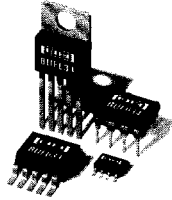


Or, Call Customer Service at 1-800-548-6132 (USA Only)



BUF634

www.burr-brown.com/databook/BUF634.html

250mA HIGH-SPEED BUFFER

FEATURES

- HIGH OUTPUT CURRENT: 250mA
- SLEW RATE: 2000V/ μ s
- PIN-SELECTED BANDWIDTH: 30MHz to 180MHz
- LOW QUIESCENT CURRENT: 1.5mA (30MHz BW)
- WIDE SUPPLY RANGE: ± 2.25 to ± 18 V
- INTERNAL CURRENT LIMIT
- THERMAL SHUTDOWN PROTECTION
- 8-PIN DIP, SO-8, 5-LEAD TO-220, 5-LEAD DPAK SURFACE-MOUNT

APPLICATIONS

- VALVE DRIVER
- SOLENOID DRIVER
- OP AMP CURRENT BOOSTER
- LINE DRIVER
- HEADPHONE DRIVER
- VIDEO DRIVER
- MOTOR DRIVER
- TEST EQUIPMENT
- ATE PIN DRIVER

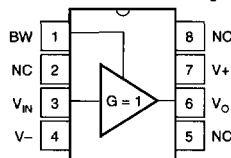
DESCRIPTION

The BUF634 is a high speed unity-gain open-loop buffer recommended for a wide range of applications. It can be used inside the feedback loop of op amps to increase output current, eliminate thermal feedback and improve capacitive load drive.

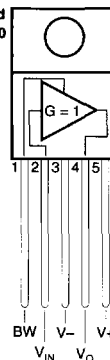
For low power applications, the BUF634 operates on 1.5mA quiescent current with 250mA output, 2000V/ μ s slew rate and 30MHz bandwidth. Bandwidth can be adjusted from 30MHz to 180MHz by connecting a resistor between V₋ and the BW Pin.

Output circuitry is fully protected by internal current limit and thermal shut-down making it rugged and easy to use.

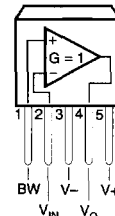
8-Pin DIP Package
SO-8 Surface-Mount Package



5-Lead
TO-220



5-Lead DPAK
Surface Mount



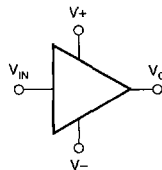
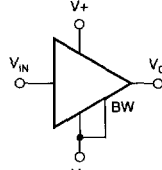
NOTE: Tabs are connected to V₋ supply.

For Immediate Assistance, Contact Your Local Salesperson

SPECIFICATIONS

ELECTRICAL

At $T_A = +25^\circ\text{C}^{(1)}$, $V_S = \pm 15\text{V}$, unless otherwise noted.

