

LOW POWER OPERATIONAL AMPLIFIER IN LOW PROFILE DUAL IN-LINE PACKAGE APPROVED TO DESC DRAWING 5962-94520



Monolithic Operational Amplifier In Isolated Flat Packs

FEATURES

- Approved to DESC 5962-94520
- Similar To OPA541
- Isolated Hermetic Dual In-Line Package
- Low Profile
- Surface Mount Lead Form Available
- FET Input
- Power Supplies To $\pm 40V$

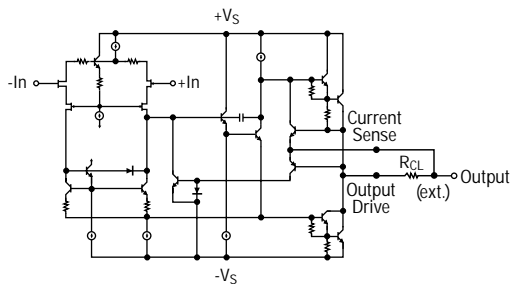
DESCRIPTION

These devices are designed specifically for electronic assemblies requiring low profile package types. The OMA541SF is a monolithic operational amplifier capable of operating from power supplies up to $\pm 40V$ and peak currents of up to 2 amps. The packaging provides the ultimate in size, thermal performance and ease of assembly. It is ideally suited for high density electronic assemblies and is approved to DESC drawing 5962-94520.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Supply Voltage, $+V_S$ to $-V_S$	80V
Output Current, Peak	2.0A
Output Current, Continuous5A
Power Dissipation, Internal	25W
Operating Temperature Range	-55°C to 125°C
Storage Temperature Range	-55°C to 150°C
Maximum Junction Temperature	175°C
Lead Temperature (10 Sec. Soldering)	300°C

SCHEMATIC



3.4

OMA541SFB

ELECTRICAL CHARACTERISTICS (At $T_C = 25^\circ\text{C}$; $V_S = \pm 34V_{DC}$ unless otherwise noted.)

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Offset Voltage					
V_{OS}			± 0.01	± 2	mV
vs Temperature	-25°C to $+125^\circ\text{C}$		± 15	± 30	$\mu\text{V}/^\circ\text{C}$
vs Temperature	-55°C to -25°C		± 20	± 40	$\mu\text{V}/^\circ\text{C}$
vs Supply Voltage	$V_S = \pm 10\text{V}$ to $\pm V_{MAX}$		± 2.5	± 10	$\mu\text{V}/\text{V}$
vs Power			± 20	± 60	$\mu\text{V}/\text{W}$
Input Bias Current			4	50	pA
I_B					
Input Offset Current					
I_{OS}			± 1	± 30	pA
	Specified Temperature Range		± 5	± 20	nA
Input Characteristics					
Common-Mode Voltage Range	-55°C to $+85^\circ\text{C}$	$\pm(\alpha\sqrt{S^2} - 6)$	$\pm(\alpha\sqrt{S^2} - 3)$		V
	$+85^\circ\text{C}$ to $+125^\circ\text{C}$	$\pm(\alpha\sqrt{S^2} - 6.5)$	$\pm(\alpha\sqrt{S^2} - 3.2)$		V
Common-Mode Rejection	$V_{CM} = \pm(\alpha\sqrt{S^2} - 6\text{V})$		113		dB
	$V_{CM} = \pm 22\text{V}$	96			dB
Input Capacitance*			5		pF
Input Capacitance, DC*			1		T
Gain Characteristics					
Open Loop Gain at 10Hz	$R_L = 10\text{k}$	90	97		dB
Gain-Bandwidth Product*			1.6		MHz
Output					
Voltage Swing	$I_O = 2\text{A}$	$\pm(\alpha\sqrt{S^2} - 4.5)$	$\pm(\alpha\sqrt{S^2} - 3.6)$		V
	$I_O = .25\text{A}$	$\pm(\alpha\sqrt{S^2} - 4)$	$\pm(\alpha\sqrt{S^2} - 3.2)$		V
Current, Peak ⁽¹⁾		1.5	2.0		A
AC Performance					
Slew Rate		6	10		V/ μs
Power Supply					
Power Supply Voltage, $\pm V_S$		± 10	± 35	± 40	V
Current, Quiescent			20	25	mA
	Specified Temperature Range		25	35	mA
Thermal Resistance					
θ_{JC} (Junction-to-Case)	AC Output > 60Hz		1.65	2.00	$^\circ\text{C}/\text{W}$
θ_{JC} (Junction-to-Case)	DC Output		1.85	2.50	$^\circ\text{C}/\text{W}$
θ_{JA} (Junction-to-Ambient)			50		$^\circ\text{C}/\text{W}$

