



MC4580

LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

The UTC **MC4580** is the dual operational amplifier, specially designed for improving the tone control, which is most suitable for the audio application.

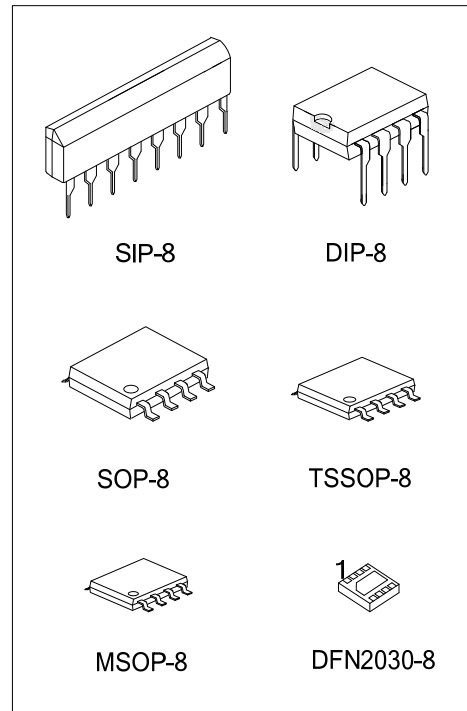
Featuring noiseless, higher gain bandwidth, high output current and low distortion ratio, and it is most suitable not only for acoustic electronic parts of audio pre-amp and active filter, but also for the industrial measurement tools. It is also suitable for the head phone amp at higher output current, and further more, it can be applied for the handy type set operational amplifier of general purpose in application of low voltage single supply type which is properly biased of the input low voltage source.

FEATURES

- *Operating voltage (±2V ~ ±18V)
- *Low input noise voltage (0.8μVrms typ.)
- *Wide gain bandwidth product (15MHz typ.)
- *Low distortion (0.0005% typ.)
- *Slew rate (5V/μs typ.)
- *Bipolar technology

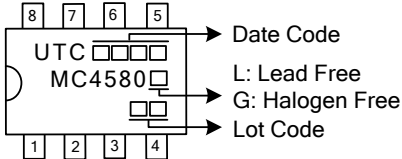
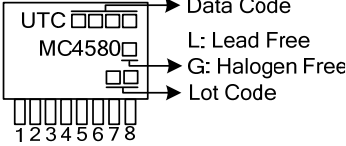
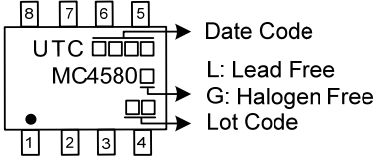
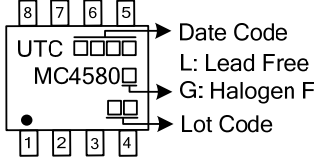
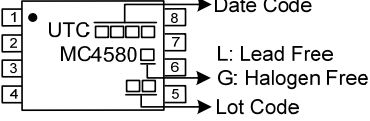
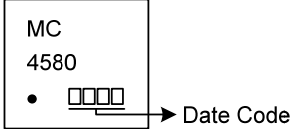
ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
MC4580L-D08-T	MC4580G-D08-T	DIP-8	Tube
MC4580L-G08-T	MC4580G-G08-T	SIP-8	Tube
MC4580L-S08-R	MC4580G-S08-R	SOP-8	Tape Reel
MC4580L-P08-R	MC4580G-P08-R	TSSOP-8	Tape Reel
MC4580L-SM1-R	MC4580G-SM1-R	MSOP-8	Tape Reel
MC4580L-K08-2030-R	MC4580G-K08-2030-R	DFN2030-8	Tape Reel

