

VIDEO DIFFERENTIAL OUTPUT DRIVER

■GENERAL DESCRIPTION

The NJM2504 is video differential output driver. The single-end signal is converted to the differential signal. The single-end signal can be transmitted by the differential signal by the connection with NJM2507.

And, it is converted to the single-end signal by the NJM2507.

The common mode noise can be removed because of the differential motion transmission, and it is the best for the transmission of car AV system.

■PACKAGE OUTLINE

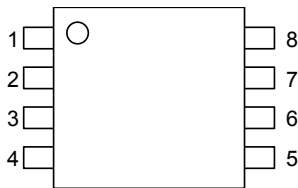


NJM2504RB1
MSOP8(TVSP8)

■FEATURES

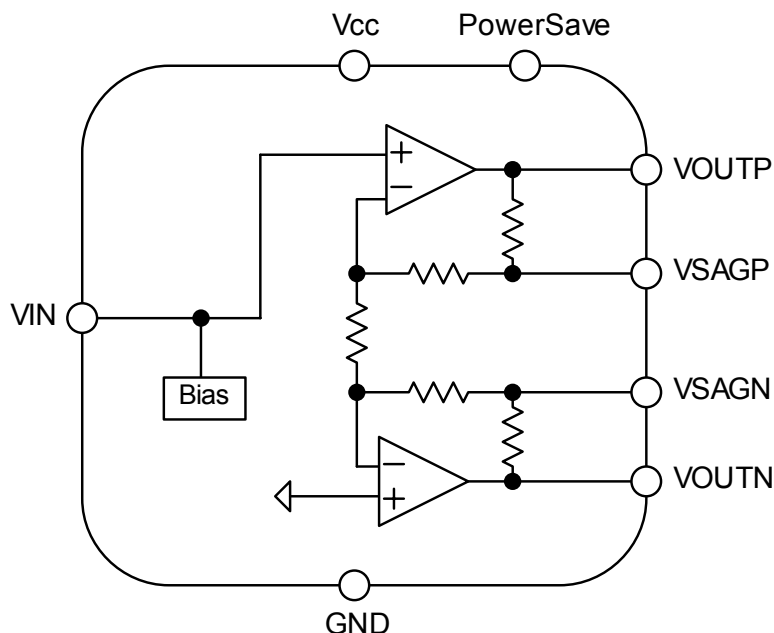
- Operating Voltage 4.5 to 9.5V
 - Input: Single-end signal, Output: Differential signal
 - Internal 6dB Amplifier
 - Internal 75ohm Driver
 - Internal SAG Correction Circuit
 - Bipolar Technology
 - Package Outline MSOP8(TVSP8)*
- *MEET JEDEC MO-187-DA / THIN TYPE

■PIN CONNECTION



- 1: V+
- 2: Power Save
- 3: VIN
- 4: GND
- 5: Vsagn
- 6: Voutn
- 7: Vsagp
- 8: Voutp

■BLOCK DIAGRAM



NJM2504

■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	10	V
Power Dissipation	P _D	580(Note1)	mW
Operating Temperature Range	Topr	-40 to +85(Note2)	°C
Storage Temperature Range	Tstg	-40 to +150	°C

(Note 1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 2 layers, FR-4)

(Note 2) It has high operating temperature range product. (-40 to +105°C)

■RECCOMENDED OPERATING CONDITIONS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating voltage	Vopr		4.5	-	9.0	V

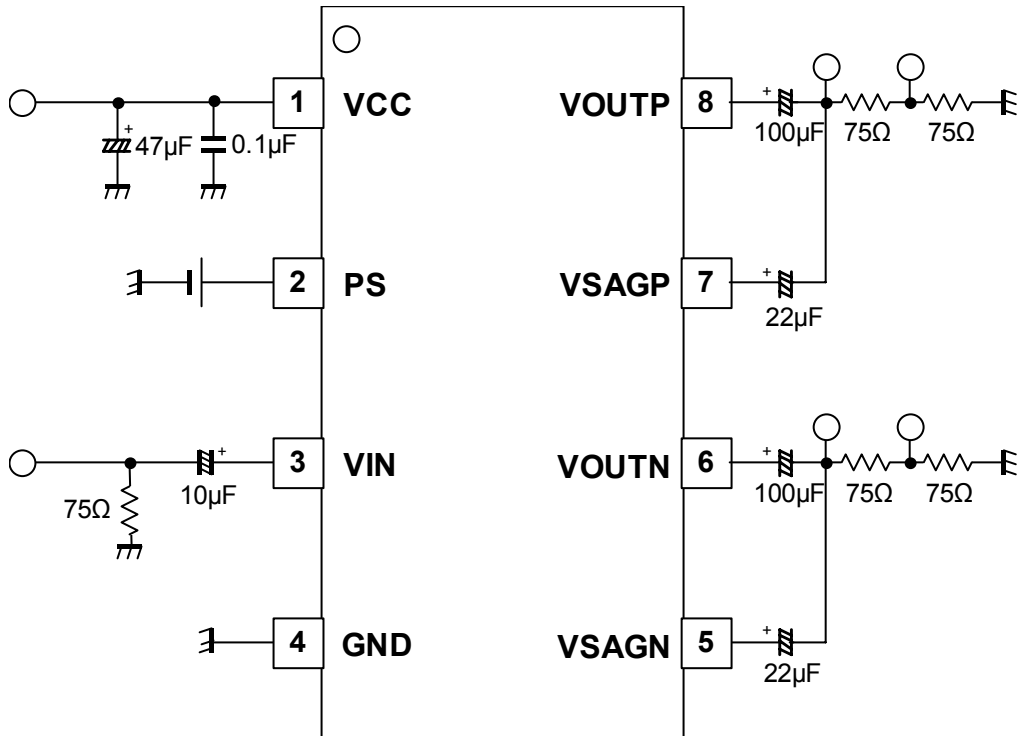
■ELECTRICAL CHRACTERISTCS (V⁺=5V, RL=150ohm, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I _{CC}	No signal	-	16	20	mA
Supply Current at Power Save Mode	I _{save}	Power save mode	-	0.3	0.5	mA
Maximum Output Level	V _{om}	Vin=100kHz, sin-signal, THD=1%,	2.2	2.4	-	Vp-p
Voltage Gain	G _v	Vin=1MHz, 1.0Vp-p sin-signal	5.7	6.2	6.7	dB
Frequency Characteristics	G _f	Vin=10MHz/1MHz, 1.0Vpp sin-signal	-1.0	0	1.0	dB
Differential Gain	DG	Vin=1.0Vp-p 10step video signal	-	0.5	-	%
Differential Phase	DP	Vin=1.0Vp-p 10step video signal	-	0.5	-	deg
SW Voltage High Level	V _{thH}		2.2	-	V ⁺	V
SW Voltage Low Level	V _{thL}		0	-	1.0	V
SW Sink Current High Level	I _{thH}	V=5V	-	-	120	μA
SW Sink Current Low Level	I _{thL}	V=0.3V	-	-	8.0	μA

