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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD SEMICONDUCTOR®

June 2011

FSA203 — Multimedia High-Speed USB, Video, and Negative Swing Audio Switch with Video Amp/Filter

Features

- USB: 3.5Ω Typical On Resistance
- Video/Mic: 3Ω Typical On Resistance
- Audio: 3.5Ω Typical On Resistance
- USB: -3db Bandwidth at 0pF > 745MHz
- Video: -3db Bandwidth > 615MHz
- Video: 1.0db Flatness > 6MHz
- Low-Power Shutdown Mode: 1µA Maximum
- Power-Off Protection on Common D+/R, D-/L, Video/Microphone Ports
- Packaged in Pb-free 20-Lead DQFN

Applications

- Cell Phone, PDA, Digital Camera, and Notebook
- LCD Monitor, TV, and Set-Top Box

Description

The FSA203 is a multimedia device that includes a Double-Pole, Double Throw (DPDT) USB / audio multiplexer, a video/microphone switch, and a video amplifier / filter path. The DPDT path combines a low-distortion audio and a USB2.0 switch path.

This configuration enables audio and USB data to share a common connector port. The architecture is designed such that audio signals are allowed to swing below ground, enabling the use of a common USB and headphone connector for personal media players and similar portable peripheral devices.

The FSA203 includes a power-off feature to minimize current consumption when V_{av} or V_{bus} is not present. This power-off circuitry is available for the common D+/R, D-/L ports only.

Typical applications involve switching in portables and consumer applications, such as cell phones, digital cameras, and notebooks with hubs or controllers.

IMPORTANT NOTE:

For additional performance information, please contact analogswitch@fairchildsemi.com.

Ordering Information

Part Number	Top Mark	Package
FSA203BQX	203	20-Lead Depopulated very thin Quad Flat-pack No leads (DQFN) JEDEC MO-241, 2.5 x 4.5mm

Diagrams

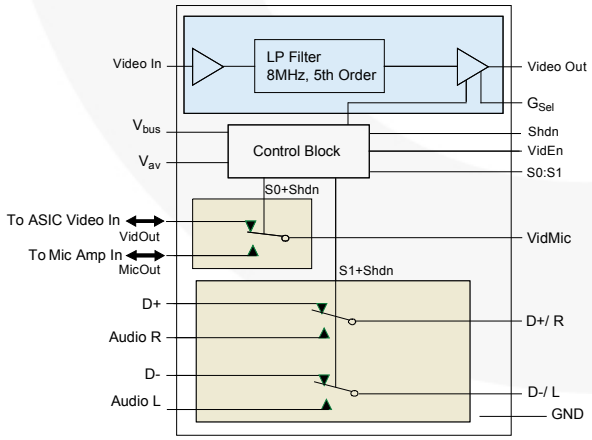

Figure 1. Functional Block Diagram

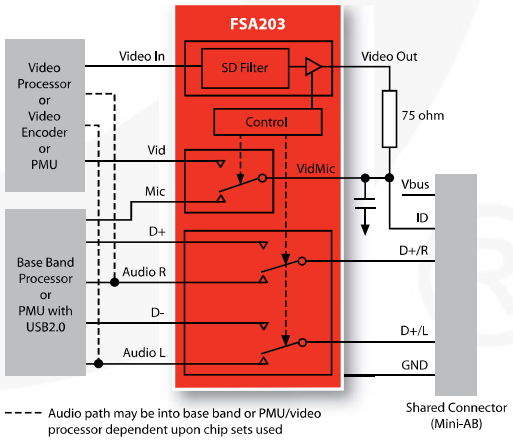

Figure 2. Typical Application Diagram

Pin Assignments

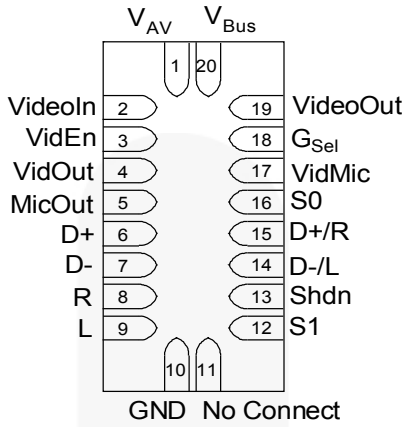

Figure 3. DQFN-20 (Top Through View)

Pin Descriptions

Pin #	Name	Description
1	V_{av}	Audio/Video Power Supply
2	Video In	Video Input Source
3	VidEn	Video Output Buffer Enable (Active High)
4	VidOut	Video Connection to ADC
5	MicOut	Microphone Pre-Amp Connection
6, 7	D+, D-	USB Data Bus Input sources
8.9	R, L	Audio Right and Left Input sources
10	GND	Ground
11	NC	No Connect
12,16	S1, S0	Switch Control Pins
13	Shdn	Shutdown Control Pin
14, 15	D-/L, D+/R	USB/Audio Common Connector Ports
17	VidMic	Video / Microphone Common Connector Port
18	G_{Sel}	Gain Select (0dB/6dB); G_{Sel} = High = 6dB
19	Video Out	Buffered/Filtered Video Out
20	V_{bus}	USB V_{bus} Supply

Truth Table

Shdn	VidEn	S0	S1	D+/R	D-/L	Vid/Mic	Video Out
LOW	LOW	LOW	LOW	D+	D-	VidOut	Off
LOW	LOW	LOW	HIGH	R	L	VidOut	Off
LOW	LOW	HIGH	LOW	D+	D-	MicOut	Off
LOW	LOW	HIGH	HIGH	R	L	MicOut	Off
LOW	HIGH	LOW	LOW	D+	D-	VidOut	On
LOW	HIGH	LOW	HIGH	R	L	VidOut	On
LOW	HIGH	HIGH	LOW	D+	D-	MicOut	On
LOW	HIGH	HIGH	HIGH	R	L	MicOut	On
HIGH	X	X	X	Hi-Z	Hi-Z	Hi-Z	Off

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameter		Min.	Max.	Unit
V_{AV} / V_{Bus}	Supply Voltage		-0.5	6.0	V
V_{SW}	Switch I/O Voltage[1]	D+, D-, D+/R, D-/L Pins	V_{AV} -5.5	V_{AV} -0.3	V
		R, L, VidOut, MicOut, VidMic Pins	V_{AV} -5.5	V_{AV} -0.3	V
$V_{VideoIn}$	Control Input Voltage		-0.5	6.0	V
$V_{VideoOut}$	Control Output Voltage		-0.5	6.0	V
V_{CNTRL}	Control Input Voltage[1] S0: S1 VidEn, Shdn		-0.5	6.0	V
I_{Video}	Video Out Current			16	mA
I_{IK}	Input Clamp Diode Current		-50		mA
I_{SW}	Switch I/O Current (Continuous)	USB D+, D-		20	mA
		R, L, D+/R, D-/L		50	
		VidOut, MicOut, VidMic		50	
I_{SWPEAK}	Peak Switch Current (Pulsed at 1ms Duration, <10% Duty Cycle)	USB D+, D-		100	mA
		R, L, D+/R, D-/L		250	
		VidOut, MicOut, VidMic		250	
T_{STG}	Storage Temperature Range		-65	+150	°C
T_J	Maximum Junction Temperature			+150	°C
T_L	Lead Temperature (Soldering, 10 seconds)			+260	°C
ESD	Human Body Model (JEDEC: JESD22-A114)	I/O to GND		5.5	kV
		All other pins		6.5	
		V_{AV}/V_{Bus} to GND		12.0	
	Charged Discharge Model (JEDEC: JESD22-C101)			2.0	kV