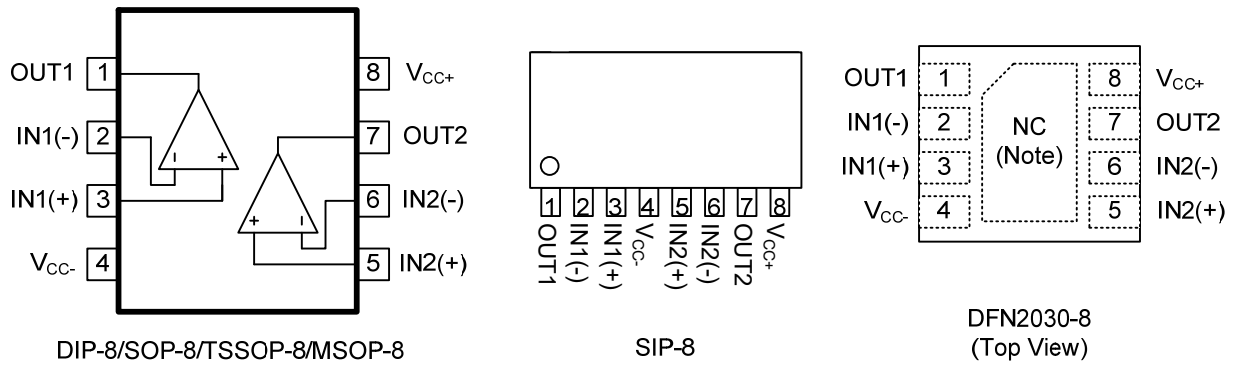


<p>MC4580G-D08-T</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel (2) D08: DIP-8, G08: SIP-8, P08: TSSOP-8, S08: SOP-8, SM1: MSOP-8, K08-2030: DFN2030-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

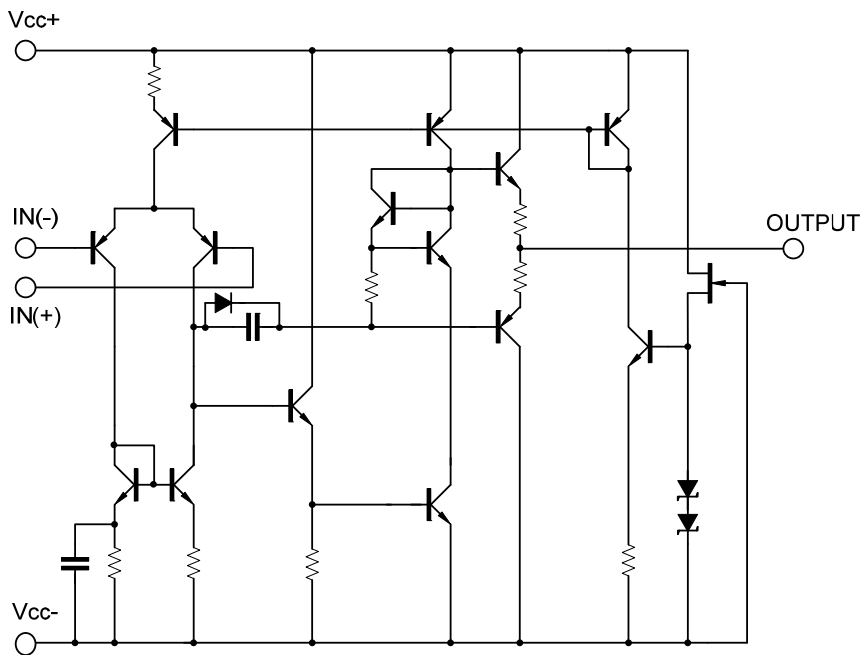
PACKAGE	MARKING
DIP-8	 <p> UTC □□□□ → Date Code MC4580 □ → L: Lead Free □ → G: Halogen Free □ → Lot Code </p>
SIP-8	 <p> UTC □□□□ → Data Code MC4580 □ → L: Lead Free □ → G: Halogen Free □ → Lot Code </p>
SOP-8	 <p> UTC □□□□ → Date Code MC4580 □ → L: Lead Free □ → G: Halogen Free □ → Lot Code </p>
MSOP-8	 <p> UTC □□□□ → Date Code MC4580 □ → L: Lead Free □ → G: Halogen F □ → Lot Code </p>
TSSOP-8	 <p> UTC □□□□ → Date Code MC4580 □ → L: Lead Free □ → G: Halogen Free □ → Lot Code </p>
DFN2030-8	 <p> MC 4580 □□□□ → Date Code </p>

■ PIN CONFIGURATION



Note: No connect.