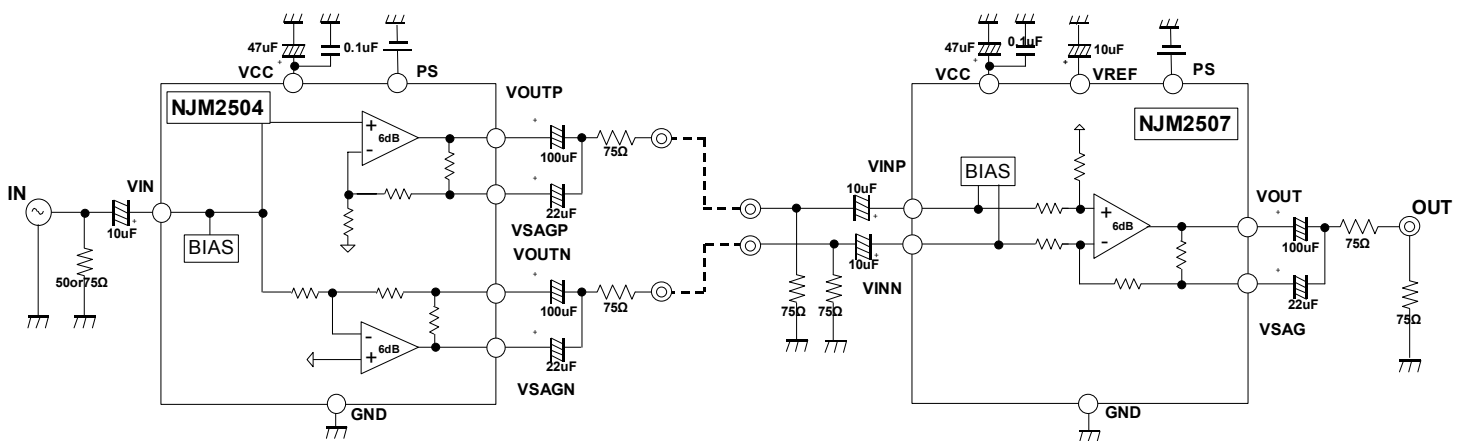
■CONTROL CHRACTERISTIC

PARAMETER	STATUS	MODE	
Power Save	H	Power save: OFF	Active mode
	L	Power save: ON	Non-Active mode (Mute)
	OPEN	Power save: ON	Non-Active mode (Mute)

TEST CIRCUIT

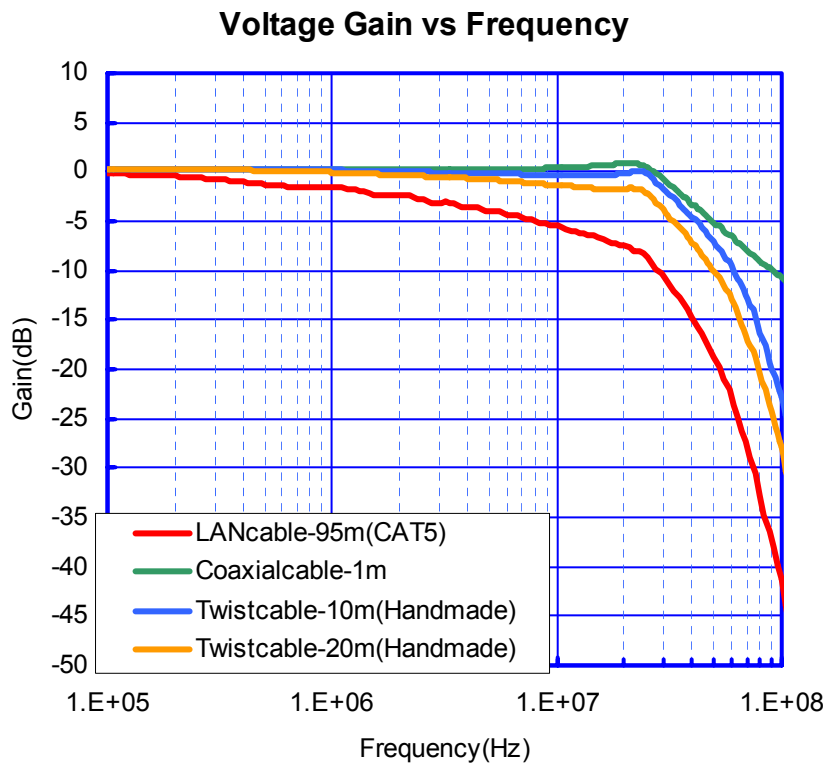


APPLICATION CIRCUIT



APPLICATION

When use cable of than 20 meter, voltage gain is attenuated. Please make a adequate evaluation. Refer to fig.