NOTES: (1) Power dissipation, Internal: 25W Max.

* Guaranteed - not tested 100%.

Part Number Designator

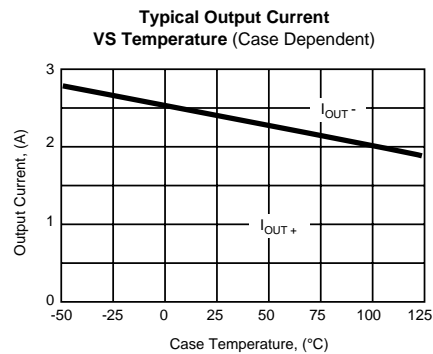
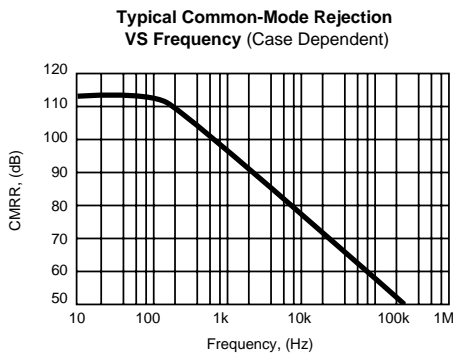
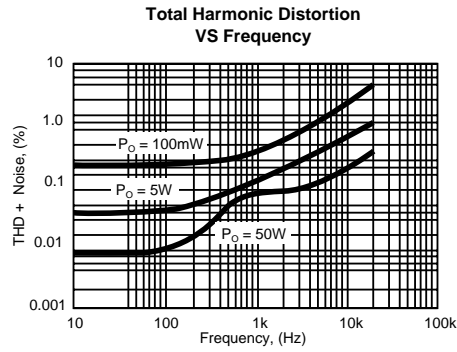
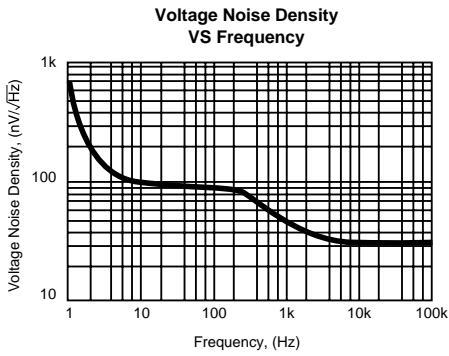
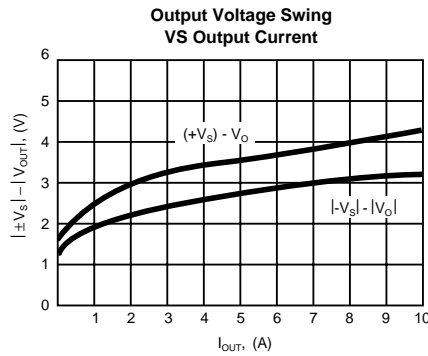
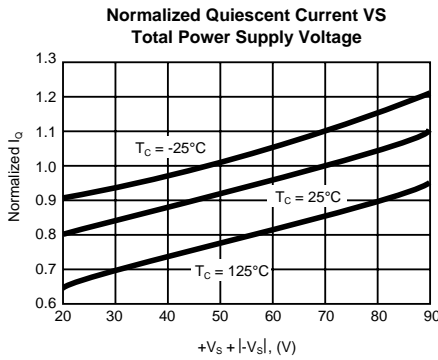
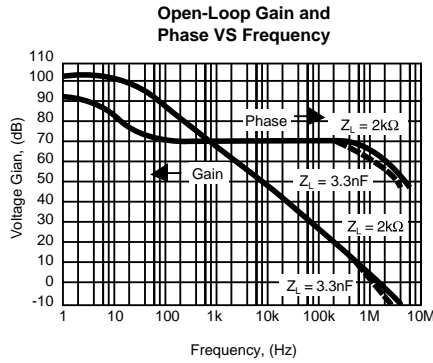
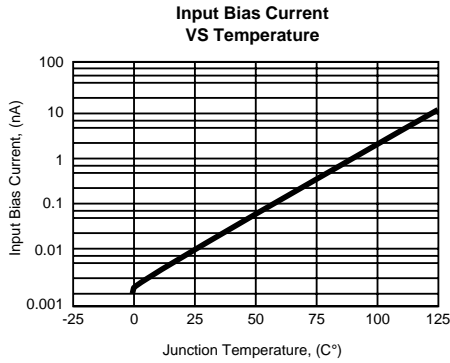
Standard Military Drawing Number
5962-94520 01XX

