

EL5162, EL5163, EL5262, EL5263, EL5362

PRELIMINARY

Data Sheet

August 29, 2003

```
FN7388
```

300MHz Current Feedback Amplifiers with Enable



The EL5162, EL5163, EL5262, EL5263, and EL5362 are current feedback amplifiers with a bandwidth

of 300MHz. This makes these amplifiers ideal for today's high speed video and monitor applications.

With a supply current of just 1.5mA and the ability to run from a single supply voltage from 5V to 12V, these amplifiers are also ideal for hand held, portable or battery-powered equipment.

The EL5162 also incorporates an enable and disable function to reduce the supply current to 100 μ A typical per amplifier. Allowing the \overline{CE} pin to float or applying a low logic level will enable the amplifier.

The EL5163 is offered in a 5-pin SOT-23 package, the EL5162 in a 6-pin SOT-23 and industry-standard 8-pin SO packages, the EL5262 in a 10-pin MSOP package, the EL5263 in 8-pin SO and MSOP packages, and the EL5362 in 16-pin SO and QSOP packages. All operate over the industrial temperature range of -40°C to +85°C.

Features

- 500MHz -3dB bandwidth
- 4000V/µs slew rate
- 1.5mA supply current
- Single and dual supply operation, from 5V to 12V supply span
- Fast enable/disable (EL5162 only)
- Available in SOT-23 packages
- High speed, 1.4GHz product available (EL5167 & EL5167)
- High speed, 5mA, 600MHz product available (EL5164 & EL5165)

Applications

- · Battery powered equipment
- · Handheld, portable devices
- Video amplifiers
- Cable drivers
- RGB amplifiers
- Test equipment
- Instrumentation
- · Current to voltage converters

PART NUMBER	PACKAGE	TAPE & REEL	PKG. DWG. #
EL5263IY (Note)	8-Pin MSOP	-	MDP0043
EL5263IY-T7	8-Pin MSOP	7"	MDP0043
EL5263IY-T13	8-Pin MSOP	13"	MDP0043
EL5263IS (Note)	8-Pin SO	-	MDP0027
EL5263IS-T7	8-Pin SO	7"	MDP0027
EL5263IS-T13	8-Pin SO	13"	MDP0027
EL5362IS (Note)	16-Pin SO	-	MDP0027
EL5362IS-T7	16-Pin SO	7"	MDP0027
EL5362IS-T13	16-Pin SO	13"	MDP0027
EL5362IU (Note)	16-Pin QSOP	-	MDP0040
EL5362IU-T7	16-Pin QSOP	7"	MDP0040
EL5362IU-T13	16-Pin QSOP	13"	MDP0040

Ordering Information

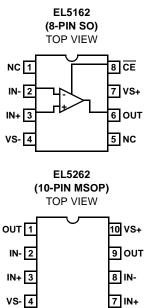
PART NUMBER PACKAGE		TAPE & REEL	PKG. DWG. #
EL5162IS	8-Pin SO	-	MDP0027
EL5162IS-T7	8-Pin SO	7"	MDP0027
EL5162IS-T13	8-Pin SO	13"	MDP0027
EL5162IW	6-Pin SOT-23	-	MDP0038
EL5162IW-T7	6-Pin SOT-23	7"	MDP0038
EL5162IW-T13	6-Pin SOT-23	13"	MDP0038
EL5163IW	5-Pin SOT-23	-	MDP0038
EL5163IW-T7	5-Pin SOT-23	7"	MDP0038
EL5163IW-T13	5-Pin SOT-23	13"	MDP0038
EL5262IY (Note)	10-Pin MSOP	-	MDP0043
EL5262IY-T7	10-Pin MSOP	7"	MDP0043
EL5262IY-T13	10-Pin MSOP	13"	MDP0043

Note: Duals and triples to be released October 2003

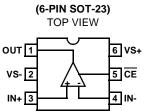
CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures. 1-888-INTERSIL or 321-724-7143 | Intersii (and design) is a registered trademark of Intersii Americas Inc. Copyright © Intersii Americas Inc. 2003. All Rights Reserved. Elantec is a registered trademark of Elantec Semiconductor, Inc. All other trademarks mentioned are the property of their respective owners.

