

Integrated Circuit Economy Operational Amplifier

85.27 10/67
Supersedes 85.27 8/67

PA238

NUCLETRON VERTRIEBS GMBH
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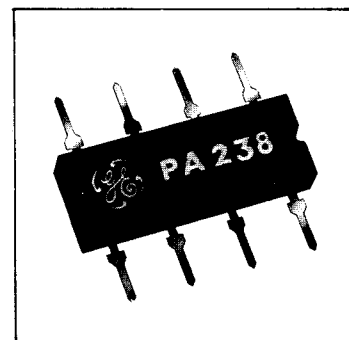
The General Electric PA238 economy operational amplifier is a monolithic integrated circuit intended for use in consumer and industrial products. An expanded operating temperature range, short circuit protection, and high voltage gain are some of the performance features of this low cost device. The PA238 is housed in an 8-lead dual-in-line package; it may be used in a wide variety of industrial applications.

Features:

1. -55°C to +110°C Operating Temperature
2. ±6 Volts Supply
3. 10 V_{P-P} Output
4. Short Circuit Protection
5. Dual-in-line Package

Applications:

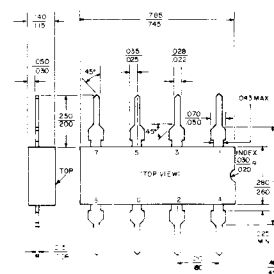
1. Communications Equipment
2. Power Supplies
3. Signal Processing Equipment
4. Signal Generating Equipment



absolute maximum ratings: (25°C) (unless otherwise specified)

Supply Voltages	V _{CC}	±7	Volts
Operating Temperature	T _A	-55°C to +110°C	
Storage Temperature	T _{STG}	-65°C to +150°C	
Common Mode Input Range		±1.5	Volts
Package Dissipation (25°C Free Air)	P _T	800	mW

(Derate 8mW/°C increase in ambient temperature above 25°C.)



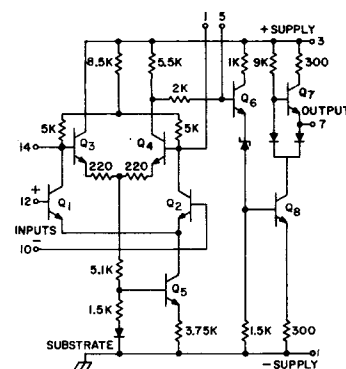
NOTE: ALL DIMENSIONS ARE IN INCHES AND ARE REFERENCE UNLESS TOLERANCES

PACKAGE OUTLINE

electrical characteristics: V_{CC} = ±6 Volts (25°C)

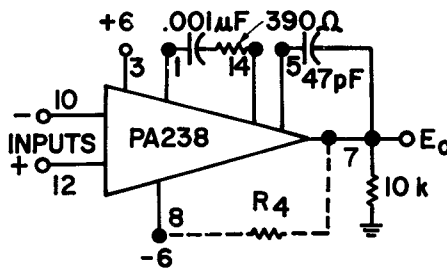
(unless otherwise specified)

	Min.	Typ.	Max.	
Open Loop Voltage Gain	4	7	12	k
Input Resistance	15	35		kOhms
Input Offset Voltage	10 ⁻⁵	2.0	10	mV
DC Offset Drift (0 to 70°C)	10 ⁻⁵	10		μV/°C
Input Bias Current		2		μA
Common Mode Rejection		90		dB
Output Resistance		100	200	Ohms
Supply Current (No Signal)		3		mA
Open Loop Voltage Gain Bandwidth (3 dB down)		.5		MHz
(Unity Gain)		25		MHz
Output Voltage Swing (R _L = 6 kΩ)	9	10		V _{P-P}



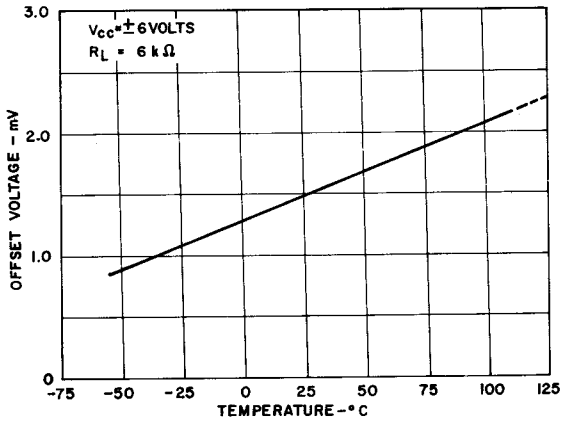
CIRCUIT DIAGRAM

Stabilization Network
(See Notes 1 and 2)

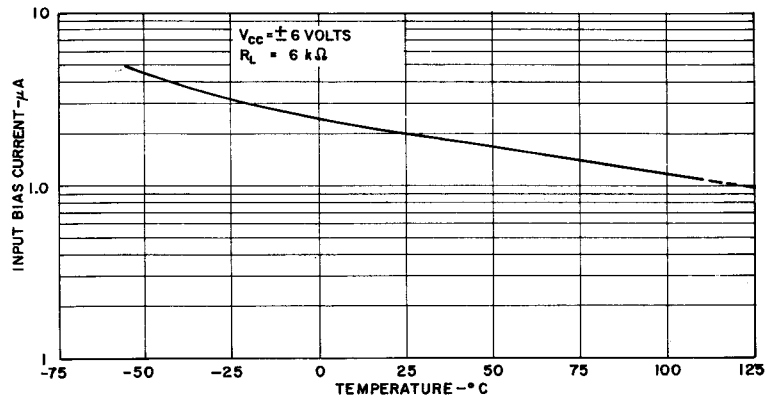


- Notes:**
- (1) Recommended stabilization network for closed loop gains of unity or greater, inverting or non-inverting configuration.
 - (2) A value of 10k may be used for R₁ when it is desired to operate the output in a Class A mode. Otherwise, R₁ is not required.

