



HARRIS
SEMICONDUCTOR
PRODUCTS DIVISION
A DIVISION OF HARRIS CORPORATION

HA-2507/2517/2527

**Epoxy-Packaged, High Slew Rate
Operational Amplifier Series**

Preliminary

FEATURES

	HA-2507	HA-2517	HA-2527	
● High Slew Rate	30	60	120	V/ μ s
● Fast Settling	330	250	200	ns
● Wide Power Bandwidth	0.5	1.0	1.6	MHz
● High Gain Bandwidth	12	12	20	MHz
● High Input Impedance	50	100	100	M Ω

APPLICATIONS

- Pulse Amplification
- Video Amplifiers
- High Speed Test Equipment
- Medical Instrumentation
- Data Acquisition Systems
- Signal Generators

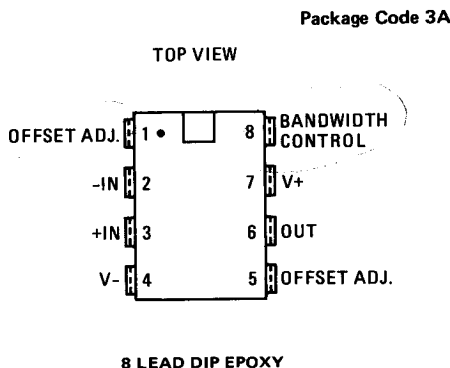
DESCRIPTION

HA-2507/2517/2527 operational amplifiers are a series of high-performance, epoxy-packaged monolithic IC's designed to deliver excellent slew rate, bandwidth and settling time specifications. Typical slew rate specifications for HA-2507, HA-2517 and HA-2527 are 30V/ μ sec, 60V/ μ sec and 120V/ μ sec respectively. Corresponding settling times (10V step to 0.1%) are 330ns, 250ns and 200ns for HA-2507, HA-2517 and HA-2527 respectively. Bandwidths range from 12MHz to 20MHz. This level of performance is achieved through the use of Harris's unique Dielectric Isolation processing techniques. HA-2507/2517/2527 are internally compensated; HA-2507 and HA-2517 are stable for closed loop gains (A_V) greater than or equal to unity. HA-2527 is stable for $A_V > 3$.

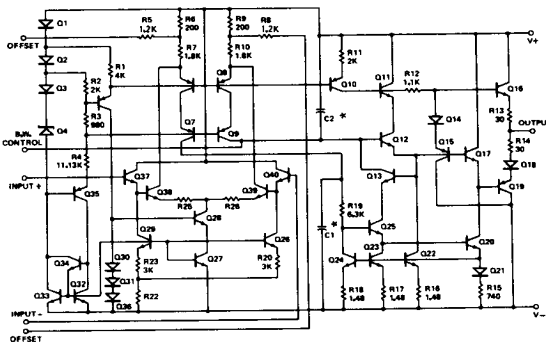
This series of op amps affords an economical means of designing high performance equipment for industrial and commercial use. Their slew rate and settling time performance makes them ideally suited for high speed D/A, A/D and pulse amplification designs. The wide bandwidth offered by these devices also makes them valuable components in RF and video applications. HA-2507/2517/2527 also deliver offset current, bias current and offset voltage specifications compatible with the requirements of accurate signal conditioning systems.

The HA-2507/2517/2527 are specified from 0°C to +75°C and are available in 8-lead epoxy DIP packages that have been extensively tested and qualified to deliver the high level of performance and reliability that are expected of Harris Semiconductor's operational amplifiers.

PINOUT



SCHEMATIC



*VALUES OF C1 AND C2 VARY DEPENDING ON DEVICE TYPE.

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS

Voltage Between V ⁺ and V ⁻ Terminals	40.0V	Operating Temperature Range – HA-2507/HA-2517	0°C ≤ T _A ≤ +75°C
Differential Input Voltage	±15.0V	HA-2527	
Peak Output Current	50mA	Storage Temperature Range	-65°C ≤ T _A ≤ +150°C
Internal Power Dissipation	300mW		

ELECTRICAL CHARACTERISTICS

V⁺ = +15V D.C., V⁻ = -15V D.C.

CHARACTERISTICS		HA-2507 0°C to +75°C			HA-2517 0°C to +75°C			HA-2527 0°C to +75°C			UNITS
		LIMITS			LIMITS			LIMITS			
		PARAMETER	TEMP.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	
INPUT CHARACTERISTICS											
Offset Voltage	+25°C Full		5	8 10		5	10 14		5	10 14	mV mV
Offset Voltage Average Drift	Full		25			30			30		μV/°C
Bias Current	+25°C Full		125	250 500		125	250 500		125	250 500	nA nA
Offset Current	+25°C Full		20	50 100		20	50 100		20	50 100	nA nA
Input Resistance (Note 10)	+25°C	20	50		40	100		40	100		MΩ
Common Mode Range	Full	±10.0			±10.0			±10.0			V
TRANSFER CHARACTERISTICS											
Large Signal Voltage Gain (Note 1, 4)	+25°C Full	15K 10K	25K		7.5K 5K	15K		7.5K 5K	15K		V/V V/V
Common Mode Rejection Ratio (Note 2)	Full	74	90		74	90		74	90		dB
Gain Bandwidth Product (Note 3)	+25°C		12			12			20		MHz
OUTPUT CHARACTERISTICS											
Output Voltage Swing (Note 1)	Full	±10.0	±12.0		±10.0	±12.0		±10.0	±12.0		V
Output Current (Note 4)	+25°C	±10	±20		±10	±20		±10	±20		mA
Full Power Bandwidth (Note 4)	+25°C	220	500		450	1000		750	1600		kHz
TRANSIENT RESPONSE											
Rise Times (Notes 1, 5, 6 & 8)	+25°C		25	50		25	50		25	50	ns
Overshoot (Notes 1, 5, 7 & 8)	+25°C		25	50		25	50		25	50	%
Slew Rate (Notes 1, 5, 8 & 11)	+25°C	± 15	± 30		± 30	± 60		± 60	±120		V/ μ s
Settling Time to 0.1% (Notes 1, 5, 8 & 11)	+25°C		0.33			0.25			0.20		μ s
POWER SUPPLY CHARACTERISTICS											
Supply Current	+25°C		4	6		4	6		4	6	mA
Power Supply Rejection Ratio (Note 9)	Full	74	90		74	90		74	90		dB

- NOTES:
- R_L = 2K
 - V_{CM} = ±10V
 - A_V > 10
 - V_O = +10.0V
 - C_L = 50pF
 - V_O = ±200mV for HA-2507 and HA-2517; V_O = +200mV for HA-2527
 - V_O = ±200mV
 - For HA-2507 and HA-2517, A_V = 1 For HA-2527, A_V = 3
 - ΔV = +5.0V
 - Guaranteed by design
 - V_{OUT} = ±5V for 2507, 2517 & 2527