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Category Amplifiers & Linear

ICs

# Amplifiers & Linear

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## Operational Amplifiers & Comparators

Operational Amplifiers

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### Operational Amplifiers

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## Operational Amplifiers

### Standard

#### Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
BA2904/ BA2904S	2	3 to 36	0.5	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125/ -40 to +105	SOP8	F
															SSOP-B8	FV
															MSOP8	FVM
BA2904Y	2	3 to 36	0.5	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP8	F-LB
BA2902/ BA2902S	4	3 to 36	0.7	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125/ -40 to +105	SOP14	F
															SSOP-B14	FV
BA2902Y	4	3 to 36	0.7	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP14	F-LB
BA3404	2	4 to 36	2.0	2.0	70	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}$ to $V_{CC}-2.0$	100	90	94	1.2	1.2	-40 to +85	SOP8	F
															SOP-J8	FJ
															MSOP8	FVM
LM2902	4	3 to 32	1.0	1.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.3	0.8	-40 to +125	SOP14	F
															SOP-J14	FJ
															SSOP-B14	FV
															TSSOP-B14J	FVJ
LM2904	2	3 to 32	0.6	1.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.3	0.8	-40 to +125	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
															TSSOP-B8	FVT
LM324	4	3 to 32	1.0	1.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}+0.01$ to $V_{CC}-1.5$	100	80	100	0.3	0.8	-40 to +85	SOP14	F
															SOP-J14	FJ
															SSOP-B14	FV
															TSSOP-B14J	FVJ
LM358	2	3 to 32	0.6	1.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}+0.01$ to $V_{CC}-1.5$	100	80	100	0.3	0.8	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
															TSSOP-B8	FVT

#### Automotive Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA2904Y	2	3 to 36	0.5	2.0 (Max: 3.5)	20 (Max: 60)	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP8	F-C	FSs	YES
															SSOP-B8	FV-C	FSs	YES
															MSOP8	FVM-C	FSs	YES
BA2902Y	4	3 to 36	0.7	2.0 (Max: 3.8)	20 (Max: 60)	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP14	F-C	FSs	YES
															SSOP-B14	FV-C	FSs	YES
BA2904Y	2	3 to 36	0.5	2.0 (Max: 7.0)	20 (Max: 250)	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP8	F-M	FSs	YES
															SSOP-B8	FV-M	FSs	YES
															MSOP8	FVM-M	FSs	YES
BA2902Y	4	3 to 36	0.7	2.0 (Max: 7.0)	20 (Max: 250)	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP14	F-M	FSs	YES
															SSOP-B14	FV-M	FSs	YES

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\*1 For more information about "ComfySIL™ Functional Safety", please refer to the of the cover.

## Automotive Excellent EMI Characteristics Ground Sense Operational Amplifiers (EMARMOUR™ series)

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
<b>New</b> LM2904EY	2	3 to 32	0.6	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +150	SOP8	F-C	FSs	YES
															MSOP8	FVM-C	FSs	YES
BA82904Y	2	3 to 36	0.5	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP8	F-C	FSs	YES
															MSOP8	FVM-C	FSs	YES
BA82902Y	4	3 to 36	0.7	2.0	20	30	$V_{EE}$ to $V_{CC}-1.5$	$V_{EE}$ to $V_{CC}-1.5$	100	80	100	0.2	0.5	-40 to +125	SOP14	F-C	FSs	YES
															SOP-J14	FJ-C	FSs	YES
															SSOP-B14	FV-C	FSs	YES
															TSSOP-B14J	FWJ-C	FSs	YES

## Automotive Excellent EMI Characteristics Input-Output Rail-to-Rail Operational Amplifiers (EMARMOUR™ series)

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BD87581Y	1	4 to 14	2.3	1	0.001	3.5	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.03$ to $V_{DD}-0.05$	110	60	80	3.5	4	-40 to +125	SSOP5	G-C	FSs	YES
BD87582Y	2	4 to 14	5	1	0.001	3.5	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.03$ to $V_{DD}-0.05$	110	60	80	3.5	4	-40 to +125	MSOP8	FVM-C	FSs	YES
<b>New</b> BD87584Y	4	4 to 14	10	1	0.001	3.5	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.03$ to $V_{DD}-0.05$	110	60	80	3.5	4	-40 to +125	SSOP-B14	FV-C	FSs	YES

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The EMARMOUR™ series achieves the Industry-leading noise immunity. EMARMOUR™ is a trademark or a registered trademark of ROHM Co., Ltd.