Note:

1. The input and output negative ratings may be exceeded if the input and output diode current ratings are observed.

Recommended Operating Conditions

The Recommended Operating Conditions table defines the conditions for actual device operation. Recommended operating conditions are specified to ensure optimal performance to the datasheet specifications. Fairchild does not recommend exceeding them or designing to Absolute Maximum Ratings.

Symbol	Parameter	Min.	Max.	Unit
V_{AV}	Supply Voltage	3.0	3.6	V
V_{Bus}	Supply Voltage	4.25	5.5	V
$V_{VideoIn}$	Video Input Voltage	0	V_{AV}	V
$V_{VideoOut}$	Video Output Voltage	0	V_{AV}	V
V_{CNTRL}	Control Input Voltage	0	V_{AV}	V
V_{SW}	Switch I/O Voltage	V_{AV} -5.5	V_{AV} -0.3	
T_A	Operating Temperature	-40	85	ºC

DC Electrical Characteristics

All typical values are at 25ºC unless otherwise specified.

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C			Unit
				Min.	Typ.	Max.	
V_{IK}	Clamp Diode Voltage	I_{IK} = -18mA	V_{AV} = 3.0V V_{Bus} = 0V			-1.2	V
V_{IH}	Control Input Voltage HIGH		V_{AV} = 3.0 to 3.6V V_{Bus} = 5.5V	1.3			V
V_{IL}	Control Input Voltage LOW		V_{AV} = 3.0 to 3.6V V_{Bus} = 5.5V			0.5	V
I_{IN}	Control Input Current	V_{CNTRL} = 0 to 3.6V	V_{AV} = 3.0 to 3.6V V_{Bus} = 5.5V	-1		1	µA
I_{OFF}	Power Off Leakage Current (Common Port Only D+/R, D-/L, VidMic)	Common Ports (D+/R,D-/L); V_{SW} = 0 to 5.5V See Figure 15	V_{AV} = 0V V_{Bus} = 0V			500	nA
$I_{OZ(OFF)}$	Off Leakage Current of Ports D+, D-, R, L, MicOut, VidOut)	Ports (D+/R, D-/L = 0.3V, V_{AV} – 0.3V, D+, D-, R, L = 0.3V, V_{AV} – 0.3V or Floating) See Figure 15	V_{AV} = 0V V_{Bus} = 0V			500	nA
$I_{NC(0N)}$	On-Leakage Current of Ports D+/R, D-/L or VidMic	Ports (D+/R, D-/L = 0.3V, V_{AV} – 0.3V, D+, D-, R, L = 0.3V, V_{AV} – 0.3V or Floating) See Figure 16	V_{AV} = 3.6V V_{Bus} = 5.5V	-100	50	100	nA
USB Switch Path							
	USB Analog Signal Range(3)			0		3.6	V
R_{ONUSB}	Switch On Resistance(2)	$V_{D+/D-}$ = 0V, 0.4V, I_{ON} = -8mA See Figure 5, Figure 14	V_{AV} = 3.0V V_{Bus} = 4.25V		4	6	Ω
ΔR_{ONUSB}	Delta On Resistance(3)	$V_{D+/D-}$ = 0V, 0.4V, I_{ON} = -8mA	V_{AV} = 3.0V V_{Bus} = 4.25V		0.35		Ω
$R_{FLAT(ON)USB}$	R_{ON} Flatness(4)	$V_{D+/D-}$ = 0V, 0.4V, I_{ON} = -8mA	V_{AV} = 3.0V V_{Bus} = 4.25V	1.0		2.5	Ω
Audio R/L Switch Path							
	Audio Analog Signal Range(3)			V_{AV} – 5.5		V_{AV}	V
$R_{ONAudio}$	Switch On Resistance(2)	$V_{L/R}$ = 0V, 0.7V; V_{AV} = 0.7V, V_{AV}; I_{ON} = -20mA; V_{Bus} = 0V See Figure 4, Figure 14	V_{AV} = 3.0V V_{Bus} = 0V		3.5	5.5	Ω
$\Delta R_{ONAudio}$	Delta On Resistance(3)	$V_{L/R}$ = 0V, 0.7V; I_{ON} = -20mA	V_{AV} = 3.0V V_{Bus} = 0V	0.10		0.35	Ω
$R_{FLAT(ON)Audio}$	R_{ON} Flatness(4)	$V_{L/R}$ = 0V, 0.7V; I_{ON} = -20mA	V_{AV} = 3.0V V_{Bus} = 0V		0.5	2.5	Ω

Continued on the following page…

DC Electrical Characteristics (Continued)

All typical values are at 25ºC unless otherwise specified.

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C			Unit
				Min.	Typ.	Max.	
VidMic Switch Path							
	Audio Analog Signal Range(3)			V_{AV} - 5.5		V_{AV}	V
$R_{ONVidMic}$	Video Switch On Resistance(2)	$V_{Vid/Mic}$ = 0V, 0.7V; I_{ON} = -13mA See Figure 6, Figure 14	V_{AV} = 3.0V V_{Bus} = 0V		3	6	Ω
Video Buffer Path							
V_{INV}	Video Input Voltage Range		V_{AV} = 3.0V V_{Bus} = 0V		1.2V_{pp}		V_{pp}
V_{OLS}	Output Level Shift	$V_{VideoIn}$ = 0V; R_S = 37.5Ω AC Coupled into 150Ω	V_{AV} = 3.0V V_{Bus} = 0V		250		mV
R_{OUTVID}	Video Output Impedance(3)		V_{AV} = 3.6V V_{Bus} = 0V		2.5		kΩ
Power Supply							
$I_{CC(AV)}$	Quiescent Supply Current	V_{CNTRL} = 0V to V_{AV} I_{OUT} = 0	V_{AV} = 3.6V V_{Bus} = 0V		4.5	6.4	mA
$I_{CC(VBus)}$	Quiescent Supply Current	V_{CNTRL} = 0V to V_{AV} I_{OUT} = 0	V_{AV} = 3.0V V_{Bus} = 5.5V			20	µA
I_{SHDN}	Shutdown Current		V_{AV} = 3.6V V_{Bus} = 0V		.050	0.100	µA
I_{CCT}	Increase in I_{CC} per Control Voltage and V_{AV}	V_{CNTRL} = 1.8V	V_{AV} = 3.6V V_{Bus} = 0V			18	µA
		V_{CNTRL} = 2.6V	V_{AV} = 3.6V V_{Bus} = 0V			15	µA

Notes:

2. R_{ON} measured by the voltage drop between 1Bn (2Bn) and 1A (2A) pins at identical current through the switch. R_{ON} is determined by the lower of the voltage on the two pins.
3. Guaranteed by characterization, not production tested.
4. Flatness is defined as the difference between the maximum and minimum values of on resistance over the specified range of conditions.