Omnirel Part Number
OMA541SFB

Package
F-14L

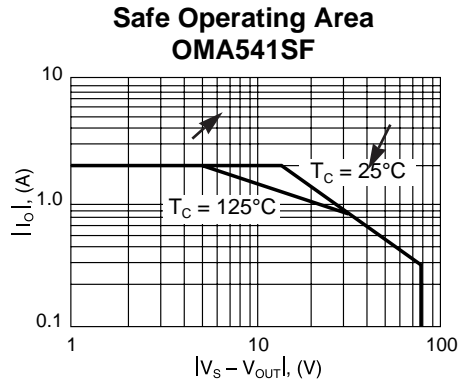
TYPICAL PERFORMANCE CURVES

$T_A = +25^\circ\text{C}$, $V_S = \pm V_{DC}$ unless otherwise noted

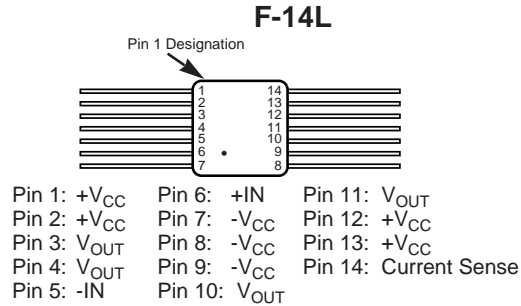


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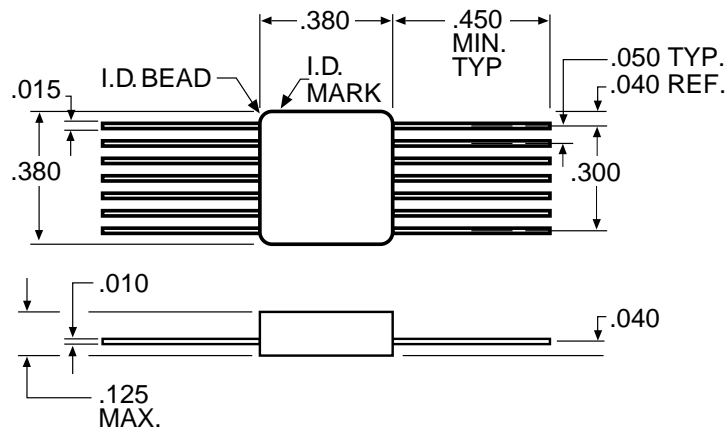
OMA541SFB



PIN CONNECTION



MECHANICAL OUTLINE



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