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## High Speed

### Input-Output Rail-to-Rail Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (μA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
BU7261/ BU7261S	1	1.8 to 5.5	250	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.1	2.0	-40 to +85/ -40 to +105	SSOP5	G
BU7262/ BU7262S	2	1.8 to 5.5	550	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.1	2.0	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM
BU7264/ BU7264S	4	1.8 to 5.5	1,100	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.1	2.0	-40 to +85/ -40 to +105	SOP14	F
															SSOP-B14	FV
BU7291/ BU7291S	1	2.4 to 5.5	470	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	3.0	2.8	-40 to +85/ -40 to +105	SSOP5	G
BU7294/ BU7294S	4	2.4 to 5.5	2,000	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	3.0	2.8	-40 to +85/ -40 to +105	SOP14	F
															SSOP-B14	FV
BU7295/ BU7295S	1	1.8 to 5.5	150	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.0	1.0	-40 to +85/ -40 to +105	HVSOF5	HFV
BU7255/ BU7255S	1	2.4 to 5.5	540	1.0	0.001	4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	3.4	4.0	-40 to +85/ -40 to +105	HVSOF5	HFV
BD7561/ BD7561S	1	5.0 to 14.5	440	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.9	1.0	-40 to +85/ -40 to +105	SSOP5	G
BD7562/ BD7562S	2	5.0 to 14.5	900	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.9	1.0	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM

### Automotive Input-Output Rail-to-Rail Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (μA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
<b>New</b> BU7264Y	4	1.8 to 5.5	1,100	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.1	2.0	-40 to +125	SSOP-B14	FV

### Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
BA3472	2	3 to 36	4.0	1.0	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	10.0	4.0	-40 to +85	SOP8	F
															SSOP-B8	FV
															SOP-J8	FJ
															MSOP8	FVM
BA3472R																
BA3472Y																
BA3474	4	3 to 36	8.0	1.0	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	10.0	4.0	-40 to +85	SOP14	F
															SSOP-B14	FV
															TSSOP-B14J	FWJ
															SSOP-B14	FV
BA3474R																
BU7461/ BU7461S	1	1.7 to 5.5	0.15	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.0	1.0	-40 to +85/ -40 to +105	SSOP5	G
BU7462/ BU7462S	2	1.7 to 5.5	0.3	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.0	1.0	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM
BU7464/ BU7464S	4	1.7 to 5.5	0.6	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	1.0	1.0	-40 to +85/ -40 to +105	SOP14	F
BU7465/ BU7465S	1	1.7 to 5.5	0.12	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	1.0	1.2	-40 to +85/ -40 to +105	HVSOF5	HFV
BU7481/ BU7481S	1	1.8 to 5.5	0.42	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	3.2	2.8	-40 to +85/ -40 to +105	SSOP5	G
BU7485/ BU7485S	1	3.0 to 5.5	1.5	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.4$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	10.0	10.0	-40 to +85/ -40 to +105	SSOP5	G
BU7486/ BU7486S	2	3.0 to 5.5	3.0	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.4$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	10.0	10.0	-40 to +85/ -40 to +105	SOP8	F
															SSOP-B8	FV
BU7487/ BU7487S	4	3.0 to 5.5	6.0	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.4$	$V_{SS}+0.1$ to $V_{DD}-0.1$	105	60	80	10.0	10.0	-40 to +85/ -40 to +105	SSOP-B14	FV
BU7495/ BU7495S	1	1.8 to 5.5	0.65	1.0	0.001	7	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	5.0	4.0	-40 to +85/ -40 to +105	HVSOF5	HFV

## High Speed

### Automotive Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA3472Y/ BA3472W	2	3 to 36	4.0	1.0 (Max: 10.0)/ 1.0 (Max: 7.5)	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	10	4.0	-40 to +125	SOP8	F-C	FSs	YES
															SSOP-B8	FV-C		YES
															MSOP8	FVM-C		YES
BA3474Y/ BA3474W	4	3 to 36	8.0	1.0 (Max: 10.0)/ 1.0 (Max: 7.5)	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	10	4.0	-40 to +125	SSOP-B14	FV-C	-/FSs	YES
															SSOP-B14			YES

### Automotive Excellent EMI Characteristics Ground Sense Operational Amplifiers (EMARMOUR™ series)

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA83472Y	2	3 to 36	4.3	1	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	8.5	3	-40 to +125	SOP8	F-C	FSs	YES
New BA83474Y	4	3 to 36	8.6	1	100	30	$V_{EE}$ to $V_{CC}-2.0$	$V_{EE}+0.3$ to $V_{CC}-1.0$	100	97	97	8.5	3	-40 to +125	MSOP8	FVM-C	FSs	YES
															SSOP-B14	FV-C		YES