■ TEST CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

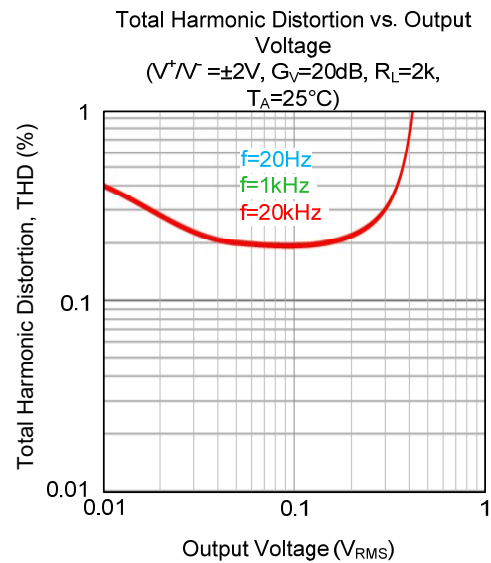
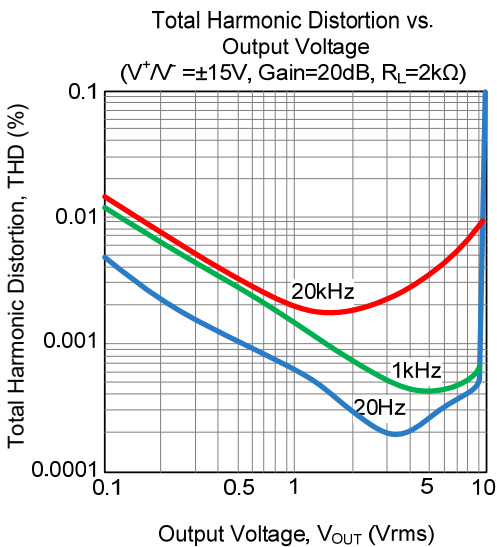
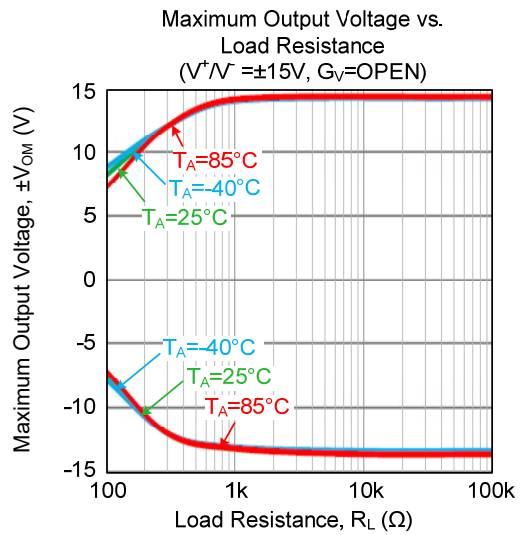
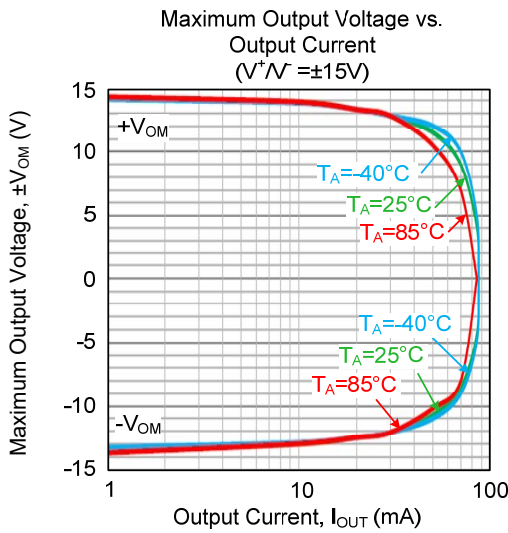
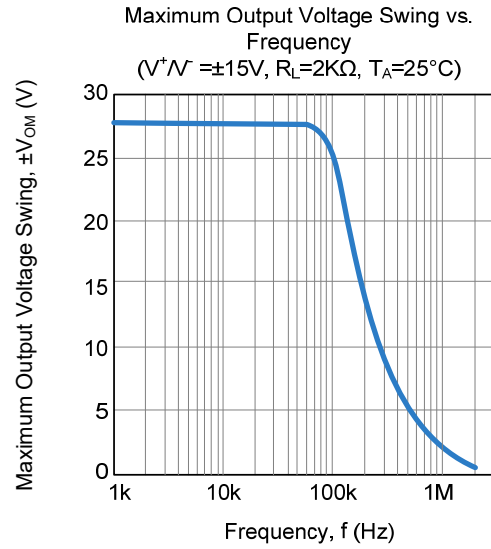
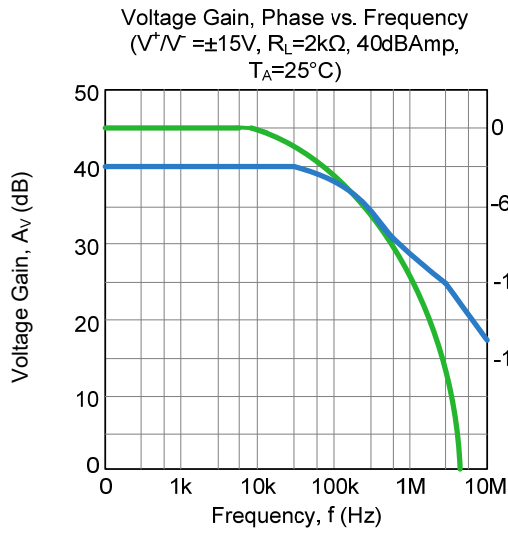
PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V^+ / V^-	± 18	V
Input Voltage		V_{IN}	± 15	V
Differential Input Voltage		$V_{I(DIFF)}$	± 30	V
Output Current		I_{OUT}	± 50	mA
Power Dissipation	DIP-8	P_D	750	mW
	SIP-8			
	SOP-8			
	TSSOP-8			
	MSOP-8			
	DFN2030-8			
Junction Temperature		T_J	+125	$^\circ\text{C}$
Operating Temperature		T_{OPR}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature		T_{STG}	-40 ~ +125	$^\circ\text{C}$