AC Electrical Characteristics

All typical value are for V_{AV} = 3.3V, V_{BUS} = 5.0V, and at 25ºC unless otherwise specified.

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C			Unit
				Min.	Typ.	Max.	
$t_{ONAudio}$	Turn-On Time S1 or Shdn to Output	$V_{D+/R, D-/L}$ = 0.8V R_L = 50Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 0V		25	45	ns
$t_{OFFAudio}$	Turn-Off Time S1 or Shdn to Output	$V_{D+/R, D-/L}$ = 0.8V R_L = 50Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 0V		22	30	ns
t_{ONUSB}	Turn-On Time S1 or Shdn to Output	$V_{D+/R, D-/L}$ = 0.8V R_L = 50Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 4.25V		31	40	ns
t_{OFFUSB}	Turn-Off Time S1 or Shdn to Output	$V_{D+/R, D-/L}$ = 0.8V R_L = 50Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 4.25V		12	25	ns
t_{PDUSB}	USB Switch Propagation Delay(5)	R_L = 50Ω, C_L = 5pF See Figure 19	V_{AV} = 3.0V V_{Bus} = 4.25V		0.25		ns
O_{IRRUSB}	Off-Isolation – USB	f = 1MHz, R_T = 50Ω, C_L = 5pF See Figure 7, Figure 21	V_{AV} = 3.0V V_{Bus} = 4.25V		-80		dB
O_{IRRA}	Off-Isolation – Audio	f = 20kHz, R_T = 50Ω, C_L = 5pF See Figure 8, Figure 21	V_{AV} = 3.0V V_{Bus} = 4.25V		-100		dB
$Xtalk_{USB}$	Non-Adjacent Channel Crosstalk – USB	f = 1MHz, R_L = 50Ω See Figure 9, Figure 22	V_{AV} = 3.0V V_{Bus} = 4.25V		-80		dB
$Xtalk_A$	Non-Adjacent Channel Crosstalk – Audio	f = 20kHz, R_L = 50Ω See Figure 10, Figure 22	V_{AV} = 3.0V V_{Bus} = 4.25V		-80		dB
BW_{USB}	-3db Bandwidth - USB	R_T = 50Ω, C_L = 0pF, Signal 0dBm See Figure 11, Figure 20	V_{AV} = 3.0V V_{Bus} = 4.25V		780		MHz
		R_T = 50Ω, C_L = 5pF, Signal 0dBm See Figure 11, Figure 20	V_{AV} = 3.0V V_{Bus} = 4.25V		450		MHz
THD	Total Harmonic Distortion	R_L = 32Ω	V_{AV} = 3.0V V_{Bus} = 0V		0.01		%
$PSRR_{Audio}$	Power Supply Rejection Ratio	$V_{R,L}$ = 0.8V; R_T = 32Ω; f=217Hz on V_{AV} at 600mV_{pp} See Figure 25	V_{AV} = 3.0V V_{Bus} = 0V		40		dB

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AC Electrical Characteristics (Continued)

All typical value are for V_{AV} = 3.3V, V_{BUS} = 5.0V, and at 25ºC unless otherwise specified.

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C			Unit
				Min.	Typ.	Max.	
VidMic Switch							
t_{ON}	Turn-On Time S1 or Shdn to Output	V_{VidMic} = 0.8V R_L = 75Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 0V		35	50	ns
t_{OFF}	Turn-Off Time S1 or Shdn to Output	V_{VidMic} = 0.8V R_L = 75Ω, C_L = 5pF See Figure 17, Figure 18	V_{AV} = 3.0V V_{Bus} = 0V		15	35	ns
BW_{VidMic}	-3db Bandwidth	R_T = 50Ω, C_L = 0pF, Signal 0dBm See Figure 12, Figure 20	V_{AV} = 3.0V V_{Bus} = 0V		615		MHz
		R_T = 50Ω, C_L = 5pF, Signal 0dBm See Figure 12, Figure 20	V_{AV} = 3.0V V_{Bus} = 0V		400		MHz
$Xtalk_{VidMic}$	Non-Adjacent Channel Crosstalk – VidMic	f = 30MHz, R_L = 50Ω See Figure 22	V_{AV} = 3.0V V_{Bus} = 0V		-35		dB
Video Buffer Path							
t_{VidEn}	Turn-On Time VidEn or Shdn to VideoOut	$V_{VideoIn}$ = 0.5V R_S = 37.5Ω	V_{AV} = 3.0V V_{Bus} = 0V		325		µs
t_{VidDis}	Turn-Off Time VidEn or Shdn to VideoOut	$V_{VideoIn}$ = 0.5V R_S = 37.5Ω	V_{AV} = 3.0V V_{Bus} = 0V		20		ns
A_{V6dB}	Voltage Gain	R_S = 37.5Ω; AC Coupled into 150Ω	V_{AV} = 3.0 to 4.3V		6		dB
BW_{1dB}	-1db Bandwidth	See Figure 13, Figure 26	V_{AV} = 3.0V V_{Bus} = 5.0V		8		MHz
BW_{3dB}	-3db Bandwidth	See Figure 13, Figure 26	V_{AV} = 3.0V V_{Bus} = 5.0V		9		MHz
F_{SB}	Attenuation	R_S = 37.5Ω; AC Coupled into 150Ω; f=27MHz Referenced to 100kHz, VideoIn = 0dBm	V_{AV} = 3.0V V_{Bus} = 5.0V		-42		dB
$PSRR_{Video}$	Power Supply Rejection Ratio	See Figure 25	V_{AV} = 3.3V V_{Bus} = 0V		-40		dB
$OIRR_{VidOut}$	Off-Isolation – Video Out	See Figure 27	V_{AV} = 3.0V V_{Bus} = 4.25V		-50		dB
dG	Differential Gain	R_S = 37.5Ω; AC Coupled into 150Ω See Figure 28	V_{AV} = 3.0V V_{Bus} = 0V		.5		%
dϕ	Differential Phase	R_S = 37.5Ω; AC Coupled into 150Ω See Figure 28	V_{AV} = 3.0V V_{Bus} = 0V		.9		°
SNR	Signal-to-Noise Ratio	NTSC-7 Weighting, f=100kHz to 4.2MHz See Figure 28	V_{AV} = 3.0V V_{Bus} = 0V		75		dB

USB High-Speed-Related AC Electrical Characteristics

All typical value are for V_{AV} = 3.0V, V_{BUS} = 4.25V, and at 25ºC unless otherwise specified.