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## Low Power Consumption

### Input-Output Rail-to-Rail Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (μA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
BU7205/ BU7205S	1	1.8 to 5.5	0.4	1.0	0.001	1.2	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.0025	0.0025	-40 to +85/ -40 to +105	HVSOF5	HFV
BU7241/ BU7241S	1	1.8 to 5.5	70	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.4	0.9	-40 to +85/ -40 to +105	SSOP5	G
BU7242/ BU7242S	2	1.8 to 5.5	180	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.4	0.9	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM
															VSON008X2030	NUX
BU7244/ BU7244S	4	1.8 to 5.5	360	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.4	0.9	-40 to +85/ -40 to +105	SOP14	F
															SSOP-B14	FV
BU7245/ BU7245S	1	1.8 to 5.5	5	1.0	0.001	4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.035	0.09	-40 to +85/ -40 to +105	HVSOF5	HFV
BU7265/ BU7265S	1	1.8 to 5.5	0.35	1.0	0.001	2.4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.0024	0.004	-40 to +85/ -40 to +105	SSOP5	G
BU7266/ BU7266S	2	1.8 to 5.5	0.7	1.0	0.001	2.4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.0024	0.004	-40 to +85/ -40 to +105	SOP8	F
															SSOP-B8	FV
															MSOP8	FVM
BU7271/ BU7271S	1	1.8 to 5.5	8.6	1.0	0.001	4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	0.05	0.09	-40 to +85/ -40 to +105	SSOP5	G
BU7275/ BU7275S	1	1.8 to 5.5	40	1.0	0.001	8	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	HVSOF5	HFV
BD12730	1	1.8 to 5.5	320	1.0	50	5	GND to $V+$	0.1 to $V+ -0.1$	85	70	85	0.4	1.0	-40 to +85	SSOP5	G
BD12732	2	1.8 to 5.5	580	1.0	50	5	GND to $V+$	0.1 to $V+ -0.1$	85	70	85	0.4	1.0	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
															TSSOP-B8	FVT
BD12734	4	1.8 to 5.5	1,200	1.0	50	5	GND to $V+$	0.1 to $V+ -0.1$	85	70	85	0.4	1.0	-40 to +85	SOP14	F
															SOP-J14	FJ
															SSOP-B14	FV
															TSSOP-B14J	FVJ
BD7541/ BD7541S	1	5.0 to 14.5	180	1.0	0.001	4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	SSOP5	G
BD7542/ BD7542S	2	5.0 to 14.5	400	1.0	0.001	4	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM
LMR931	1	1.8 to 5.0	80	1.0	5	28	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.04$ to $V_{DD}-0.05$	100	94	85	0.4	1.4	-40 to +85	SSOP5	G
LMR932	2	1.8 to 5.0	135	1.0	5	28	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.04$ to $V_{DD}-0.05$	100	94	85	0.4	1.4	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
															TSSOP-B8	FVT
LMR934	4	1.8 to 5.0	250	1.0	5	28	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.04$ to $V_{DD}-0.05$	100	94	85	0.4	1.4	-40 to +85	SOP14	F
															SOP-J14	FJ
															SSOP-B14	FV
															TSSOP-B14J	FVJ
LMR981	1	1.8 to 5.0	80	1.0	5	28	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.04$ to $V_{DD}-0.05$	100	94	85	0.4	1.4	-40 to +85	SSOP6	G
LMR982	2	1.8 to 5.0	135	1.0	5	28	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.04$ to $V_{DD}-0.05$	100	94	85	0.4	1.4	-40 to +85	MSOP10	FVM