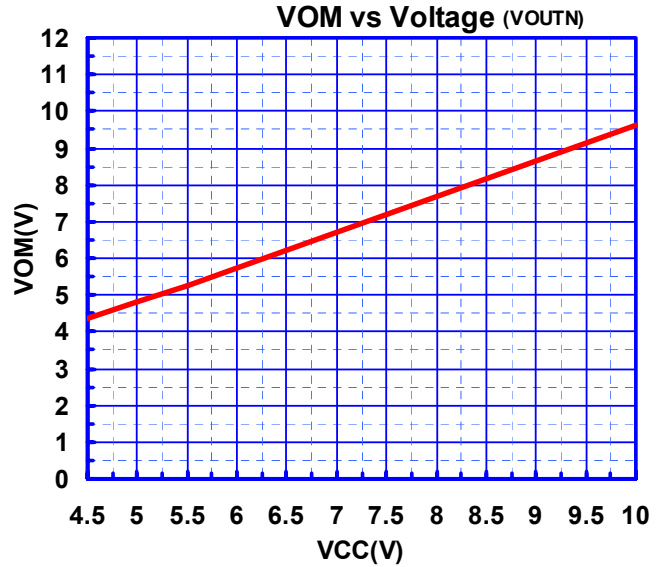
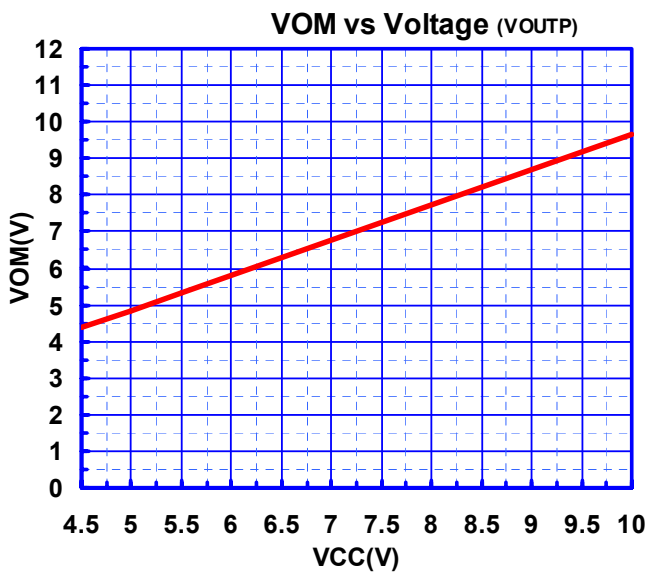
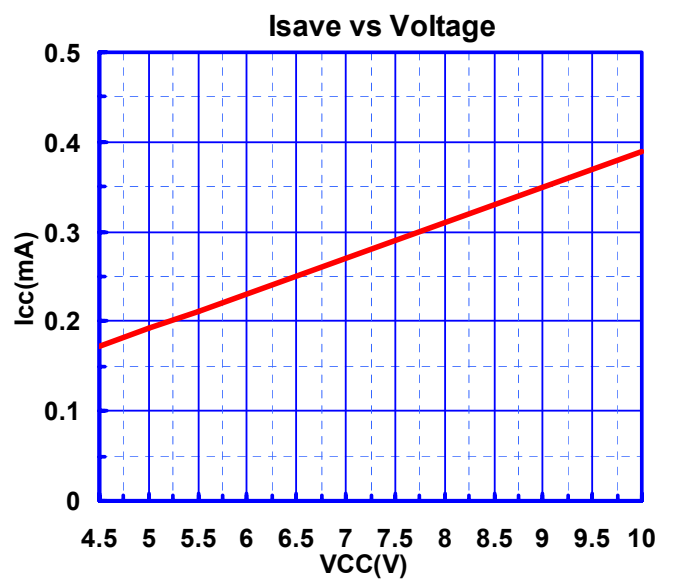
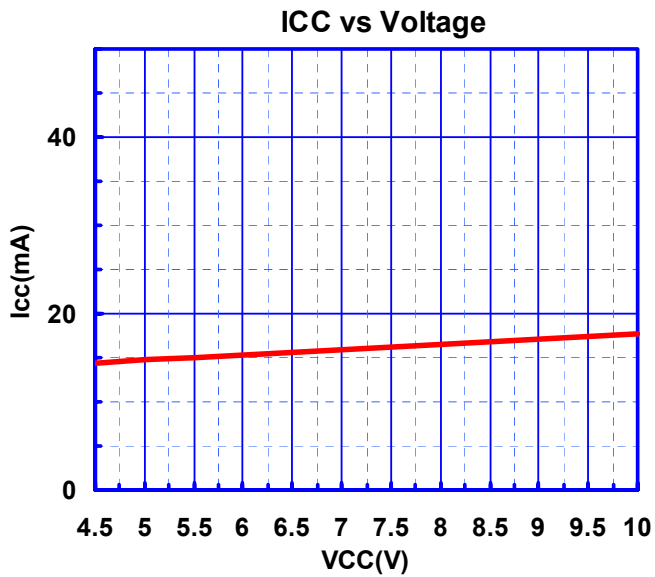
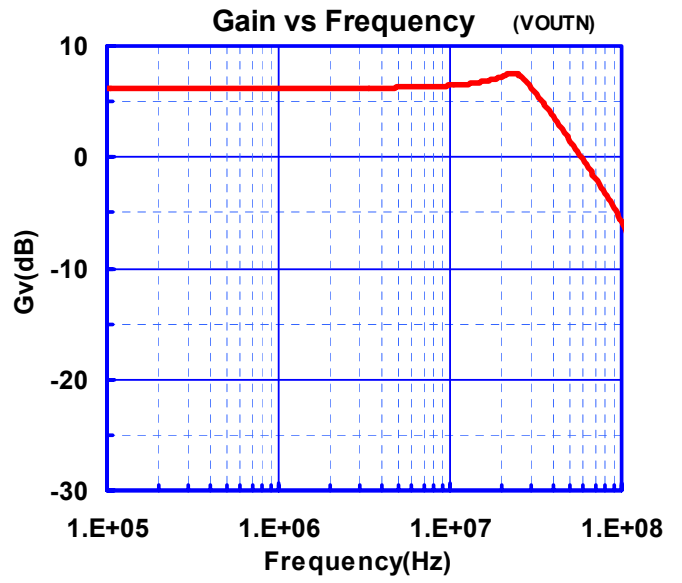
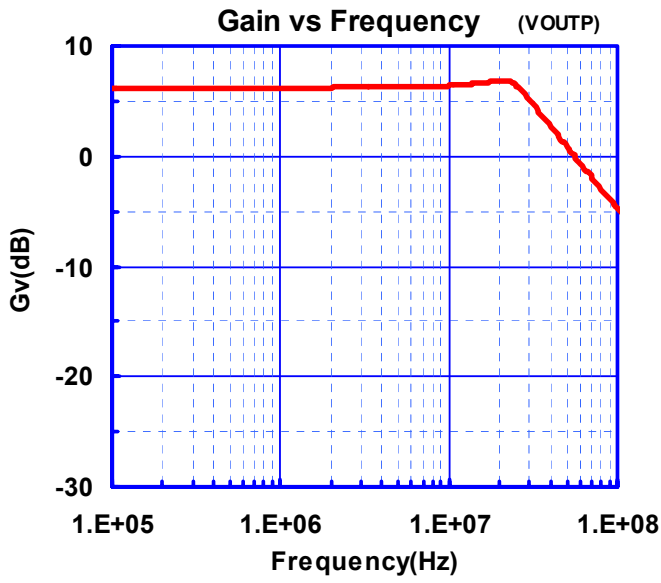


■ EQUIVALENT CIRCUIT (Vcc=5V)

PIN No.	PIN NAME	EQUIVALENT CIRCUIT	DC VOLTAGE
1	Vcc		5V
2	Power Save		-
3	VIN		2.5V
4	GND		-
5	VSAGN		2.5V
6 8	VOUTN VOUTP		2.5V
7	VSAGP		2.5V