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C			Unit
				Min.	Typ.	Max.	
$t_{SK(o)}$	Channel-to-Channel Skew[5]	$t_R = t_F$ = 75ps (10-90%) at 240MHz; C_L = 5pF, R_L = 50Ω	V_{AV} = 3.0V V_{Bus} = 4.25V		50		ps
$t_{SK(P)}$	Skew of Opposite Transitions of the Same Output [5]	$t_R = t_F$ = 75ps (10-90%) at 240MHz; C_L = 5pF, R_L = 50Ω	V_{AV} = 3.0V V_{Bus} = 4.25V		50		ps
t_J	Total Jitter[5]	$t_R = t_F$ = 75ps (10-90%) at 480Mbps; C_L = 5pF, R_L = 50Ω; (PRBS = 2^{15} - 1)	V_{AV} = 3.0V V_{Bus} = 4.25V		100		ps

Note:

5. Guaranteed by characterization, not production tested.

Capacitance

Symbol	Parameter	Conditions	V_{AV}/V_{Bus} (V)	T_A = - 40°C to +85°C	Unit
				Typical	
$C_{IN\ (CNTRL)}$	Control Pin Input Capacitance (S0, S1, /Shdn, VidEn)	V_{BIAS} = 0V	V_{AV} = 3.0V V_{Bus} = 4.25V	2.75	pF
$C_{ON\ (D+/R,\ D-/L)}$	$C_{D+/R,\ D-/L}$ Source Port On Capacitance	V_{BIAS} = 0.4V; f = 1MHz, 240Mhz See Figure 24	V_{AV} = 3.0V V_{Bus} = 4.25V S1 = 0V C_{ONUSB}	7.6	pF
		V_{BIAS} = 0V; f = 1MHz, 240Mhz See Figure 24	V_{AV} = 3.0V V_{Bus} = 4.25V S1 = 3.0V $C_{ONAudio}$	9.7	
$C_{OFF(D+,\ D-)}$	USB Source Off Capacitance	V_{BIAS} = 0.4V; f = 1MHz, 240Mhz See Figure 23	V_{AV} = 3.0V V_{Bus} = 4.25V S1 = 3.0V$_o$	1.5	pF
$C_{OFF(R/L)}$	Audio Source Off Capacitance	V_{BIAS} = 0V; f = 1MHz See Figure 23	V_{AV} = 3.0V V_{Bus} = 4.25V S1 = 0V	3.0	pF
$C_{ON(VidMic)}$	VidMic Source On Capacitance	V_{BIAS} = 0V; f = 1MHz See Figure 24	V_{AV} = 3.0V V_{Bus} = 4.25V	10 (15 Max.)	pF
$C_{OFF(MicOut)}$	MicOut Source Off Capacitance	V_{BIAS} = 0V; f = 1MHz See Figure 23	V_{AV} = 3.0V V_{Bus} = 4.25V	3.0	pF
$C_{OFF(VidOut)}$	VidOut Source Off Capacitance	V_{BIAS} = 0V; f = 1MHz See Figure 23	V_{AV} = 3.0V V_{Bus} = 4.25V	2.7	pF