Ground Sense Operational Amplifiers																
Part No.	ch	Supply Voltage (V)	Circuit Current (μA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix
BU7411/ BU7411S	1	1.6 to 5.5	0.35	1.0	0.001	2.4	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.0024	0.004	-40 to +85/ -40 to +105	SSOP5	G
BU7421/ BU7421S	1	1.7 to 5.5	8.5	1.0	0.001	4	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	0.05	0.09	-40 to +85/ -40 to +105	SSOP5	G
BU7441/ BU7441S	1	1.7 to 5.5	50	1.0	0.001	6	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	SSOP5	G
BU7442/ BU7442S	2	1.7 to 5.5	100	1.0	0.001	6	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	SOP8	F
															MSOP8	FVM
															VSON008X2030	NUX
BU7444/ BU7444S	4	1.7 to 5.5	200	1.0	0.001	6	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	95	60	80	0.3	0.6	-40 to +85/ -40 to +105	SOP14	F
BU7445/ BU7445S	1	1.7 to 5.5	40	1.0	0.001	8	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	0.25	0.4	-40 to +85/ -40 to +105	HVSOF5	HFV
BU7475/ BU7475S	1	1.7 to 5.5	9	1.0	0.001	7	$V_{SS}$ to $V_{DD}-1.2$	$V_{SS}+0.1$ to $V_{DD}-0.1$	100	60	80	0.05	0.1	-40 to +85/ -40 to +105	HVSOF5	HFV
BD1321	1	2.7 to 5.5	130	0.1	15	70	$V_{EE}$ to $V_{CC}-0.8$	$V_{EE}+0.08$ to $V_{CC}-0.04$	110	90	90	1.0	3.0	-40 to +85	SSOP5	G
LMR321	1	2.7 to 5.5	130	0.1	15	70	$V_{EE}$ to $V_{CC}-0.8$	$V_{EE}+0.08$ to $V_{CC}-0.04$	110	90	90	1.0	3.0	-40 to +85	SSOP5	G
LMR324	4	2.7 to 5.5	410	1.0	15	70	$V_{EE}$ to $V_{CC}-0.8$	$V_{EE}+0.08$ to $V_{CC}-0.04$	110	90	90	1.0	3.0	-40 to +85	SOP14	F
															SOP-J14	FJ
															SSOP-B14	FV
															TSSOP-B14J	FVJ
LMR341	1	2.7 to 5.5	100	0.25	0.001	24	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.06$ to $V_{DD}-0.06$	103	80	85	1.0	2.0	-40 to +85	SSOP6	G
LMR342	2	2.7 to 5.5	200	0.25	0.001	24	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.06$ to $V_{DD}-0.06$	103	80	85	1.0	2.0	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
															TSSOP-B8	FVT
LMR344	4	2.7 to 5.5	400	0.25	0.001	24	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.06$ to $V_{DD}-0.06$	103	80	85	1.0	2.0	-40 to +85	SOP14	F
LMR358	2	2.7 to 5.5	210	0.1	15	70	$V_{EE}$ to $V_{CC}-0.8$	$V_{EE}+0.08$ to $V_{CC}-0.04$	110	90	90	1.0	3.0	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
MSOP8	FVM															
	TSSOP-B8	FVT														
LMR821	1	2.5 to 5.5	280	1.0	30	16	$V_{SS}$ to $V_{DD}-0.9$	$V_{SS}+0.12$ to $V_{DD}-0.1$	100	85	85	2.0	5.0	-40 to +85	SSOP5	G
LMR822	2	2.5 to 5.5	560	1.0	30	16	$V_{SS}$ to $V_{DD}-0.9$	$V_{SS}+0.12$ to $V_{DD}-0.1$	100	85	85	2.0	5.0	-40 to +85	SOP8	F
															SOP-J8	FJ
															SSOP-B8	FV
															TSSOP-B8J	FVJ
															MSOP8	FVM
TSSOP-B8	FVT															
LMR824	4	2.5 to 5.5	1,120	1.0	30	16	$V_{SS}$ to $V_{DD}-0.9$	$V_{SS}+0.12$ to $V_{DD}-0.1$	100	85	85	2.0	5.0	-40 to +85	SOP14	F
															SOP-J14	FJ
															TSSOP-B14J	FVJ
TLR341	1	1.8 to 5.5	70	0.3	0.001	8	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.055$ to $V_{DD}-0.05$	100	90	95	1.2	2.2	-40 to +85	SSOP6	G
TLR342	2	1.8 to 5.5	150	0.3	0.001	8	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.055$ to $V_{DD}-0.05$	100	85	95	1.0	1.2	-40 to +85	SOP8	F
															SOP-J8	FJ
															TSSOP-B8J	FVJ
TSSOP-B8	FVT															
TLR344	4	1.8 to 5.5	300	0.3	0.001	8	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.055$ to $V_{DD}-0.05$	100	90	95	1.2	2.2	-40 to +85	SOP14	F
															SOP-J14	FJ
															TSSOP-B14J	FVJ