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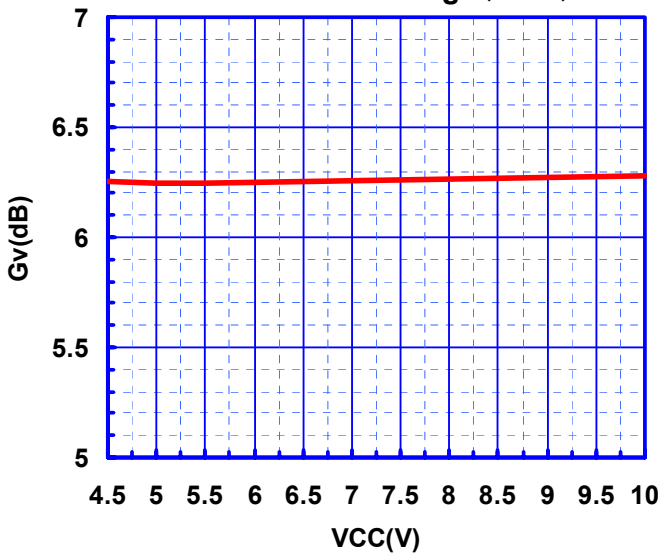
TYPICAL CHARACTERISTICS



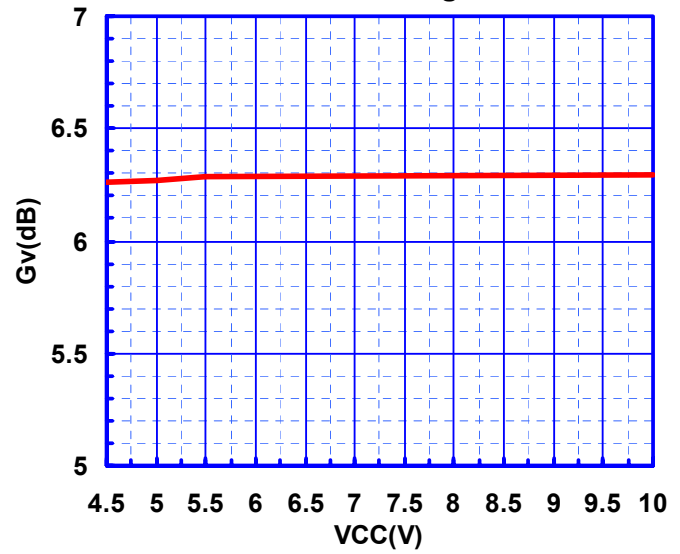
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TYPICAL CHARACTERISTICS

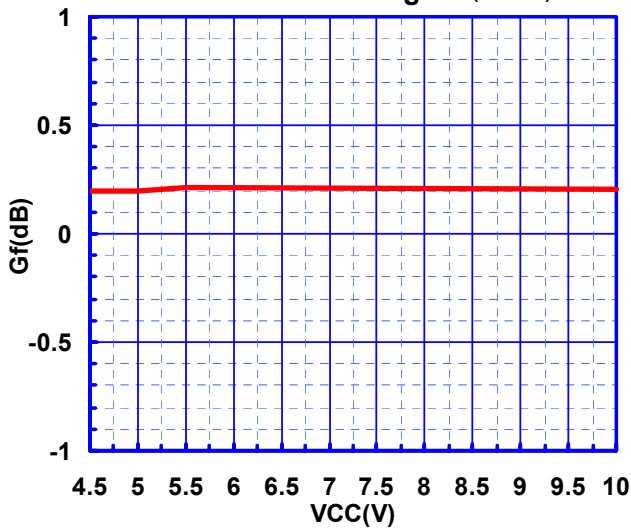
Gv vs Voltage (VOUTP)



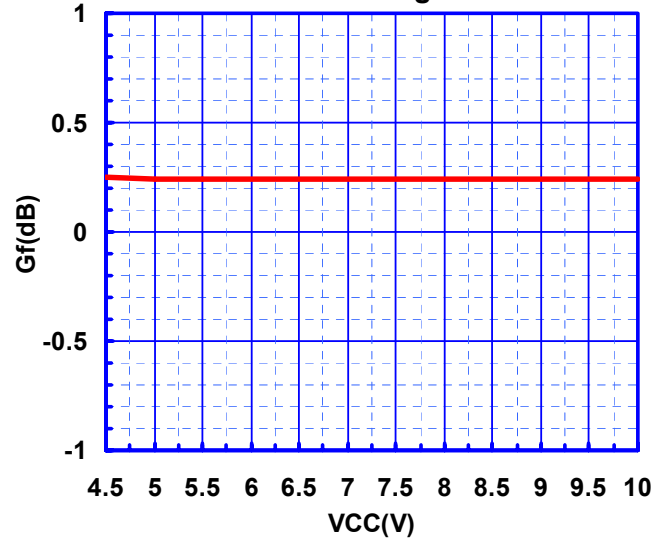
Gv vs Voltage (VOUTN)



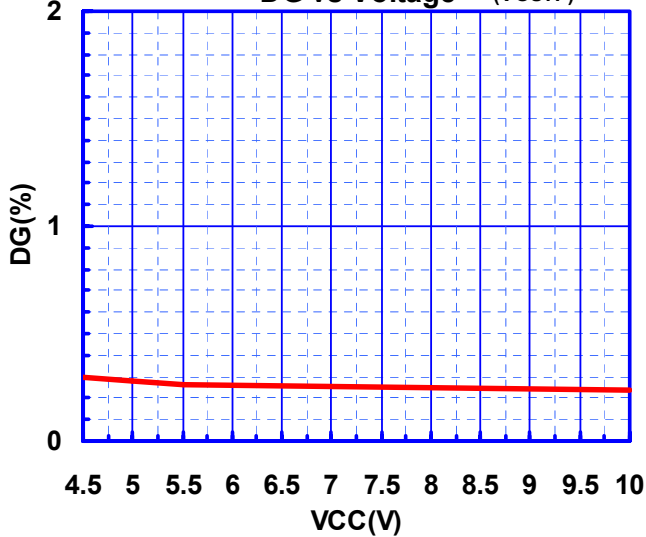
Gf vs Voltage (VOUTP)



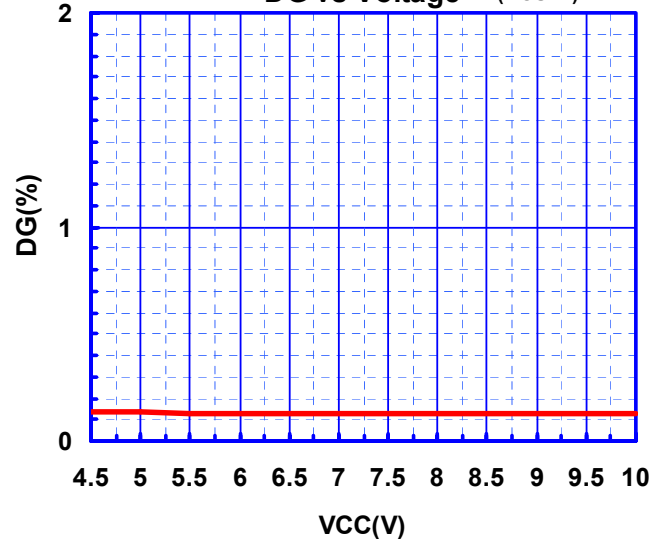
Gf vs Voltage (VOUTN)



