

Features

- Drives up to 250mA from a +12V supply
- 20V_{p-p} differential output drive into 100Ω
- -85dBc typical driver output distortion at full output at 150kHz
- Low quiescent current of 7.5mA per amplifier

Applications

- ADSL G.lite CO line driving
- ADSL full rate CPE line driving
- G.SHDSL, HDSL2 line driver
- Video distribution amplifier
- Video twisted-pair line driver

Ordering Information

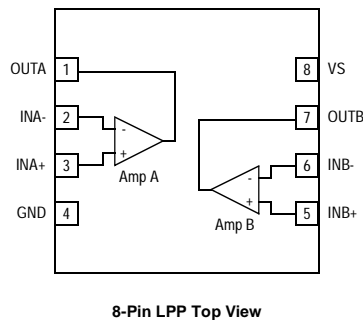
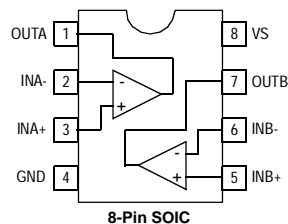
Part No	Package	Tape & Reel	Outline #
EL1509CS	8-Pin SOIC		MDP00XX
EL1509CL	8-Pin LPP		MDP00XX

General Description

The EL1509C is a dual operational amplifier designed for customer premise line driving in DMT ADSL solutions. This device features a high drive capability of 250mA while consuming only 7.5mA of supply current per amplifier and operating from a single 5V to 12V supply. This driver achieves a typical distortion of less than -85dBc, at 150kHz into a 25Ω load. The EL1509C is available in the industry standard 8-pin SOIC as well as the thermal 8-pin LPP package. Both are specified for operation over the full -40°C to +85°C temperature range.

The EL1509C is ideal for ADSL, SDSL, HDSL2 and VDSL line driving applications.

Connection Diagram



Note: All information contained in this data sheet has been carefully checked and is believed to be accurate as of the date of publication; however, this data sheet cannot be a "controlled document". Current revisions, if any, to these specifications are maintained at the factory and are available upon your request. We recommend checking the revision level before finalization of your design documentation.

EL1509C

Medium Power Differential Line Driver

Absolute Maximum Ratings $(T_A = 25^\circ\text{C})$

Values beyond absolute maximum ratings can cause the device to be prematurely damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

V_{S+} Voltage to Ground	-0.3V to +14.6V
V_{IN+} Voltage	GND to V_{S+}
Current into any Input	8mA

Continuous Output Current	75mA
Operating Temperature Range	-40°C to $+85^\circ\text{C}$
Storage Temperature Range	-60°C to $+150^\circ\text{C}$
Operating Junction Temperature	-40°C to $+150^\circ\text{C}$
Power Dissipation	See Curves
ESD Voltage	2kV

Important Note:

All parameters having Min/Max specifications are guaranteed. Typ 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 Characteristics

$V_S = +12\text{V}$, $R_F = 1.4\text{k}\Omega$, $R_L = 100\Omega$ connected to mid supply, $T_A = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Description	Conditions	Min	Typ	Max	Unit
AC Performance						
BW	-3dB Bandwidth	$A_V = +4$		70		MHz
HD	Total Harmonic Distortion	$f = 150\text{kHz}$, $V_O = 16\text{Vp-p}$, $R_L = 25\Omega$		-85		dBc
dG	Differential Gain	$A_V = +2$, $R_L = 37.5\Omega$		0.15		%
d θ	Differential Phase	$A_V = +2$, $R_L = 37.5\Omega$		0.1		$^\circ$
SR	Slewrate	V_{OUT} from -4.5V to $+4.5\text{V}$		500		V/ μS
DC Performance						
V_{OS}	Offset Voltage		-20		20	mV
ΔV_{OS}	V_{OS} Mismatch		-10		10	mV
R_{OL}	Transimpedance	V_{OUT} from -4.5V to $+4.5\text{V}$		1.4		M Ω
Input Characteristics						
I_{B+}	Non-Inverting Input Bias Current		-3		3	μA
I_{B-}	Inverting Input Bias Current		-30		30	μA
e_N	Input Noise Voltage			2.5		nV/ $\sqrt{\text{Hz}}$
i_N	-Input Noise Current			18		pA/ $\sqrt{\text{Hz}}$
Output Characteristics						
V_{OUT}	Loaded Output Swing (single ended)	$R_L = 100\Omega$ to GND		11		V
		$R_L = 25\Omega$ to GND		9.38		V
I_{OUT}	Output Current	$R_L = 0\Omega$		450		mA
Supply						
V_S	Supply Voltage	Single Supply	5		12	V
I_S	Supply Current	All Outputs at Mid Supply		15		mA

EL1509C*Medium Power Differential Line Driver***General Disclaimer**

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