Pinouts

CE 5

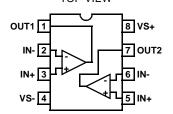


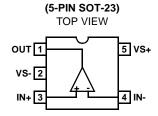
6 CE



EL5162

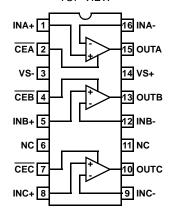
EL5263 (8-PIN SO, MSOP) TOP VIEW





EL5163

EL5362 (16-PIN SO, QSOP) TOP VIEW



Absolute Maximum Ratings (T_A = 25°C)

Supply Voltage between V _S + and V _S 13.2	2V
Maximum Continuous Output Current	۱A
Operating Junction Temperature	°C
Power Dissipation See Curve	es

Pin VoltagesV _S 0.5V to V _S + +0.5V	V
Storage Temperature65°C to +150°C	С
Operating Temperature40°C to +85°C	С

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

IMPORTANT NOTE: All parameters having Min/Max specifications are guaranteed. Typical values are for information purposes only. Unless otherwise noted, all tests are at the specified temperature and are pulsed tests, therefore: $T_J = T_C = T_A$

Electrical Specifications V_S + = +5V, V_S - = -5V, R_F = 750 Ω for A_V = 1, R_F = 400 Ω for A_V = 2, R_L = 150 Ω , T_A = 25°C unless otherwise specified.

PARAMETER	DESCRIPTION	CONDITIONS	MIN	ТҮР	MAX	UNIT
AC PERFORMA	ANCE	•	<u>.</u>			
BW	-3dB Bandwidth	$A_{V} = +1, R_{L} = 500\Omega$		500		MHz
		$A_{V} = +2, R_{L} = 150\Omega$		233		MHz
BW1	0.1dB Bandwidth			30		MHz
SR	Slew Rate	V_{O} = -2.5V to +2.5V, A_{V} = +2, R_{L} = 100 Ω	2800	4000	6000	V/µs
t _S	0.1% Settling Time	V_{OUT} = -2.5V to +2.5V, A _V = +1		25		ns
e _N	Input Voltage Noise			3		nV/√Hz
i _N -	IN- Input Current Noise			10		pA/√Hz
i _N +	IN+ Input Current Noise			6.5		pA/√Hz
dG	Differential Gain Error (Note 1)	A _V = +2		0.05		%
dP	Differential Phase Error (Note 1)	A _V = +2		0.15		o
DC PERFORM	ANCE	1				1
V _{OS}	Offset Voltage		-5	-2	5	mV
T _C V _{OS}	Input Offset Voltage Temperature Coefficient	Measured from T _{MIN} to T _{MAX}		10		µV/°C
R _{OL}	Transimpedance		500	1000		kΩ
INPUT CHARA	CTERISTICS					
CMIR	Common Mode Input Range		±3	±3.3		V
CMRR	Common Mode Rejection Ratio		50	62	75	dB
-ICMR	- Input Current Common Mode Rejection		-1		1	μA/V
+I _{IN}	+ Input Current		-8	1	8	μA
-I _{IN}	- Input Current		-10	1.0	10	μA
R _{IN}	Input Resistance		800	900	3000	kΩ
C _{IN}	Input Capacitance			1		pF
OUTPUT CHAR	ACTERISTICS				-	
V _O	Output Voltage Swing	$R_L = 150\Omega$ to GND	±3.35	±3.6	±3.75	V
		$R_L = 1k\Omega$ to GND	±3.75	±3.9	±4.15	V
IOUT	Output Current	$R_L = 10\Omega$ to GND	60	100	180	mA
SUPPLY						
I _{SON}	Supply Current - Enabled	No load, V _{IN} = 0V	1.3	1.5	1.7	mA
ISOFF	Supply Current - Disabled	No load, V _{IN} = 0V	-25	-14	-5	μA

Electrical Specifications V_S + = +5V, V_S - = -5V, R_F = 750 Ω for A_V = 1, R_F = 400 Ω for A_V = 2, R_L = 150 Ω , T_A = 25°C unless otherwise specified. **(Continued)**

PARAMETER	DESCRIPTION	CONDITIONS	MIN	TYP	MAX	UNIT
PSRR	Power Supply Rejection Ratio	DC, $V_{S} = \pm 4.75V$ to $\pm 5.25V$	65	77		dB
-IPSR	- Input Current Power Supply Rejection	DC, $V_{S} = \pm 4.75V$ to $\pm 5.25V$	-0.5	0.1	0.5	μA/V
ENABLE (EL510	62 ONLY)					
t _{EN}	Enable Time			200		ns
t _{DIS}	Disable Time			800		ns
I _{IHCE}	CE Pin Input High Current	CE = V _S +	5	15	25	μA
I _{ILCE}	CE Pin Input Low Current	CE = V _S -	-1	0	1	μA
VIHCE	CE Input High Voltage for Power-down		V _S + - 1			V
V _{ILCE}	CE Input Low Voltage for Power-down				V _S + - 3	V

NOTE:

1. Standard NTSC test, AC signal amplitude = 286mVP-P, f = 3.58MHz

All Intersil U.S. products are manufactured, assembled and tested utilizing ISO9000 quality systems. Intersil Corporation's quality certifications can be viewed at www.intersil.com/design/quality

Intersil products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com