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

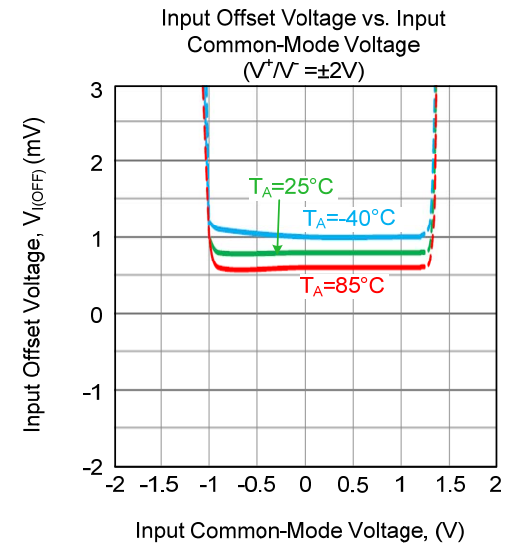
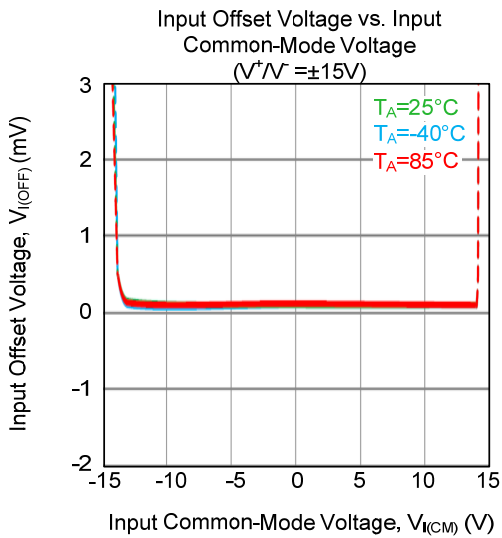
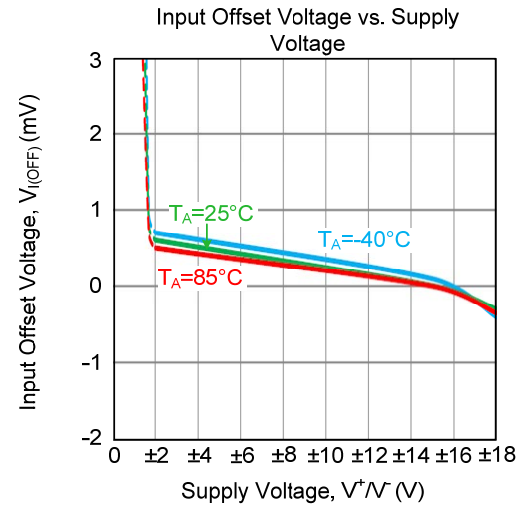
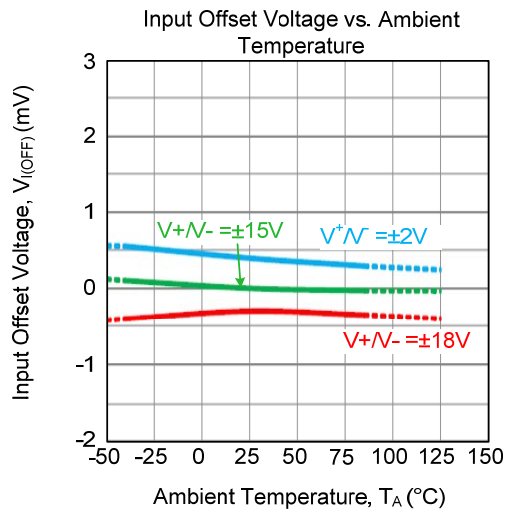
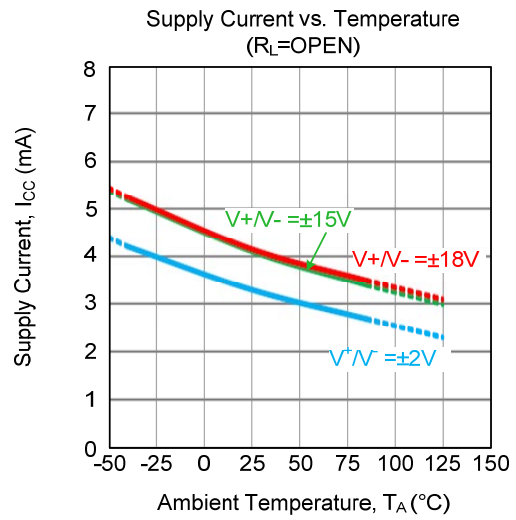
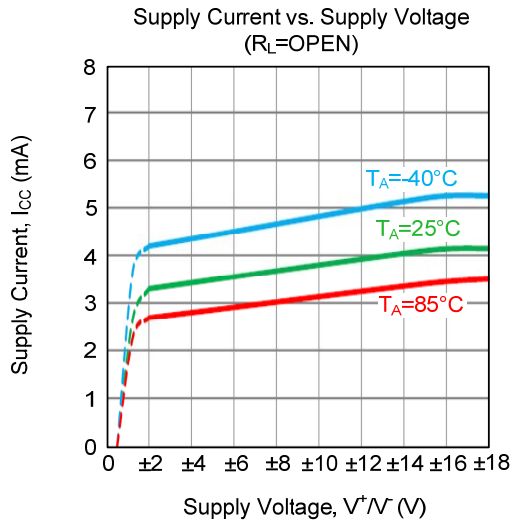
■ ELECTRICAL CHARACTERISTICS ($V^+ / V^- = \pm 15\text{V}$, $T_A=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{I(OFF)}$	$R_S \cong 10\text{k}\Omega$		0.5	3	mV
Input Offset Current	$I_{I(OFF)}$			5	200	nA
Input Bias Current	$I_{I(BIAS)}$			100	500	nA
Large Signal Voltage Gain	G_V	$V_{OUT} = \pm 10\text{V}$, $R_L \cong 2\text{k}\Omega$	90	110		dB
Output Voltage Swing	V_{OM}	$R_L \cong 2\text{k}\Omega$	± 12	± 13.5		V
Input Common Mode Voltage	$V_{I(CM)}$		± 12	± 13.5		V
Common Mode Rejection Ratio	CMRR	$R_S \cong 10\text{k}\Omega$	80	110		dB
Supply Voltage Rejection Ratio	SVR	$R_S \cong 10\text{k}\Omega$	80	110		dB
Operating Current	I_{CC}			6	9	mA
Slew Rate	SR	$R_L \cong 2\text{k}\Omega$		5		V/ μs
Gain bandwidth Product	GB	$f=10\text{KHz}$		15		MHz
Total Harmonic Distortion	THD	$G_V=20\text{dB}$, $V_{OUT}=5\text{V}$, $R_L=2\text{k}\Omega$, $f=1\text{KHz}$		0.0005		%
Input Noise Voltage	eN	RIAA $R_S=2.2\text{ k}\Omega$, 30kHzLPF		0.8		μVrms

