_{SS}$	+7	V
Differential Input Voltage	$V_{ID}$	$V_{DD}-V_{SS}$	V
Input Common-mode Voltage Range	$V_{ICM}$	$(V_{SS}-0.3)$ to $V_{DD}+0.3$	V
Input Current	$I_I$	$\pm 10$	mA
Operating Supply Voltage	$V_{OPR}$	+1.8 ~ +5.5	V
Power Dissipation	$P_D$	0.55	W
Junction Temperature	$T_J$	+125	°C
Operating Temperature	$T_{OPR}$	-40 ~ +85	°C
Storage Temperature	$T_{STG}$	-55 ~ +125	°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.

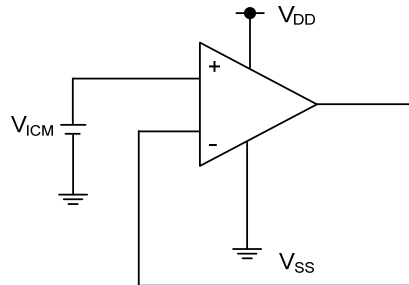
## ■ ELECTRICAL CHARACTERISTICS ( $V_{DD}=+3V$ , $V_{SS}=0V$ , $T_A=25^\circ C$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Quiescent Current	$I_Q$	$R_L=\infty$ , All Op-Amps $AV=0dB$ , $IN+=1.5V$	25°C		0.9	1.7	$\mu A$
			-40°C~+85°C		2.1		
Power Supply Rejection Ratio	PSRR		60	85		dB	
Input Offset Voltage	$V_{OS}$	$V_{DD}=1.8V\sim 5.5V$			8.5	mV	
Input Bias Current	$I_B$			5		pA	
Input Offset Current	$I_{OS}$			5		pA	
Common-Mode Voltage Range	$V_{CM}$	$V_{SS}$ to $V_{DD}$	0		3	V	
Common-mode Rejection Ratio	CMRR		45	65		dB	
Large Signal Voltage Gain	$A_V$	$R_L=10k\Omega$	60	90		dB	
Output Voltage High	$V_{OH}$	$R_L=10k\Omega$	$V_{DD}-0.1$			V	
Output Voltage Low	$V_{OL}$	$R_L=10k\Omega$			$V_{SS}+0.1$	V	
Output Source Current	$I_{SOURCE}$	$OUT=V_{DD}-0.4V$	1	2.2		mA	
Output Sink Current	$I_{SINK}$	$OUT=V_{SS}+0.4V$	1	3.2		mA	
Slew Rate	SR	$C_L=25pF$		3.5		V/ms	
Gain-Bandwidth Product	GBW	$C_L=25pF$ , $A_V=40dB$		12		kHz	
Phase Margin	$\theta$	$C_L=25pF$ , $A_V=40dB$		60		deg	
Channel Separation	CS	$A_V=40dB$ , $OUT=1V_{rms}$		80		dB	

■ TYPICAL APPLICATION CIRCUIT

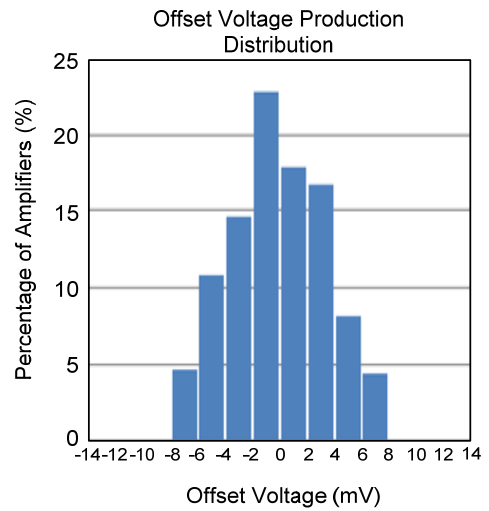
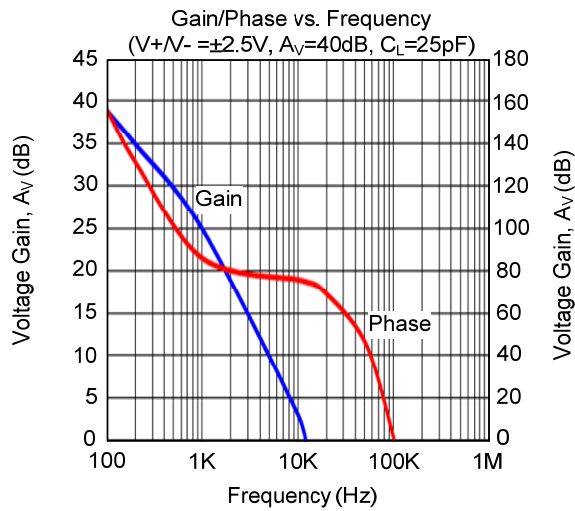


To Suppress the Crossover Distortion



Example of Application Circuit for Unused Op-amp

■ TYPICAL CHARACTERISTICS



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