Typical Characteristics

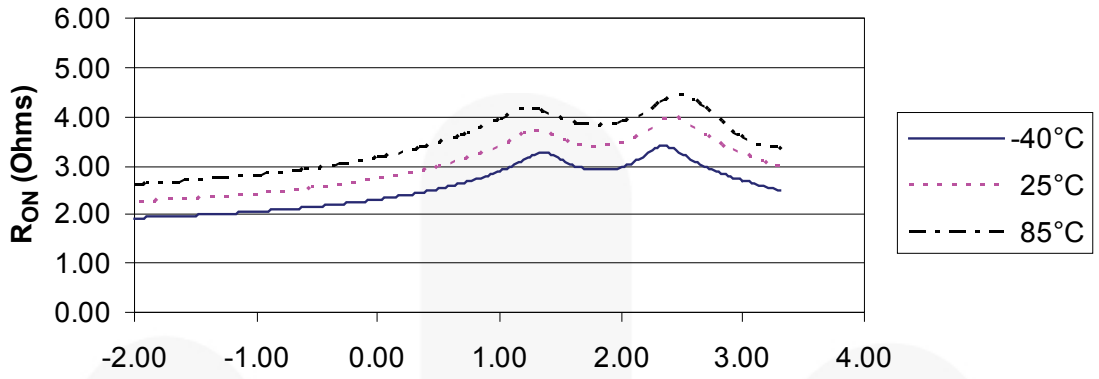


Figure 4. $R_{ONAudio}$, V_{IN}, V_{AV}= 3.0V, V_{Bus} = 0V

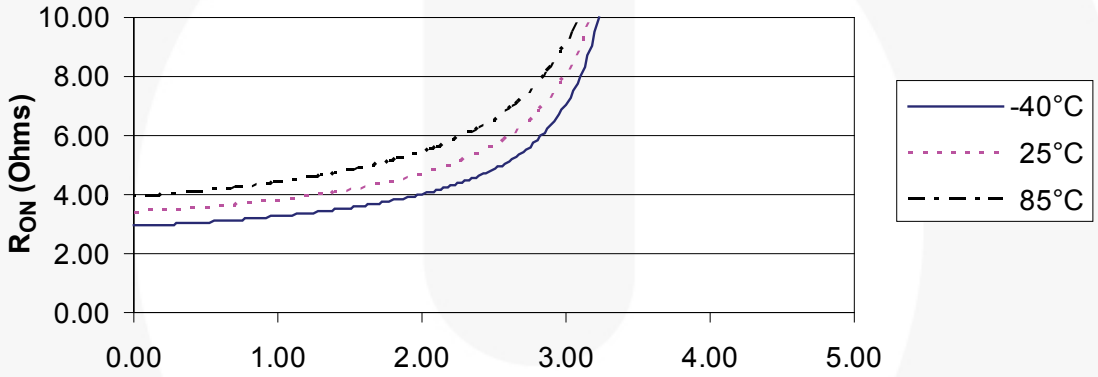


Figure 5. R_{ONUSB}, V_{IN}, V_{AV}= 3.0V, V_{Bus} = 4.25V

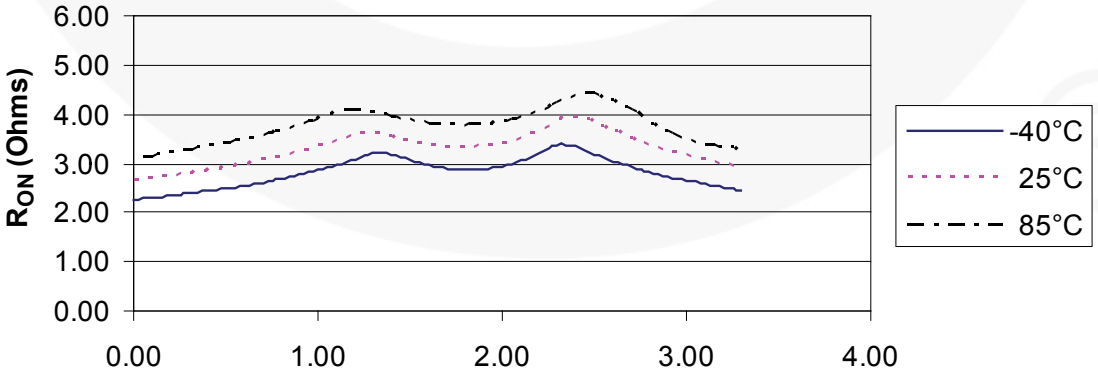


Figure 6. R_{ONVid}, V_{IN}, V_{AV}= 3.0V, V_{Bus} = 0V

Typical Characteristics (Continued)

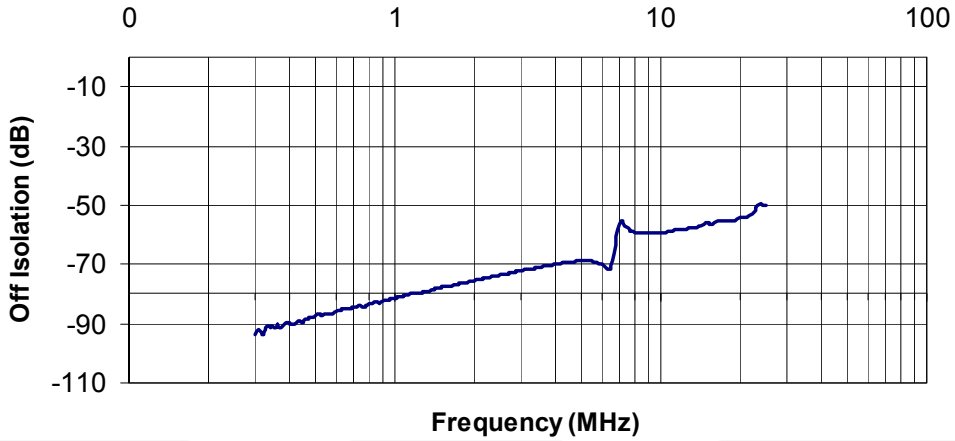


Figure 7. Off Isolation USB (OIRRUSB), V_{AV} = 3.0V, V_{Bus} = 4.25V

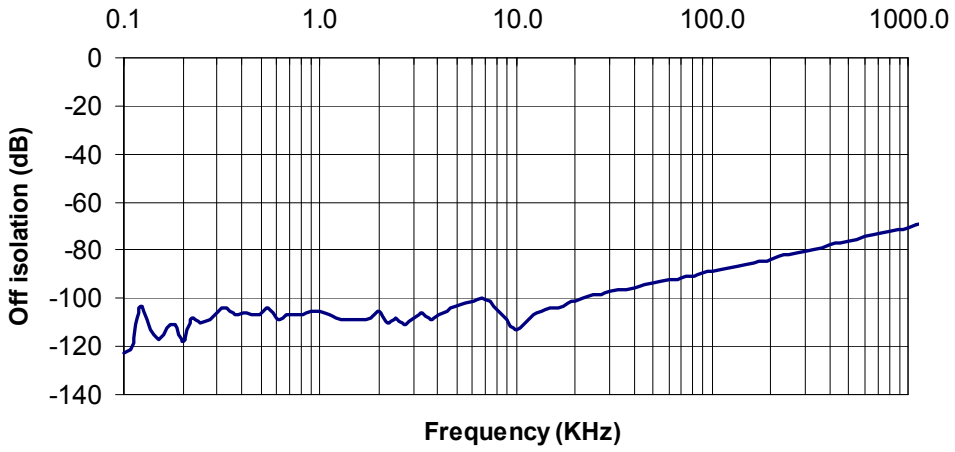


Figure 8. Off Isolation Audio (OIRRA), V_{AV} = 3.0V, V_{Bus} = 4.25V

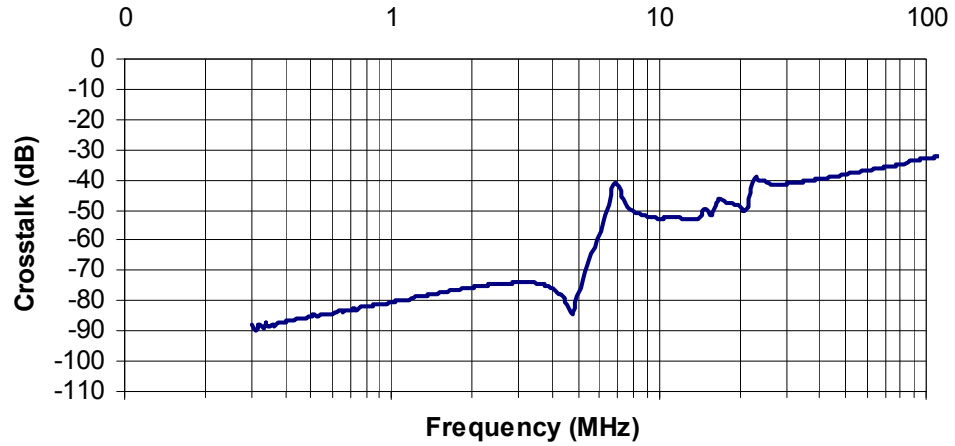


Figure 9. Non-Adjacent Crosstalk - USB, V_{AV}= 3.0V, V_{Bus} = 4.25V

Typical Characteristics (Continued)