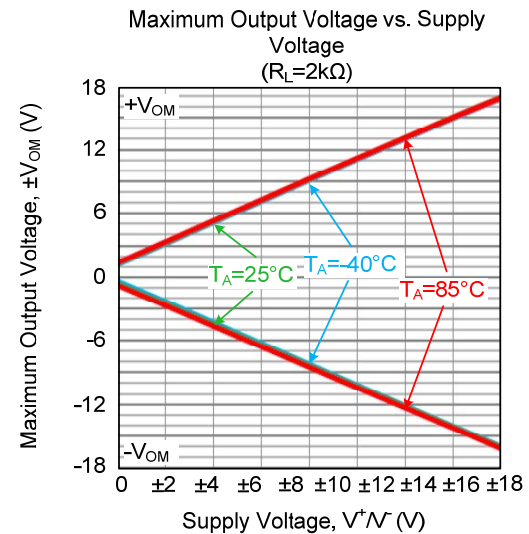
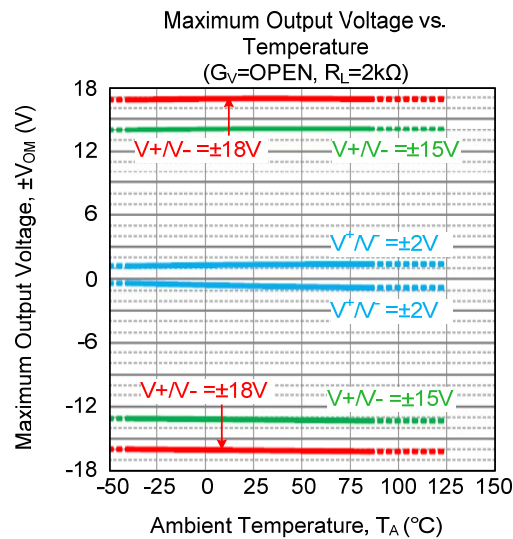
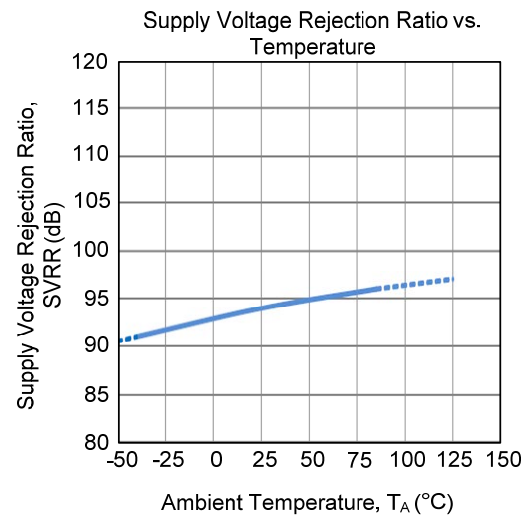
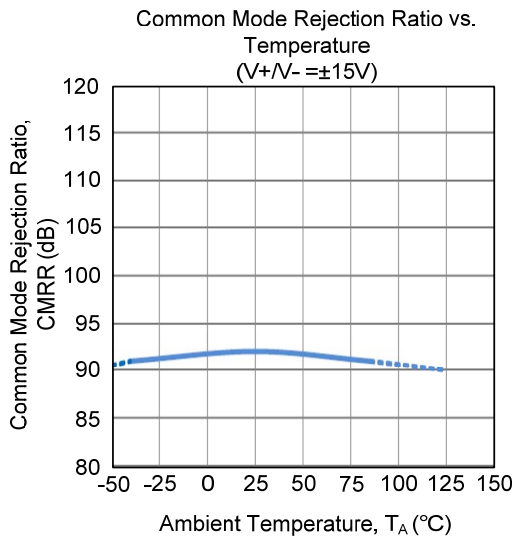
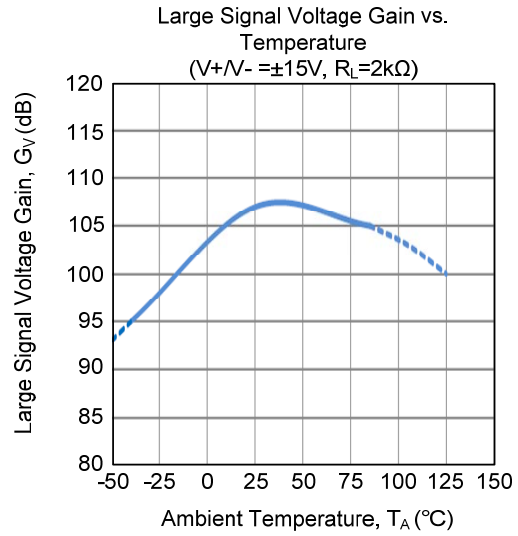
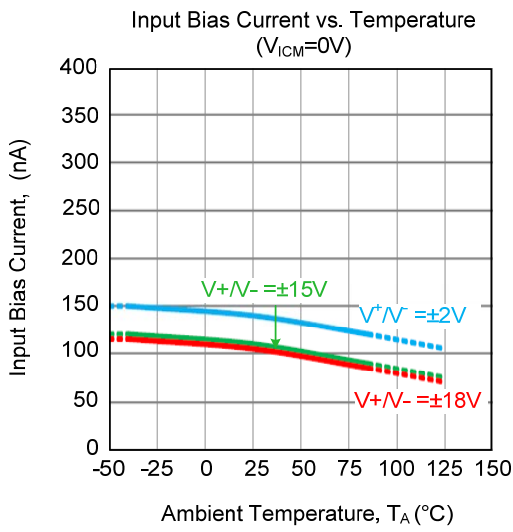
■ TYPICAL CHARACTERISTICS