Automotive Input-Output Rail-to-Rail Operational Amplifiers																		
Part No.	ch	Supply Voltage (V)	Circuit Current (μA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/μs)	Gain Bandwidth Product (MHz)	Operating Temperature (°C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BU7241Y	1	1.8 to 5.5	70	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.05$ to $V_{DD}-0.05$	100	70	80	0.4	1.0	-40 to +125	SSOP5	G-C	FSs	YES
BU7242Y	2	1.8 to 5.5	180	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.05$ to $V_{DD}-0.05$	100	70	80	0.4	1.0	-40 to +125	MSOP8	FVM-C	FSs	YES
BU7244Y	4	1.8 to 5.5	360	1.0	0.001	10	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.05$ to $V_{DD}-0.05$	100	70	80	0.4	1.0	-40 to +125	SSOP-B14	FV-C	FSs	YES

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 \*1 For more information about "ComfySIL™ Functional Safety", please refer to the of the cover.

## Low Noise

Output Rail-to-Rail Operational Amplifiers																	
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Input Referred Noise Voltage ( $\mu$ Vrms)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	
BA4510	2	$\pm 1$ to $\pm 3.5$	5.0	1.0	80	0.7	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+0.1$ to $V_{CC}-0.1$	90	80	80	5.0	10.0	-20 to +75	SOP8	F	
															SSOP-B8	FV	
															-40 to +75	MSOP8	FVM
																TSSOP-B8	FVT
BA2107	1	$\pm 1$ to $\pm 7$	1.8	1.0	150	0.9	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+0.1$ to $V_{CC}-0.1$	80	74	80	4.0	12.0	-40 to +85	SSOP5	G	
BA2115	2	$\pm 1$ to $\pm 7$	3.5	1.0	150	0.9	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+0.1$ to $V_{CC}-0.1$	80	74	80	4.0	12.0	-40 to +85	SOP8	F	
															SOP-J8	FJ	
															MSOP8	FVM	

Automotive Operational Amplifiers																		
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Input Referred Noise Voltage ( $\mu$ Vrms)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA4558Y	2	$\pm 4$ to $\pm 15$	3.0	0.5	60	1.8	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	1.0	2.0	-40 to +105	SOP8	F-M	FSs	YES
															SSOP-B8	FV-M	FSs	YES
															MSOP8	FVM-M	FSs	YES
BA4560Y	2	$\pm 4$ to $\pm 15$	3.0	0.5	50	1.0	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	4.0	4.0	-40 to +105	SOP8	F-M	FSs	YES
															SSOP-B8	FV-M	FSs	YES
															MSOP8	FVM-M	FSs	YES
BA4580Y	2	$\pm 2$ to $\pm 16$	6.0	0.3	100	0.8	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	110	110	5.0	10.0	-40 to +105	SOP8	F-M	FSs	YES
															MSOP8	FVM-M	FSs	YES
BA4584Y	4	$\pm 2$ to $\pm 16$	11.0	0.3	100	0.8	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	110	110	5.0	10.0	-40 to +105	SSOP-B14	FV-M	FSs	YES