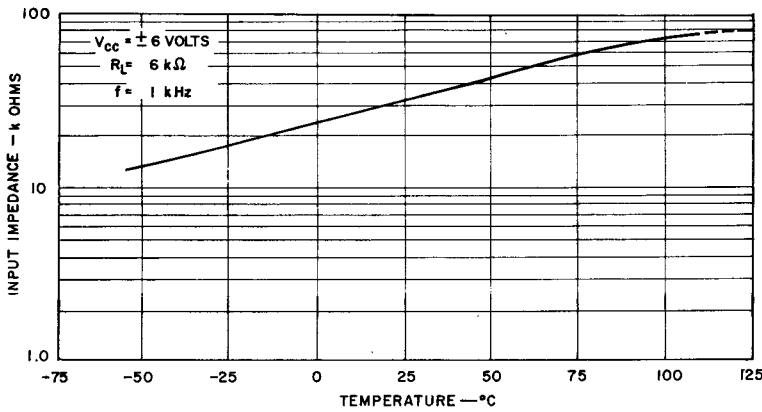
Input Offset Voltage vs. Temperature



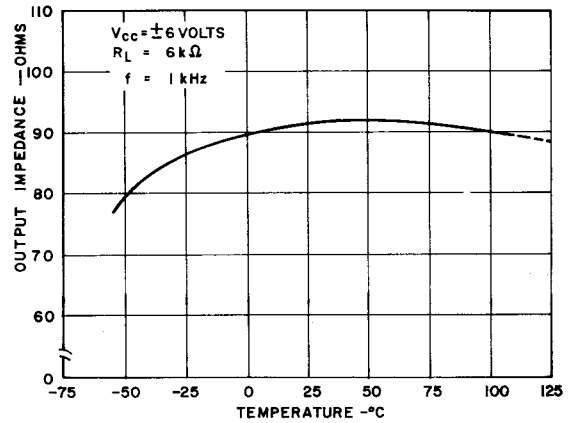
Input Bias Current vs. Temperature



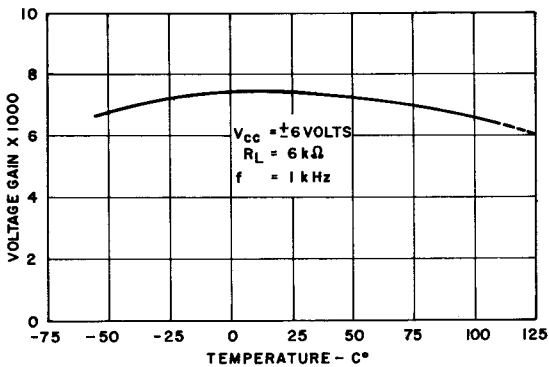
Input Impedance vs. Temperature



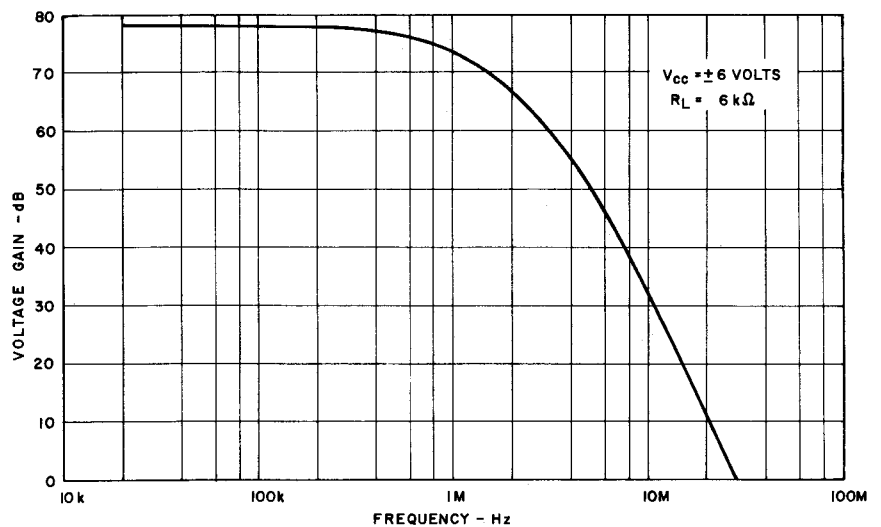
Output Impedance (Class A) vs. Temperature—See Note 2



Open Loop Voltage Gain (Class A) vs. Temperature—See Note 2



Open Loop Voltage Gain vs. Frequency



Codes: 50-56; 41, 42, 44, 45, 47