DG vs Voltage (VOUTP)

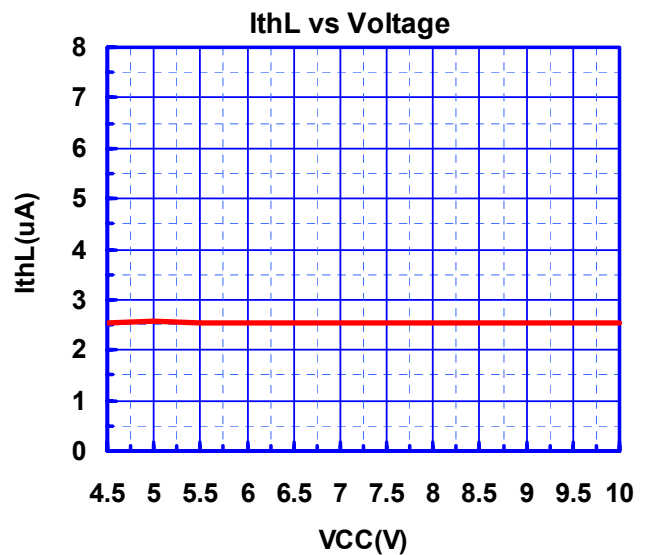
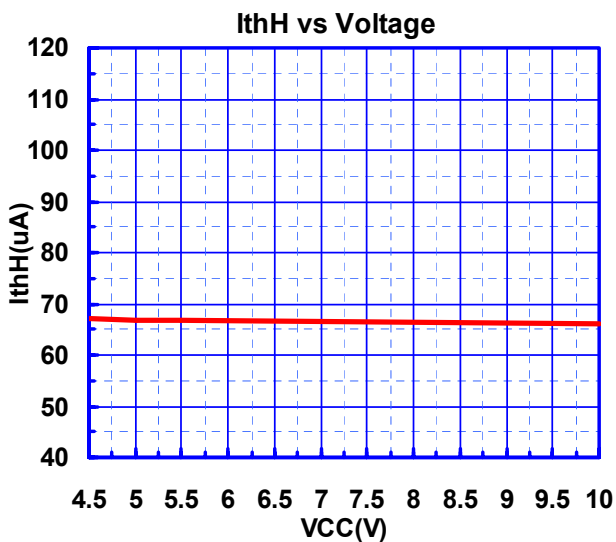
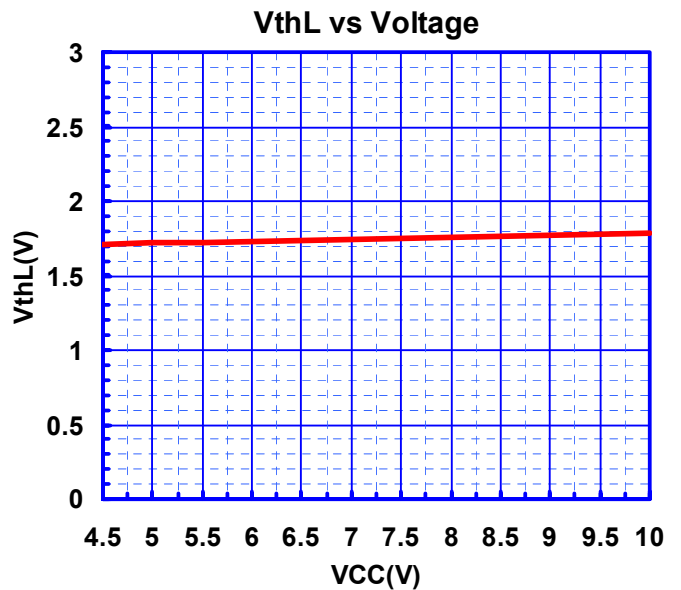
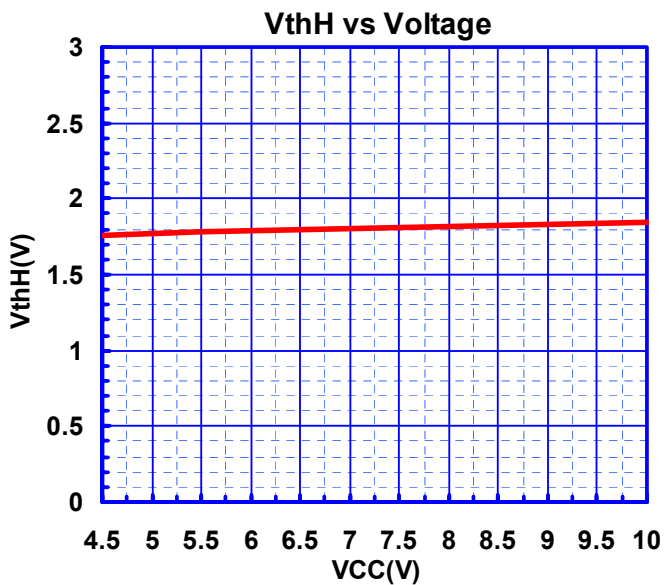
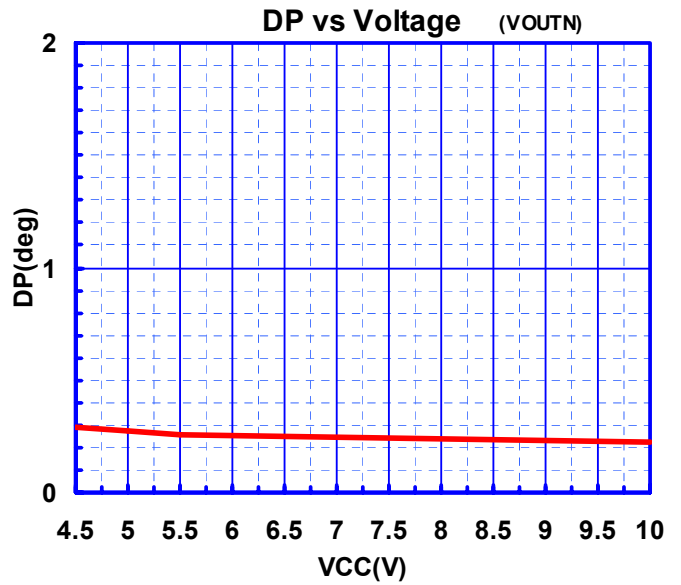
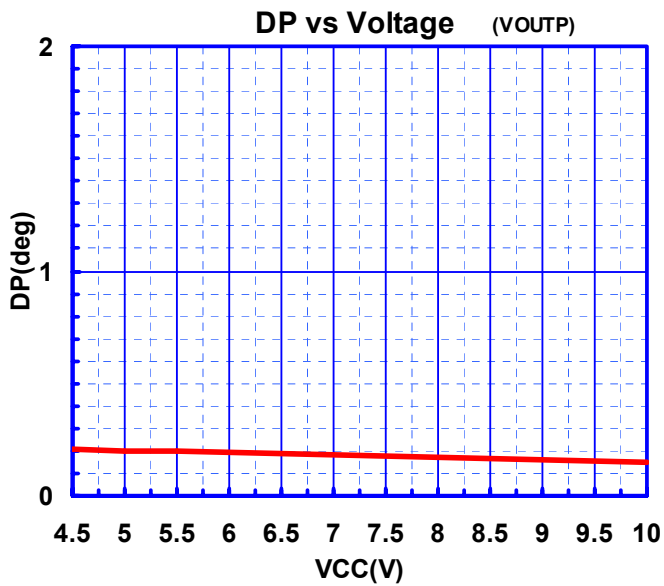