Dual Supply Voltage Operational Amplifiers																		
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Input Referred Noise Voltage ( $\mu$ Vrms)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix		
BA4558/ BA4558R	2	$\pm 4$ to $\pm 15$	3.0	0.5	60	1.8	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	1.0	2.0	-40 to +85/ -40 to +105	SOP8	F		
															SOP-J8	FJ		
															SSOP-B8	FV		
															MSOP8	FVM		
															TSSOP-B8	FVT		
BA4560/ BA4560R	2	$\pm 4$ to $\pm 15$	4.0	0.5	50	1.0	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	4.0	10.0	-40 to +85/ -40 to +105	SOP8	F		
															SOP-J8	FJ		
															SSOP-B8	FV		
															MSOP8	FVM		
															TSSOP-B8	FVT		
BA4564R	4	$\pm 4$ to $\pm 15$	6.0	0.5	50	1.0	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	4.0	4.0	-40 to +105	SSOP-B14	FV		
BA15218	2	$\pm 2$ to $\pm 16$	5.0	0.5	50	1.0	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+2.0$ to $V_{CC}-2.0$	110	90	90	3.0	10.0	-40 to +85	SOP8	F		
BA14741	4	$\pm 2$ to $\pm 18$	3.0	1.0	60	2.0	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+2.5$ to $V_{CC}-2.5$	100	100	100	1.0	2.0	-40 to +85	SOP14	F		
															SOP-J14	FJ		
BA15532	2	$\pm 3$ to $\pm 20$	8.0	0.5	200	1.5	$V_{EE}+2.0$ to $V_{CC}-2.0$	$V_{EE}+2.0$ to $V_{CC}-2.0$	94	100	100	8.0	20.0	-20 to +75	SOP8	F		
BA4580R	2	$\pm 2$ to $\pm 16$	6.0	0.3	100	0.8	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	110	110	5.0	5.0	-40 to +105	SOP8	F		
															SOP-J8	FJ		
															MSOP8	FVM		
															TSSOP-B8	FVT		
BA4584	4	$\pm 2$ to $\pm 16$	12.0	0.3	100	0.8	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	110	110	5.0	5.0	-40 to +85	SSOP-B14	FV		
BA4584R	4	$\pm 2$ to $\pm 9.5$	11.0	0.3	100	0.8	$V_{EE}+1.5$ to $V_{CC}-1.5$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	110	110	5.0	5.0	-40 to +105	SOP14	F		
															SSOP-B14	FV		
LM4559	2	$\pm 4$ to $\pm 18$	3.3	0.5	40	0.7	$V_{EE}+2.0$ to $V_{CC}-2.0$	$V_{EE}+1.5$ to $V_{CC}-1.5$	110	100	100	3.5	4.0	-40 to +85	SOP8	F		
															SOP-J8	FJ		
															SSOP-B8	FV		
															TSSOP-B8	FVT		
															MSOP8	FVM		
																TSSOP-B8J	FVJ	
LM4565	2	$\pm 4$ to $\pm 18$	4.5	0.5	70	0.6	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	100	100	5.0	10.0	-40 to +85	SOP8	F		
															SOP-J8	FJ		
															SSOP-B8	FV		
															TSSOP-B8	FVT		
															MSOP8	FVM		
																	TSSOP-B8J	FVJ

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## Low Offset Voltage

Dual Supply Voltage Operational Amplifier																
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
BA4564W	4	$\pm 4$ to $\pm 15$	6.0	0.5	50	25	$V_{EE}+1.0$ to $V_{CC}-1.0$	$V_{EE}+1.0$ to $V_{CC}-1.0$	100	90	90	4.0	4.0	-40 to +105	SSOP-B14	FV
Input-Output Rail-to-Rail Operational Amplifier																
BD5291	1	1.7 to 5.5	0.65	0.1	0.001	6	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.1$ to $V_{DD}-0.1$	110	90	90	2.5	3.2	-40 to +85	SSOP5	G
															VSOF5	FVE



## High Performance

### Ultra Low Noise Ground Sense Operational Amplifier

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage ( $\mu$ V)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Input Referred Noise Voltage (nV/ $\sqrt$ Hz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
LMR1801	1	2.2 to 5.5	0.95	5 (Max: 900)	0.0005	3.5	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.05$ to $V_{DD}-0.05$	140	100	125	2.5	6.0	5.0	-40 to +125	SSOP5	G-LB
																HVSOP5	HFV-LB
LMR1802	1	2.5 to 5.5	1.1	5 (Max: 450)	0.0005	3.5	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.05$ to $V_{DD}-0.05$	140	105	125	1.1	3.0	2.9	-40 to +125	SSOP5	G-LB
LMR1803	1	2.2 to 5.5	1.0	5 (Max: 150)	0.0005	3.5	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.05$ to $V_{DD}-0.05$	140	100	110	2.5	6.0	5.0	-40 to +125	SSOP5	G-LB

### High Speed Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
LMR1701	1	2.7 to 5.5	9.6	1	0.0026	200	$V_{SS}$ to $V_{DD}-0.9$	$V_{SS}+0.1$ to $V_{DD}-0.1$	120	80	86	80	150	-40 to +125	SSOP6	G-LB

### Excellent EMI Characteristics High Speed Ground Sense Operational Amplifiers (EMARMOUR™ series)

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
<b>Nano</b> BD77501	1	7 to 15	1.3	4	0.001	7.5	$V_{SS}$ to $V_{DD}-2.0$	$V_{SS}+0.25$ to $V_{DD}-0.25$	75	70	70	10	8	-40 to +85	SSOP5	G
<b>Nano</b> BD77502	2	7 to 15	2.6	4	0.001	7.5	$V_{SS}$ to $V_{DD}-2.0$	$V_{SS}+0.25$ to $V_{DD}-0.25$	75	70	70	10	8	-40 to +85	MSOP8	FVM
<b>Nano</b> BD77504	4	7 to 15	5.2	4	0.001	7.5	$V_{SS}$ to $V_{DD}-2.0$	$V_{SS}+0.25$ to $V_{DD}-0.25$	75	70	70	10	8	-40 to +85	SSOP-B14	FV

