42109

OPERATIONAL AMPLIFIER
DSCC DWG #5962-90659

Replacement for PA12

Mii

MICROPAC

MICROCIRCUITS PRODUCTS DIVISION

Features:	**Applications:**
• Wide Supply Voltage Range (±10 to ±50 Volts) • High Output Current (15A Peak) • Small Size (TO-3, 8 Pins) • Low Cost	• Motor, Valve and Actuator Control • Magnetic Deflection Circuits • Audio Amplifiers • Power Transducers

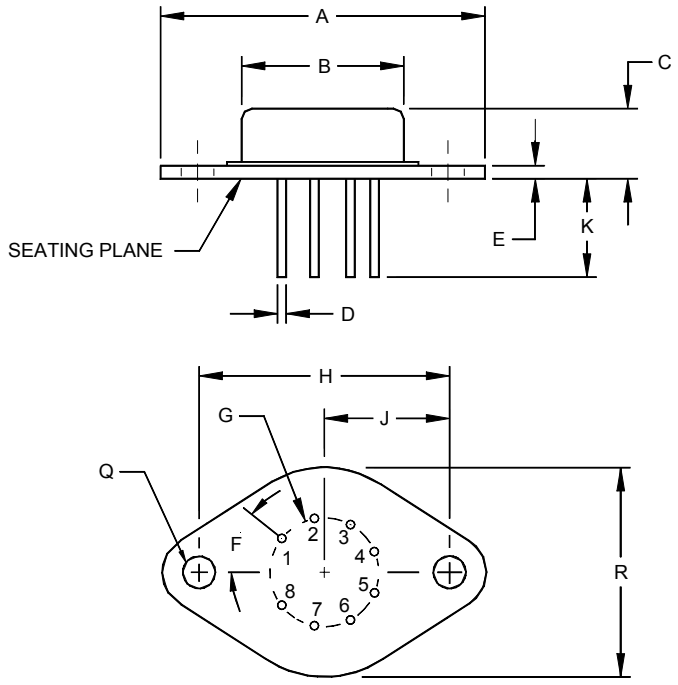
DESCRIPTION

The 42109, DSCC drawing #5962-9065901 is a high power, high voltage, high current, power operational amplifier and is a replacement for the PA12. The Op Amp is designed to drive capacitive, inductive and resistive loads. The device is complete with current limiting using external resistors, and fabricated using hybrid techniques to maximize reliability, minimize size and give top performance.

ABSOLUTE MAXIMUM RATINGS

Power Supply Voltage (V_{CC}) ..... ±50VDC
Differential Input Voltage ..... $\pm V_{CC}$ -3V
Common Mode Input Voltage ..... $\pm V_{CC}$
Operating Temperature Range (case) ..... -55°C to +125°C
Storage Temperature Range ..... -65°C to +150°C
Output Current ..... 15A Peak
Power Dissipation at T_C = 25°C 125W
Lead Temperature (Soldering < 10 sec) ..... +300°C

Mechanical Configuration



Note: Leads in true position with 0.010" (0.25mm) R at MMC at seating plane
Pin Numbers shown for reference only. Numbers may not be marked on package.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.510	1.550	38.35	39.37
B	0.760	0.780	19.30	19.81
C		0.290		7.37
D	0.97	1.07	0.038	0.042
E	0.080	0.100	2.03	2.54
F	40º BASIC		40º BASIC	
G	.500 BASIC		12.7 BASIC	
H	1.186 BASIC		30.12 BASIC	
J	.593 BASIC		15.06 BASIC	
K	0.460	0.500	11.68	12.70
Q	0.151	0.161	3.84	4.09
R	0.990	1.010	25.15	25.65

ELECTRICAL CONNECTIONS	
Pin 1	Output 1
Pin 2	CL^+
Pin 3	$+V_C$
Pin 4	+IN
Pin 5	-IN
Pin 6	$-V_C$
Pin 7	N.C.
Pin 8	CL-

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ELECTRICAL CHARACTERISTICS

T_C = 25° C, V_{CC} = ±36 VDC
unless otherwise specified

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	V_{IO}	T_C = 25°C T_C = -55°C to +125°C			±6 ±65	mV uV/ºC
Input Offset Voltage vs Supply	V_{IO} (V_{CC})				±200	µV/V
Input Offset Voltage vs Power	V_{IO} (P)			±20		µV/W
Input Bias Current	I_{B+}, I_{B-}	T_C = 25°C T_C = -55°C to +125°C			30 400	nA nA/°C
Input Bias Current vs Supply	I_B (V_{CC})	T_C = 25°C		10		PA/V
Input Offset Current	I_{I0}	T_C = 25°C T_C = -55°C to +125°C		 50	30	pA nA/°C
Input Impendance	R_{IN}	T_C = 25°C		200		MΩ
Gain Bandwidth Product @ 1 MHz	G_B	T_C = 25°C R_L = 8Ω		4		MHz
Power Bandwidth	P_B	R_L = 8Ω	13	20		kHz
Phase Margin	I_m	-55°C to +125°C R_L = 8Ω		45		Degree
Common Mode Rejection Ratio	CMRR	V_{ICM} = ±9V V_{CC} = ±15V, R_L = 500	74			dB
Output Voltage/ Voltage Swing	V_0	I_0 = 10A, V_{CC} = ±16V R_L = 1Ω	±10			V
Output Voltage Swing	V_0 V_0	T_C = 25°C, I_0 =5A I_0 = 80mA Full Temp Range	 ±V_{CC} - 5			 V
Open Loop Gain	A_V	R_L = 250Ω, f = 10HZ		94		dB
Slew Rate @ 20% of V_0	SR	R_L = 100Ω, R_{CL} = 0 V_{IN} = 40 V_{P-P} square wave f = 1kHz, V_0 = 40 V_{P-P}	2.5	4.0		V/µS
Power Supply	V_{CC}	-55°C to +125°C	±10	±40	±50	V
Quiescent Current	I_S	V_{IN} = 1.G = 100 T_C = 25°C		25	50	mA