DG vs Voltage (VOUTN)

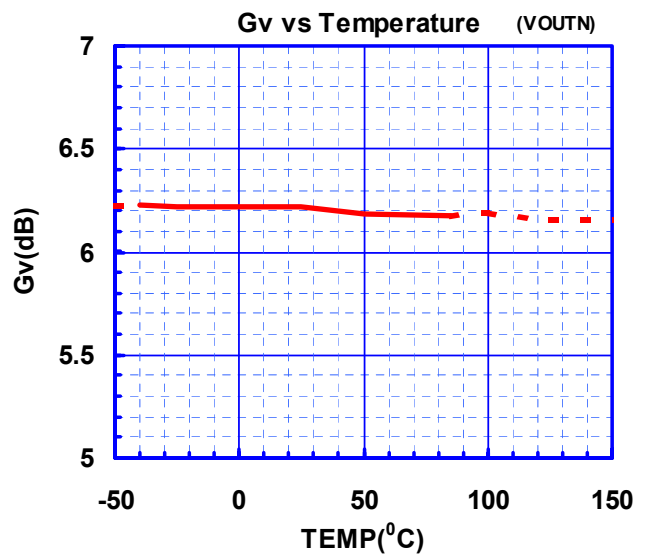
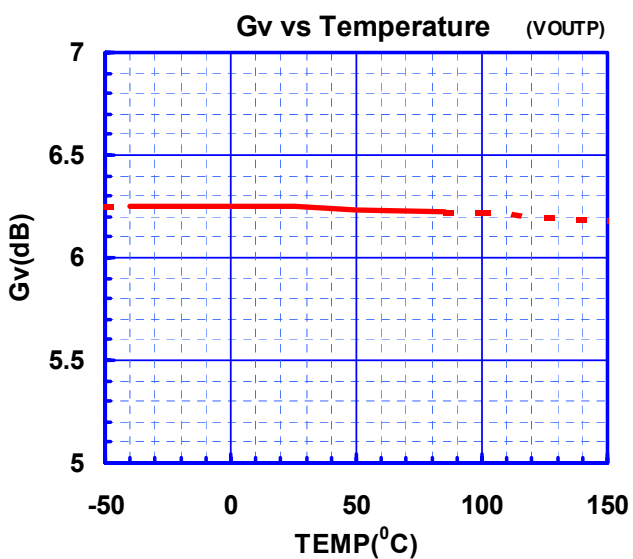
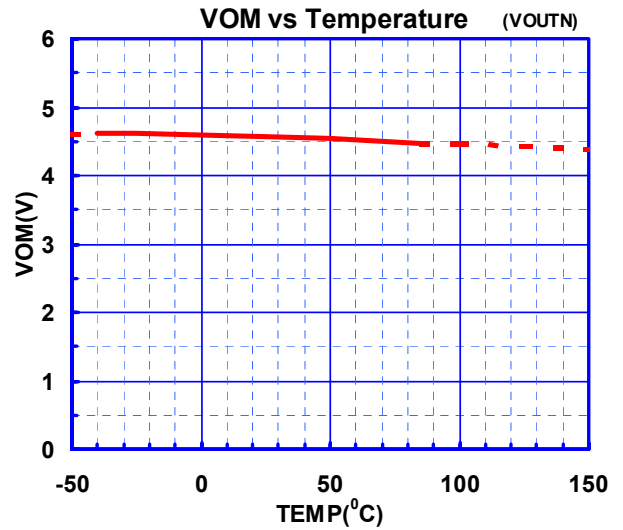
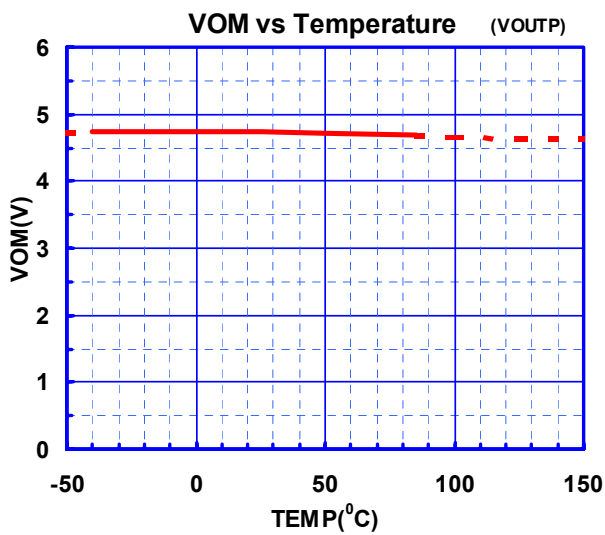
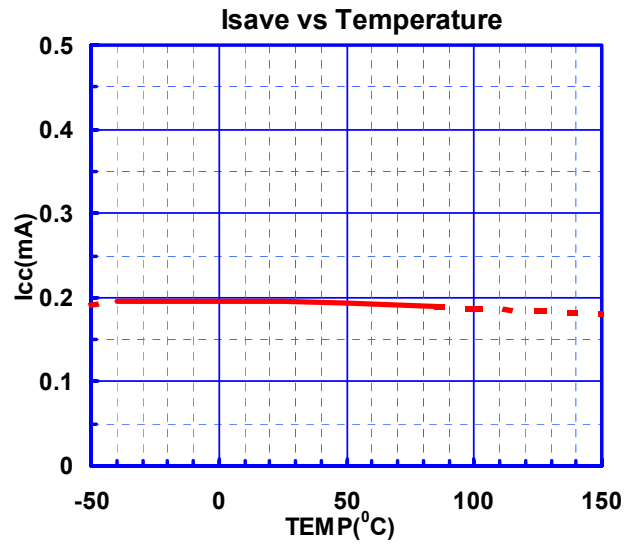
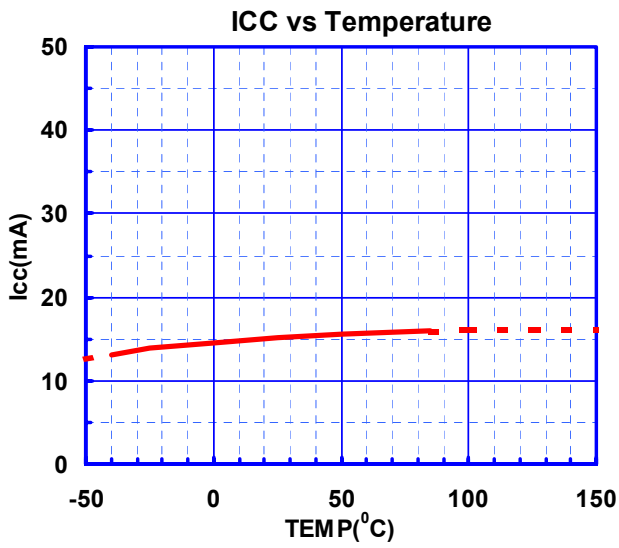