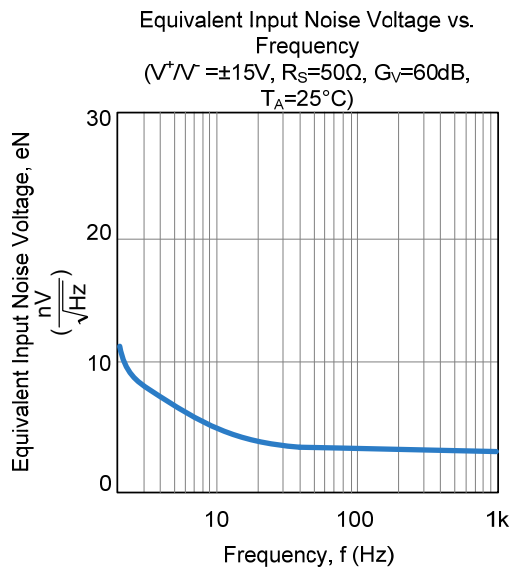
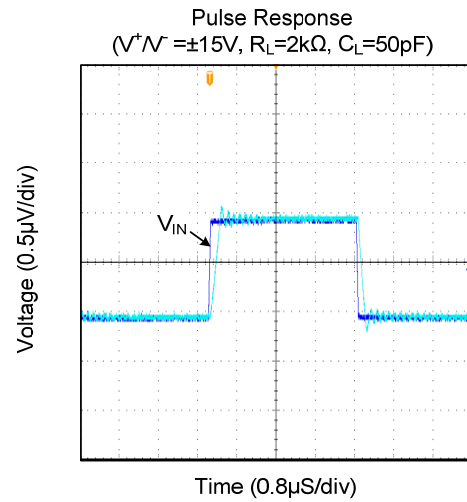
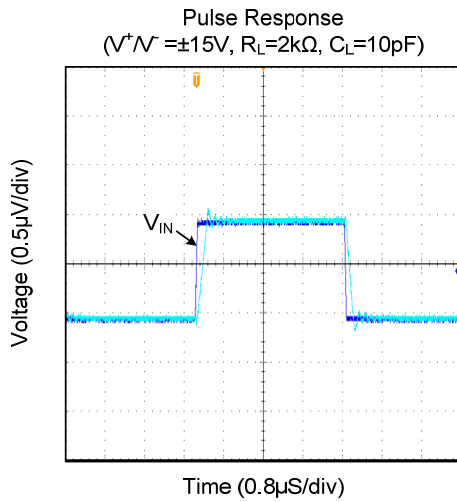
■ TYPICAL CHARACTERISTICS (Cont.)



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■ TYPICAL CHARACTERISTICS (Cont.)



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