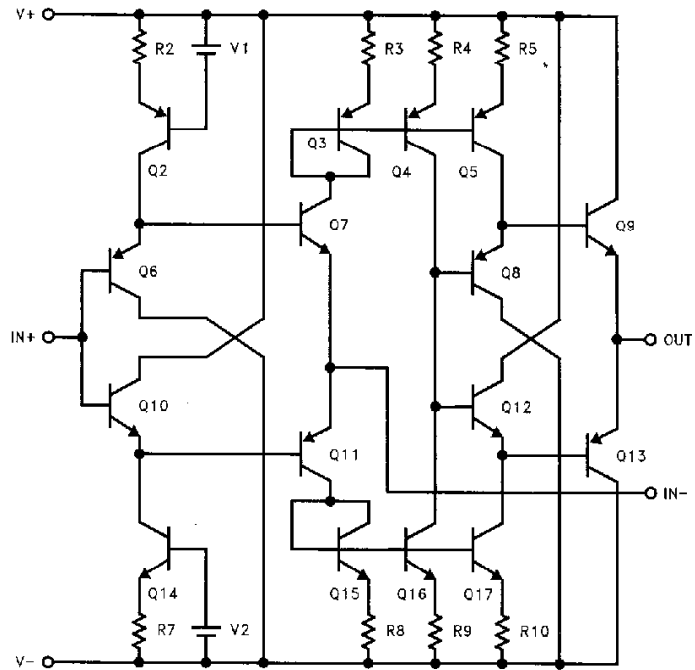


EL2180C 250 MHz Current Mode Feedback Amplifier

Simplified Schematic



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

Voltage between V_{S+} and V_{S-}	+12.6V	Operating Ambient Temperature Range	-40°C to +85°C
Common-Mode Input Voltage	V_{S-} to V_{S+}	Operating Junction Temperature	
Differential Input Voltage	$\pm 6\text{V}$	Plastic Packages	150°C
Current into +IN or -IN	$\pm 7.5\text{ mA}$	Output Current	$\pm 120\text{ mA}$
Internal Power Dissipation	See Curves		

DC Electrical Characteristics $V_S = \pm 5\text{V}$, $R_L = 150\Omega$, $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Description	Conditions	Min	Typ	Max	Units
V_{OS}	Input Offset Voltage			2.5	15	mV
TCV_{OS}	Average Input Offset Voltage Drift	Measured from T_{MIN} to T_{MAX}		5		$\mu\text{V}/^\circ\text{C}$
$+I_{IN}$	+ Input Current			1.5	15	μA
$-I_{IN}$	- Input Current			16	30	μA
CMRR	Common Mode Rejection Ratio	$V_{CM} = \pm 3.5\text{V}$	45	50		dB
-ICMR	- Input Current Common Mode Rejection	$V_{CM} = \pm 3.5\text{V}$		5	30	$\mu\text{A}/\text{V}$
PSRR	Power Supply Rejection Ratio	V_S is moved from $\pm 4\text{V}$ to $\pm 6\text{V}$	60	70		dB
-IPSR	- Input Current Power Supply Rejection	V_S is moved from $\pm 4\text{V}$ to $\pm 6\text{V}$		1	15	$\mu\text{A}/\text{V}$
R_{OL}	Transimpedance	$V_{OUT} = \pm 2.5\text{V}$	150	300		$\text{k}\Omega$
$+R_{IN}$	+ Input Resistance	$V_{CM} = \pm 3.5\text{V}$	0.5	2		$\text{M}\Omega$
$+C_{IN}$	+ Input Capacitance			1.2		pF
CMIR	Common Mode Input Range		± 3.5	± 4.0		V

EL2180C 250 MHz Current Mode Feedback Amplifier

DC Electrical Characteristics — Contd.

$V_S = \pm 5V$, $R_L = 150\Omega$, $T_A = 25^\circ C$ unless otherwise specified

Parameter	Description	Conditions	Min	Typ	Max	Units
V_O	Output Voltage Swing	$V_S = \pm 5$	± 3.5	± 4.0		V
		$V_S = +5$ Single-Supply, High		4.0		V
		$V_S = +5$ Single-Supply, Low			0.3	
I_O	Output Current	EL2180C only	80	100		mA
I_S	Supply Current	Per Amplifier		3	6	mA

AC Electrical Characteristics

$V_S = \pm 5V$, $R_F = R_G = 750\Omega$, $R_L = 150\Omega$, $T_A = 25^\circ C$ unless otherwise specified

Parameter	Description	Conditions	Min	Typ	Max	Units
-3 dB BW	-3 dB Bandwidth	$A_V = +1$		250		MHz
-3 dB BW	-3 dB Bandwidth	$A_V = +2$		180		MHz
0.1 dB BW	0.1 dB Bandwidth	$A_V = +2$		50		MHz
SR	Slew Rate	$V_{OUT} = \pm 2.5V$, $A_V = +2$	600	1200		V/ μs
t_r , t_f	Rise and Fall Time	$V_{OUT} = \pm 500$ mV		1.5		ns
t_{pd}	Propagation Delay	$V_{OUT} = \pm 500$ mV		1.5		ns
OS	Overshoot	$V_{OUT} = \pm 500$ mV		3.0		%
t_s	0.1% Settling	$V_{OUT} = \pm 2.5V$, $A_V = -1$		15		ns
dG	Differential Gain	$A_V = +2$, $R_L = 150\Omega$ (Note 1)		0.05		%
dP	Differential Phase	$A_V = +2$, $R_L = 150\Omega$ (Note 1)		0.05		°
dG	Differential Gain	$A_V = +1$, $R_L = 500\Omega$ (Note 1)		0.01		%
dP	Differential Phase	$A_V = +1$, $R_L = 500\Omega$ (Note 1)		0.01		°

Note 1: DC offset from 0V to 0.714V, AC amplitude 286 mV_{p,p}, $f = 3.58$ MHz.

Test Circuit (per Amplifier)