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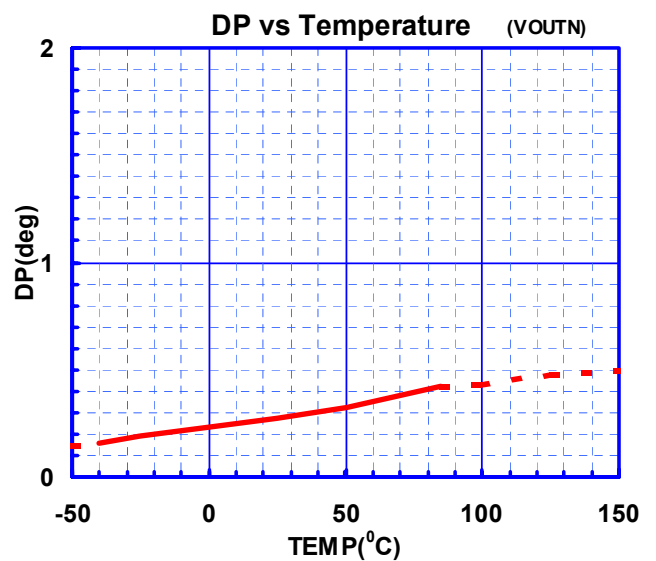
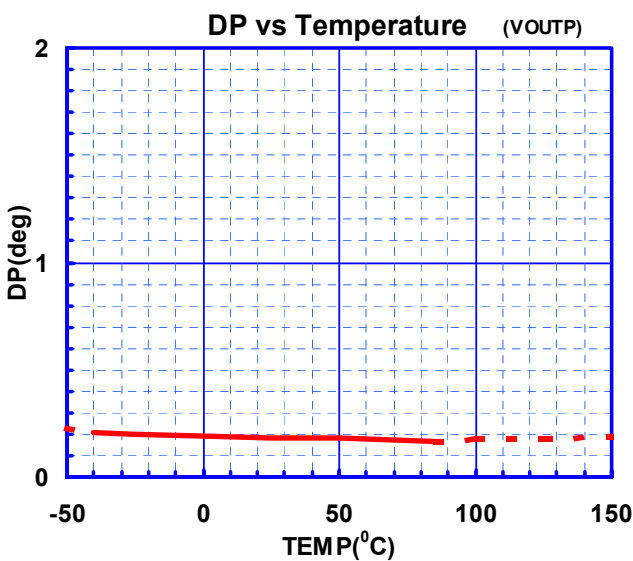
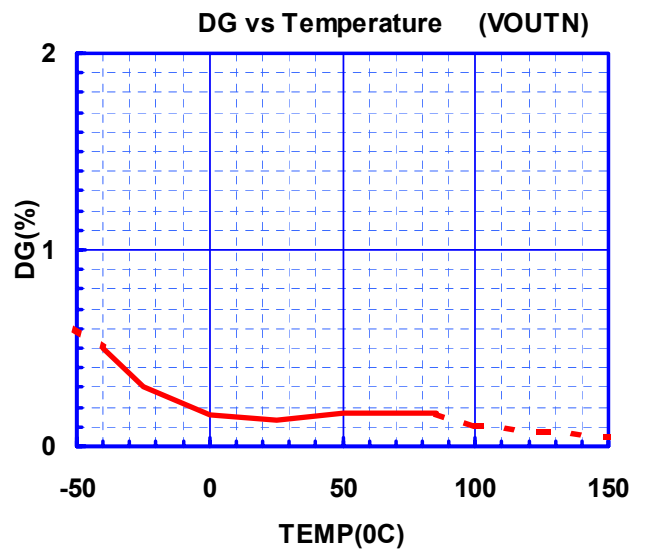
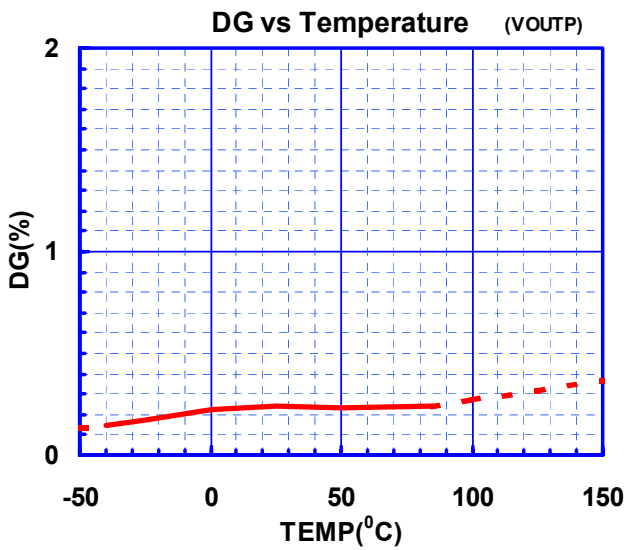
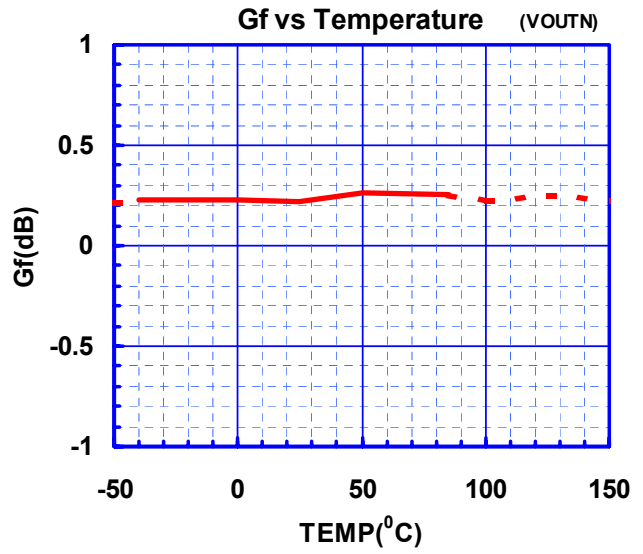
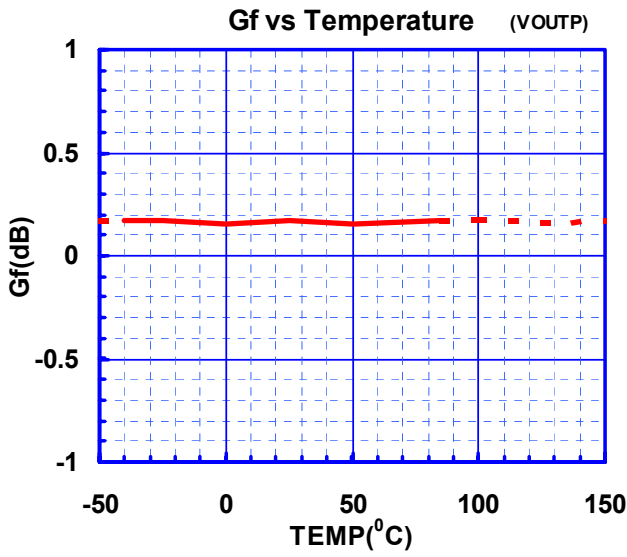