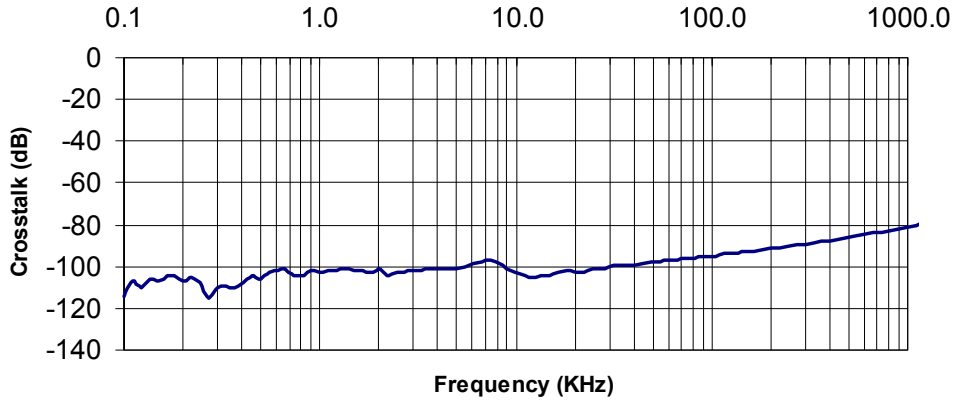


Figure 10. Non-Adjacent Crosstalk - Audio, V_{AV}= 3.0V, V_{Bus} = 4.25V

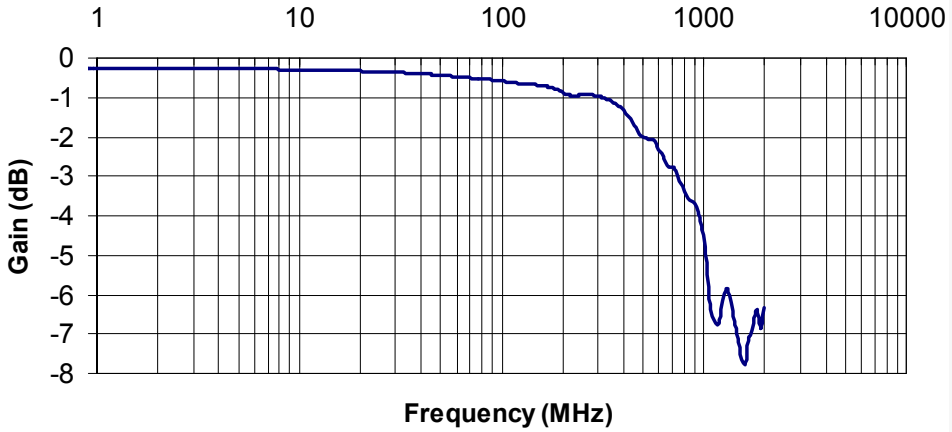


Figure 11. Bandwidth Gain vs. Frequency - USB, C_L = 0pF, V_{AV}= 3.0V, V_{Bus} = 4.25V

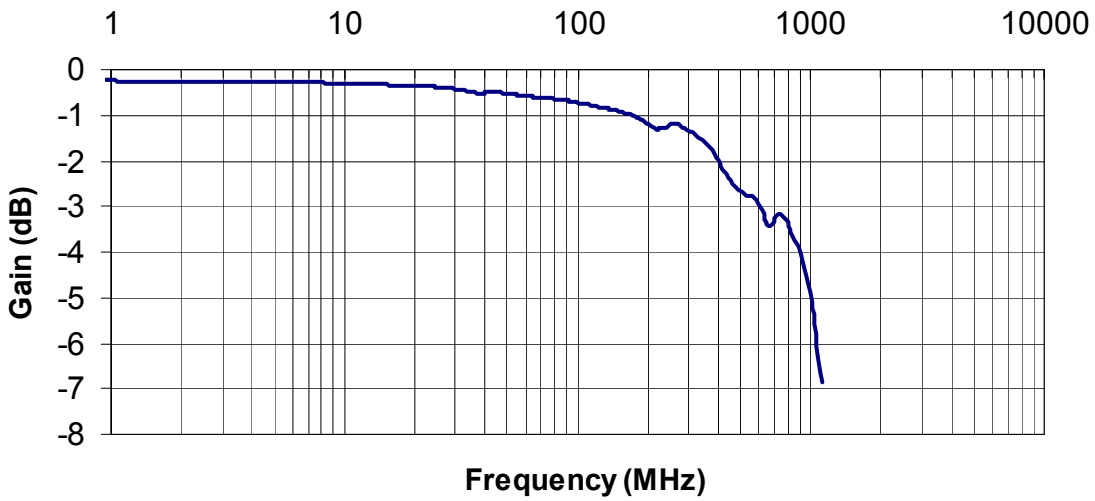


Figure 12. Bandwidth Gain vs. Frequency – VidMic, C_L = 0pF, V_{AV}= 3.0V, V_{Bus} = 0V

Typical Characteristics (Continued)