### Automotive Ultra Low Noise Ground Sense Operational Amplifier

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage ( $\mu$ V)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Input Referred Noise Voltage (nV/ $\sqrt$ Hz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
LMR1801Y	1	2.2 to 5.5	0.95	5 (Max: 950)	0.0005	3.5	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.05$ to $V_{DD}-0.05$	140	100	110	2.5	6.0	5	-40 to +125	SSOP5	G-C	FSs	YES
LMR1802Y	1	2.5 to 5.5	1.1	5 (Max: 450)	0.0005	3.5	$V_{SS}$ to $V_{DD}-1.0$	$V_{SS}+0.05$ to $V_{DD}-0.05$	140	105	125	1.1	4.4	2.9	-40 to +125	SSOP5	G-C	FSs	YES

### Automotive High Precision & Input/Output Rail-to-Rail CMOS Operational Amplifier

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage ( $\mu$ V)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
<b>New</b> TLR376Y	1	2.5 to 5.5	0.645	1.7 (Max: 550)	0.0005	50	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.015$ to $V_{DD}-0.025$	137	100	95	2	4	-40 to +125	SSOP5	G-C	FSs	YES
<b>New</b> TLR2376Y	2	2.5 to 5.5	1.245	1.7 (Max: 550)	0.0005	50	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.015$ to $V_{DD}-0.025$	137	100	95	2	4	-40 to +125	MSOP8	FVM-C	FSs	YES
<b>New</b> TLR377Y	1	2.5 to 5.5	0.645	1.7 (Max: 1300)	0.0005	50	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.015$ to $V_{DD}-0.025$	137	100	95	2	4	-40 to +125	SSOP5	G-C	FSs	YES
<b>New</b> TLR2377Y	2	2.5 to 5.5	1.245	1.7 (Max: 1300)	0.0005	50	$V_{SS}$ to $V_{DD}$	$V_{SS}+0.015$ to $V_{DD}-0.025$	137	100	95	2	4	-40 to +125	MSOP8	FVM-C	FSs	YES

### Automotive High Speed Ground Sense Operational Amplifiers

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Output Voltage (V)	Voltage Gain (dB)	CMRR (dB)	PSRR (dB)	Slew Rate (V/ $\mu$ s)	Gain Bandwidth Product (MHz)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	Automotive Grade AEC-Q100
LMR1701Y	1	2.7 to 5.5	9.6	1	0.0026	200	$V_{SS}$ to $V_{DD}-0.9$	$V_{SS}+0.1$ to $V_{DD}-0.1$	120	80	86	80	150	-40 to +125	SSOP6	G-C	YES

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\*1 For more information about "ComfySIL™ Functional Safety", please refer to the of the cover.

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## Comparators

### Standard

#### Open-Collector Comparators

Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
BA2901/BA2901S	4	2 to 36	0.8	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125/ -40 to +105	SOP14	F
											SSOP-B14	FV
BA2901Y	4	2 to 36	0.8	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP14	F-LB
											SOP8	F
BA2903/BA2903S	2	2 to 36	0.6	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125/ -40 to +105	SSOP-B8	FV
											MSOP8	FVM
BA2903Y	2	2 to 36	0.6	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP8	F-LB
BA8391	1	2 to 36	0.3	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +85	SSOP5	G
LM2901	4	3 to 32	1.2	1	50	16	$V_{EE}$ to $V_{CC}-1.5$	120	1.0	-40 to +125	SOP14	F
											SOP-J14	FJ
											SSOP-B14	FV
											TSSOP-B14J	FVJ
LM2903	2	3 to 32	0.6	1	50	16	$V_{EE}$ to $V_{CC}-1.5$	120	1.0	-40 to +125	SOP8	F
											SOP-J8	FJ
											SSOP-B8	FV
											TSSOP-B8J	FVJ
											MSOP8	FVM
TSSOP-B8	FVT											
LM339	4	3 to 32	1.2	1	50	16	$V_{EE}$ to $V_{CC}-1.5$	120	1.0	-40 to +85	SOP14	F
											SOP-J14	FJ
											SSOP-B14	FV
LM393	2	3 to 32	0.6	1	50	16	$V_{EE}$ to $V_{CC}-1.5$	120	1.0	-40 to +85	TSSOP-B14J	FVJ
											SOP8	F
											SOP-J8	FJ
											SSOP-B8	FV
											TSSOP-B8J	FVJ
MSOP8	FVM											
TSSOP-B8	FVT											