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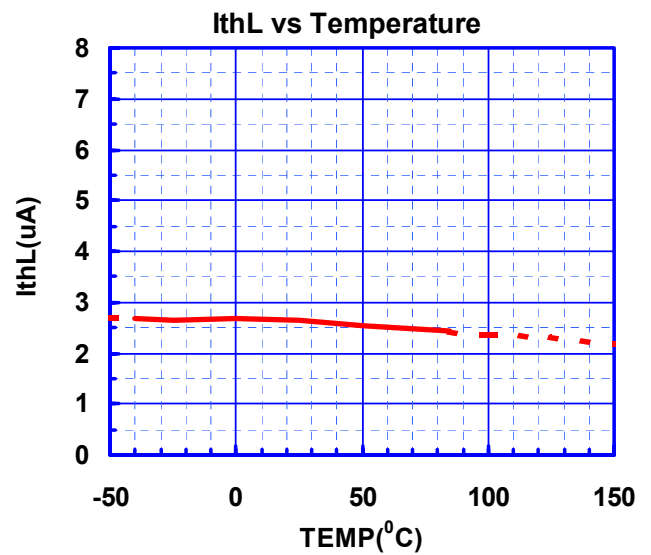
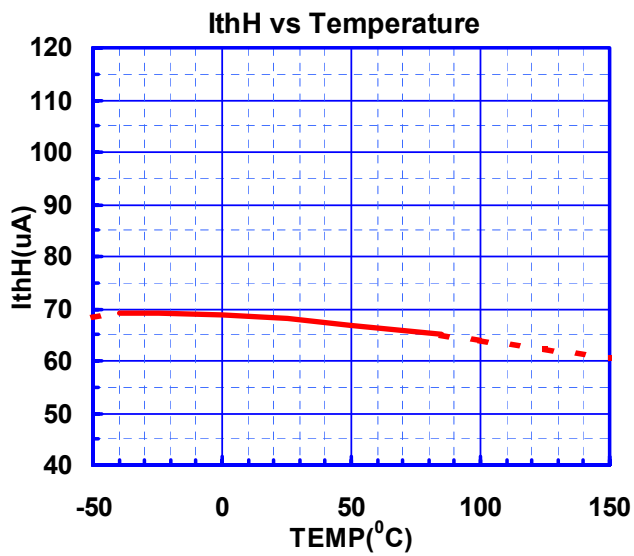
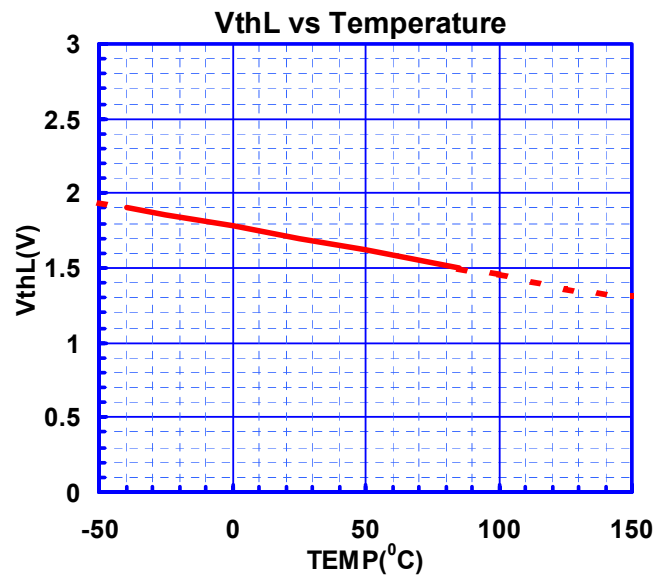
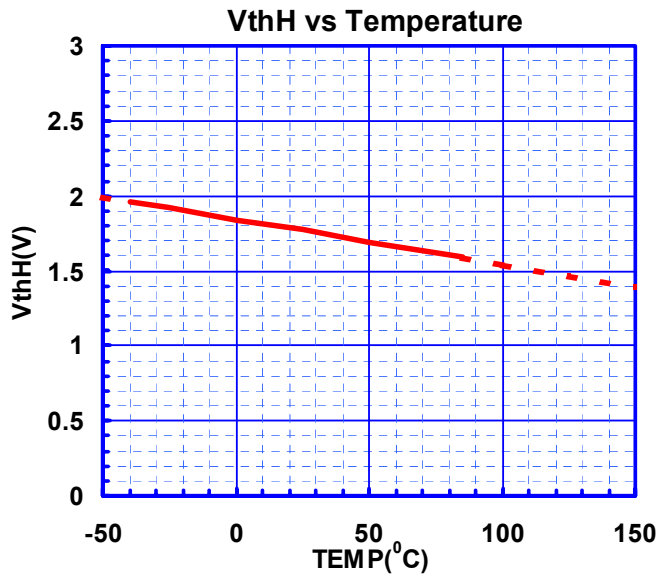


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TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



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