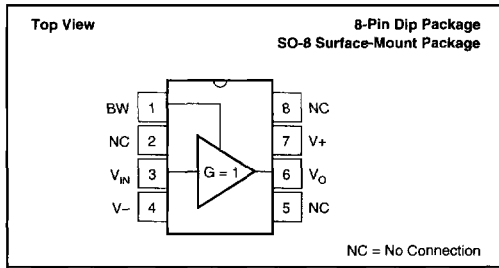
		BUF634P, U, T, F							
PARAMETER	CONDITION	LOW QUIESCENT CURRENT MODE			WIDE BANDWIDTH MODE			UNITS	
		MIN	TYP	MAX	MIN	TYP	MAX		
INPUT									
Offset Voltage vs Temperature vs Power Supply	Specified Temperature Range $V_S = \pm 2.25V^{(2)}$ to $\pm 18V$ $V_{IN} = 0V$ $R_L = 100\Omega$ $f = 10kHz$		± 30 ± 100	± 100		*	*	mV $\mu V/^{\circ}C$	
Input Bias Current			0.1 ± 0.5	1 ± 2		*	*	mV/V μA	
Input Impedance				$80 \parallel 8$			$8 \parallel 8$	± 20	M $\Omega \parallel pF$
Noise Voltage				4			*		nV/ \sqrt{Hz}
GAIN									
	$R_L = 1k\Omega, V_O = \pm 10V$	0.95	0.99		*	*		V/V	
	$R_L = 100\Omega, V_O = \pm 10V$	0.85	0.93		*	*		V/V	
	$R_L = 67\Omega, V_O = \pm 10V$	0.8	0.9		*	*		V/V	
OUTPUT									
Current Output, Continuous			± 250			*		mA	
Voltage Output, Positive	$I_O = 10mA$	(V+) -2.1	(V+) -1.7		*	*		V	
Negative	$I_O = -10mA$	(V-) +2.1	(V-) +1.8		*	*		V	
Positive	$I_O = 100mA$	(V+) -3	(V+) -2.4		*	*		V	
Negative	$I_O = -100mA$	(V-) +4	(V-) +3.5		*	*		V	
Positive	$I_O = 150mA$	(V+) -4	(V+) -2.8		*	*		V	
Negative	$I_O = -150mA$	(V-) +5	(V-) +4		*	*		V	
Short-Circuit Current			± 350	± 550		± 400	*	mA	
DYNAMIC RESPONSE									
Bandwidth, -3dB	$R_L = 1k\Omega$ $R_L = 100\Omega$		30 20			180 160		MHz MHz	
Slew Rate	20Vp-p, $R_L = 100\Omega$		2000			*		V/ μs	
Settling Time, 0.1%	20V Step, $R_L = 100\Omega$		200			*		ns	
1%	20V Step, $R_L = 100\Omega$		50			*		ns	
Differential Gain	3.58MHz, $V_O = 0.7V, R_L = 150\Omega$		4			0.4		%	
Differential Phase	3.58MHz, $V_O = 0.7V, R_L = 150\Omega$		2.5			0.1		^{\circ}	
POWER SUPPLY									
Specified Operating Voltage			± 15			*		V	
Operating Voltage Range		$\pm 2.25^{(2)}$		± 18	*		*	V	
Quiescent Current, I_Q	$I_Q = 0$		± 1.5	± 2		± 15	± 20	mA	
TEMPERATURE RANGE									
Specification		-40		+85	*		*	^{\circ}C	
Operating		-40		+125	*		*	^{\circ}C	
Storage		-55		+125	*		*	^{\circ}C	
Thermal Shutdown									
Temperature, T_J			175			*		^{\circ}C	
Thermal Resistance, θ_{JA}	"P" Package ⁽³⁾		100			*		^{\circ}C/W	
	"U" Package ⁽³⁾		150			*		^{\circ}C/W	
	"T" Package ⁽³⁾		65			*		^{\circ}C/W	
	"TT" Package		6			*		^{\circ}C/W	
	"F" Package ⁽³⁾		65			*		^{\circ}C/W	
	"F" Package		6			*		^{\circ}C/W	
									

*: Specifications the same as Low Quiescent Mode.

NOTES: (1) Tests are performed on high speed automatic test equipment, at approximately 25°C junction temperature. The power dissipation of this product will cause some parameters to shift when warmed up. See typical performance curves for over-temperature performance. (2) Limited output swing available at low supply voltage. See Output voltage specifications. (3) Typical when all leads are soldered to a circuit board. See text for recommendations.

Or, Call Customer Service at 1-800-548-6132 (USA Only)

PIN CONFIGURATION



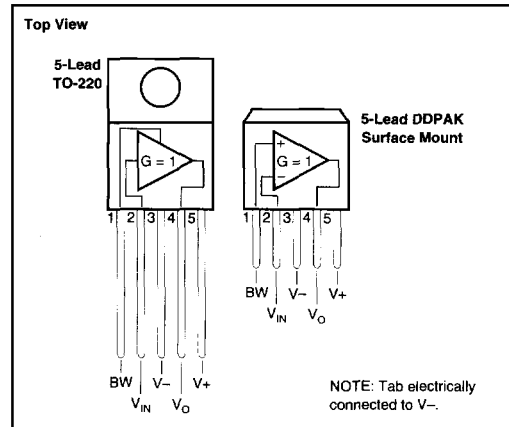
ABSOLUTE MAXIMUM RATINGS

Supply Voltage	$\pm 18V$
Input Voltage Range	$\pm V_S$
Output Short-Circuit (to ground)	Continuous
Operating Temperature	$-40^{\circ}C$ to $+125^{\circ}C$
Storage Temperature	$-55^{\circ}C$ to $+125^{\circ}C$
Junction Temperature	$+150^{\circ}C$
Lead Temperature (soldering, 10s)	$+300^{\circ}C$

PACKAGE/ORDERING INFORMATION

PRODUCT	PACKAGE	PACKAGE DRAWING NUMBER ⁽¹⁾	TEMPERATURE RANGE
BUF634P	8-Pin Plastic DIP	006	$-40^{\circ}C$ to $+85^{\circ}C$
BUF634U	SO-8 Surface-Mount	182	$-40^{\circ}C$ to $+85^{\circ}C$
BUF634T	5-Lead TO-220	315	$-40^{\circ}C$ to $+85^{\circ}C$
BUF634F	5-Lead DDPAK	325	$-40^{\circ}C$ to $+85^{\circ}C$

NOTE: (1) For detailed drawing and dimension table, please see end of data sheet, or Appendix C of Burr-Brown IC Data Book.



ELECTROSTATIC DISCHARGE SENSITIVITY

Any integrated circuit can be damaged by ESD. Burr-Brown recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet published specifications.

BUF634

3

BUFFER AMPLIFIERS

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