## Standard

Automotive Open-Collector Comparators														
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA2903Y	2	2 to 36	0.6	2 (Max: 4)	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP8	F-C	FSs	YES
											SSOP-B8	FV-C	FSs	YES
											MSOP8	FVM-C	FSs	YES
BA2901Y	4	2 to 36	0.8	2 (Max: 4)	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP14	F-C	FSs	YES
											SSOP-B14	FV-C	FSs	YES
BA2903Y	2	2 to 36	0.6	2 (Max: 7)	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP8	F-M	FSs	YES
											SSOP-B8	FV-M	FSs	YES
											MSOP8	FVM-M	FSs	YES
BA2901Y	4	2 to 36	0.8	2 (Max: 7)	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP14	F-M	FSs	YES
											SSOP-B14	FV-M	FSs	YES
Automotive Excellent EMI Characteristics Open-Collector Comparators (EMARMOUR™ series)														
Part No.	ch	Supply Voltage (V)	Circuit Current (mA)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BA82903Y	2	2 to 36	0.6	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP8	F-C	FSs	YES
											MSOP8	FVM-C	FSs	YES
BA82901Y	4	2 to 36	0.8	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	100	1.3	-40 to +125	SOP14	F-C	FSs	YES
											SSOP-B14	FV-C	FSs	YES
<b>New</b> LM2901EY	4	3 to 32	1.2	2	50	16	$V_{EE}$ to $V_{CC}-1.5$	120	1.3	-40 to +150	SSOP-B14	FV-C	FSs	YES
<b>New</b> LM2903EY	2		0.6	2							SOP-J8	FJ-C	FSs	YES

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## High Speed

Push-Pull Comparators												
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
BU7251/ BU7251S	1	1.8 to 5.5	15	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	0.55	-40 to +85/ -40 to +105	SSOP5	G
BU7252/ BU7252S	2	1.8 to 5.5	35	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	0.55	-40 to +85/ -40 to +105	SOP8	F
											MSOP8	FVM
BU5265/ BU5265S	1	1.8 to 5.5	22	1	0.001	3.5	$V_{SS}$ to $V_{DD}$	90	0.5	-40 to +85/ -40 to +105	HVSOF5	HFV
Open-Drain Comparators												
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix
BU7250/ BU7250S	1	1.8 to 5.5	15	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	0.75	-40 to +85/ -40 to +105	SSOP5	G
BU7253/ BU7253S	2	1.8 to 5.5	35	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	0.75	-40 to +85/ -40 to +105	SOP8	F

## Low Power Consumption

Push-Pull Comparators														
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix		
BU7231/ BU7231S	1	1.8 to 5.5	5	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	1.7	-40 to +85/ -40 to +105	SSOP5	G		
BU7232/ BU7232S	2	1.8 to 5.5	10	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	1.7	-40 to +85/ -40 to +105	SOP8	F		
											MSOP8	FVM		
BU5255/ BU5255S	1	1.8 to 5.5	6.5	1	0.001	3.5	$V_{SS}$ to $V_{DD}$	90	1.6	-40 to +85/ -40 to +105	HVSOF5	HFV		
Automotive Push-Pull Comparator														
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BU7232Y	2	1.8 to 5.5	10	1	0.001	7	$V_{SS}$ to $V_{DD}$	100	1.7	-40 to +125	MSOP8	FVM-C	FSs	YES
Open-Drain Comparators														
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix		
BU7230/ BU7230S	1	1.8 to 5.5	5	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	1.8	-40 to +85/ -40 to +105	SSOP5	G		
BU7233/ BU7233S	2	1.8 to 5.5	10	1	0.001	6	$V_{SS}$ to $V_{DD}$	90	1.8	-40 to +85/ -40 to +105	SOP8	F		
Automotive Open-Drain Comparator														
Part No.	ch	Supply Voltage (V)	Circuit Current ( $\mu$ A)	Input Offset Voltage (mV)	Input Bias Current (nA)	Output Current (mA)	Input Voltage (V)	Voltage Gain (dB)	Response Time ( $\mu$ s)	Operating Temperature ( $^{\circ}$ C)	Package	Part No. Suffix	ComfySIL™ Functional Safety*1	Automotive Grade AEC-Q100
BU7233Y	2	1.8 to 5.5	10	1	0.001	7	$V_{SS}$ to $V_{DD}$	100	1.8	-40 to +125	SOP8	F-C	FSs	YES

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