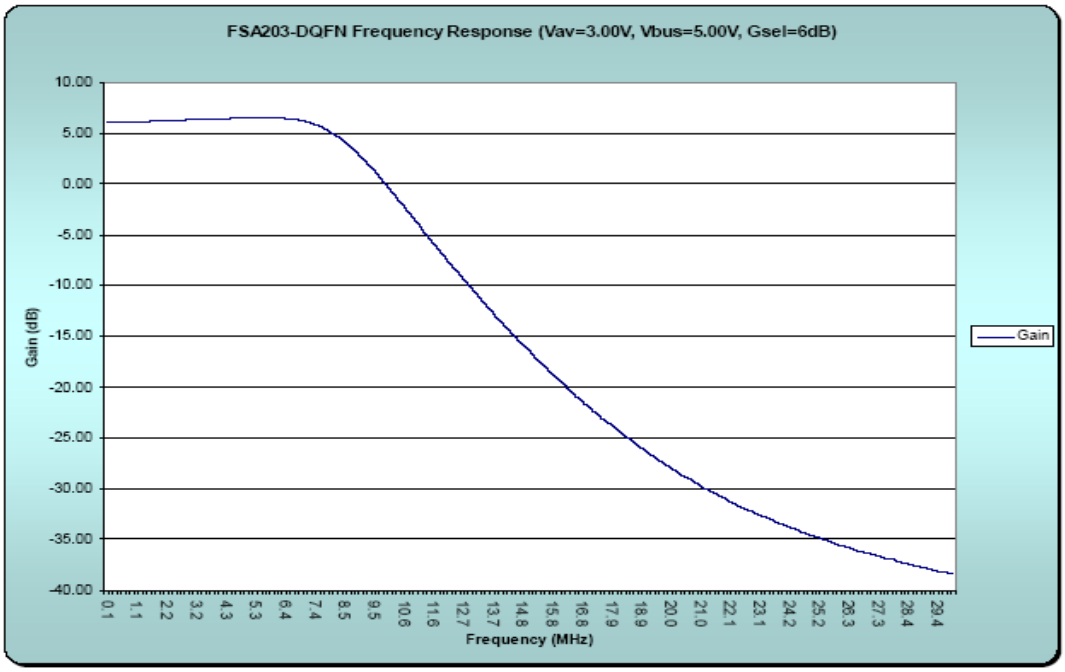


Figure 13. Video Buffer Frequency Response

Test Diagrams

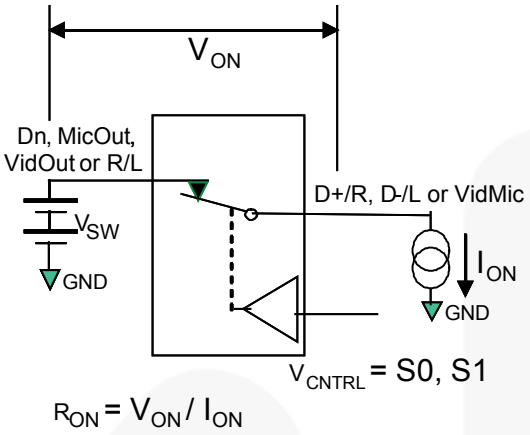


Figure 14. On Resistance

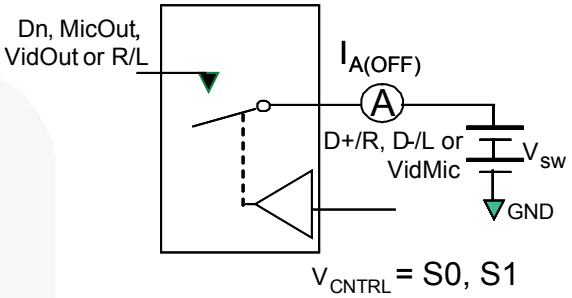


Figure 15. Off Leakage

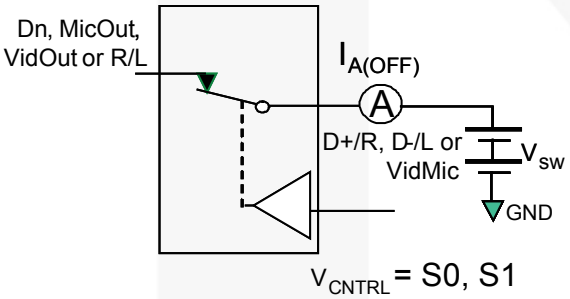
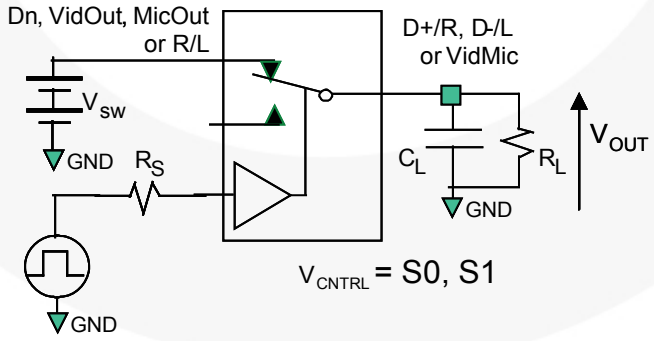


Figure 16. On Leakage



R_L, R_S, and C_L are functions of the application environment (see AC Tables for specific values)
C_L includes test fixture and stray capacitance

Figure 17. AC Test Circuit Load

Test Diagrams (Continued)

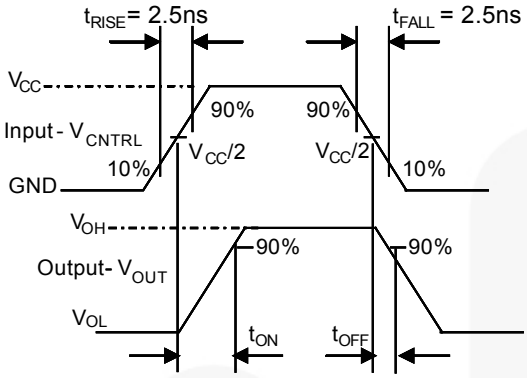


Figure 18. Turn-On / Turn-Off Waveforms

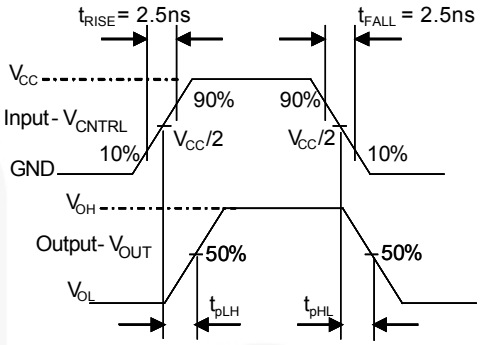


Figure 19. Switch Propagation Delay Waveforms

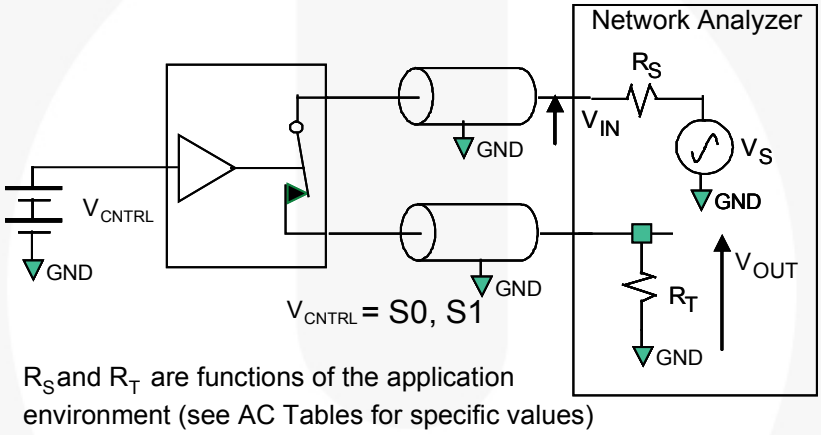


Figure 20. Switch Bandwidth

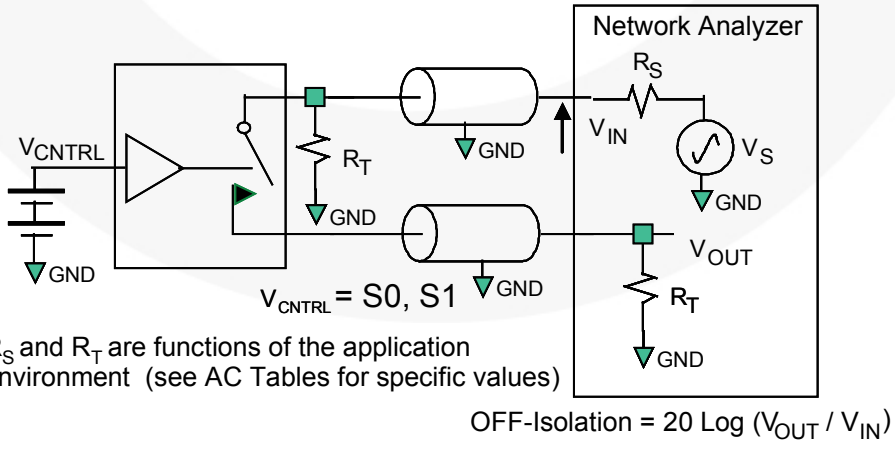


Figure 21. Channel Off Isolation

Test Diagrams (Continued)

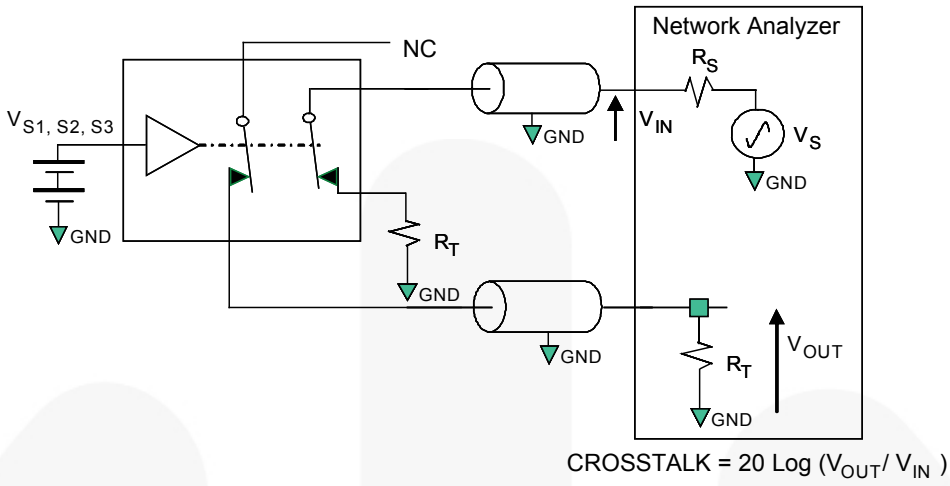


Figure 22. Non-Adjacent Channel-to-Channel Crosstalk

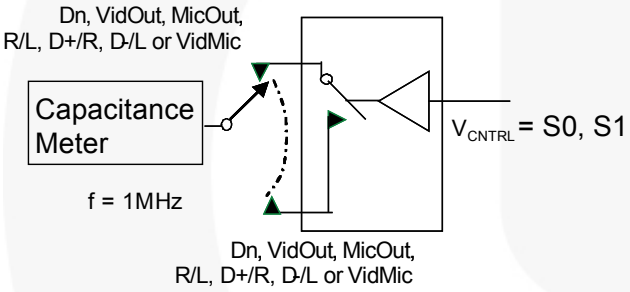


Figure 23. Channel Off Capacitance

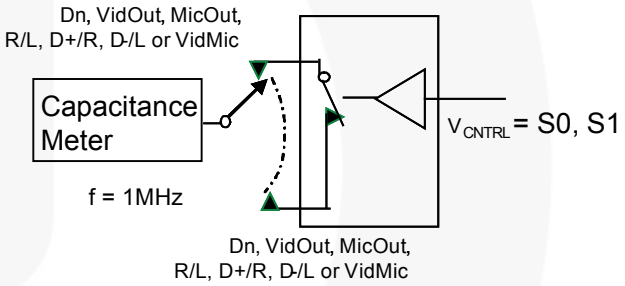


Figure 24. Channel On Capacitance

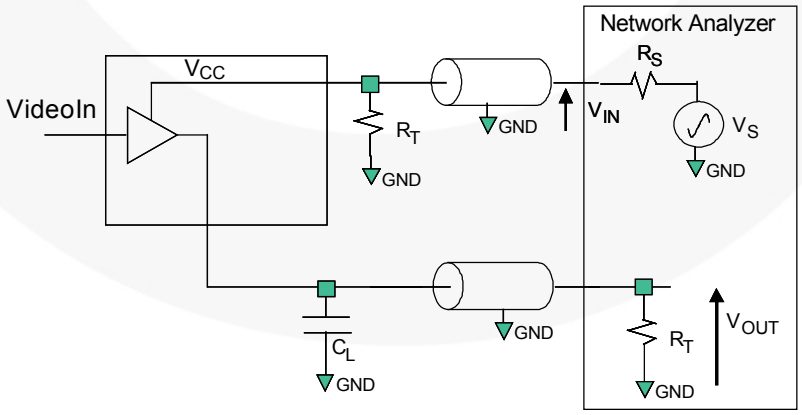
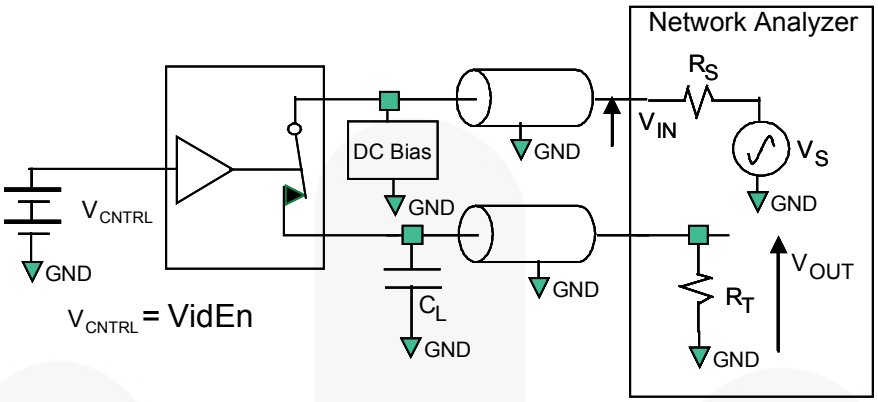


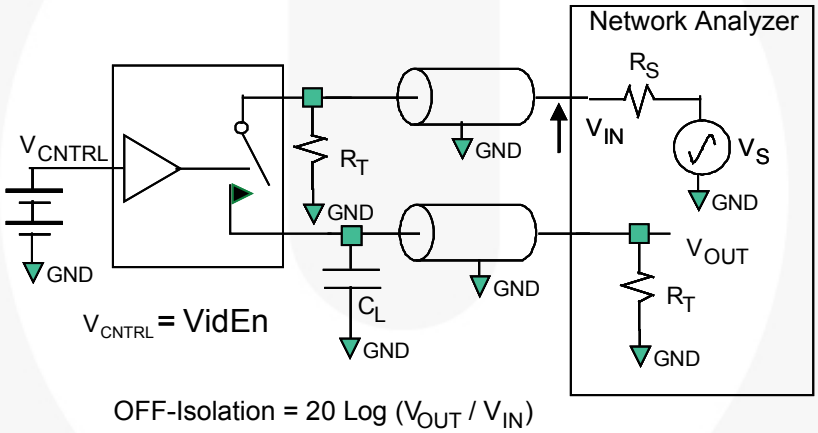
Figure 25. PSRR

Test Diagrams (Continued)



R_S and R_T are functions of the application environment (see AC Tables for specific values)

Figure 26. Video Amplifier Bandwidth



OFF-Isolation = 20 Log (V_{OUT} / V_{IN})

Figure 27. Video Amplifier Off Isolation

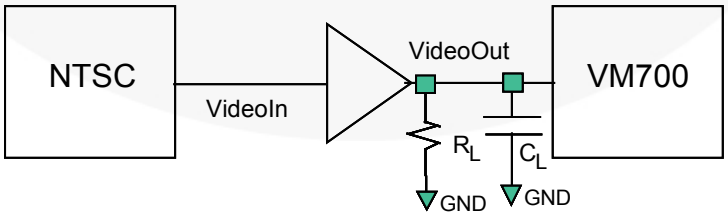
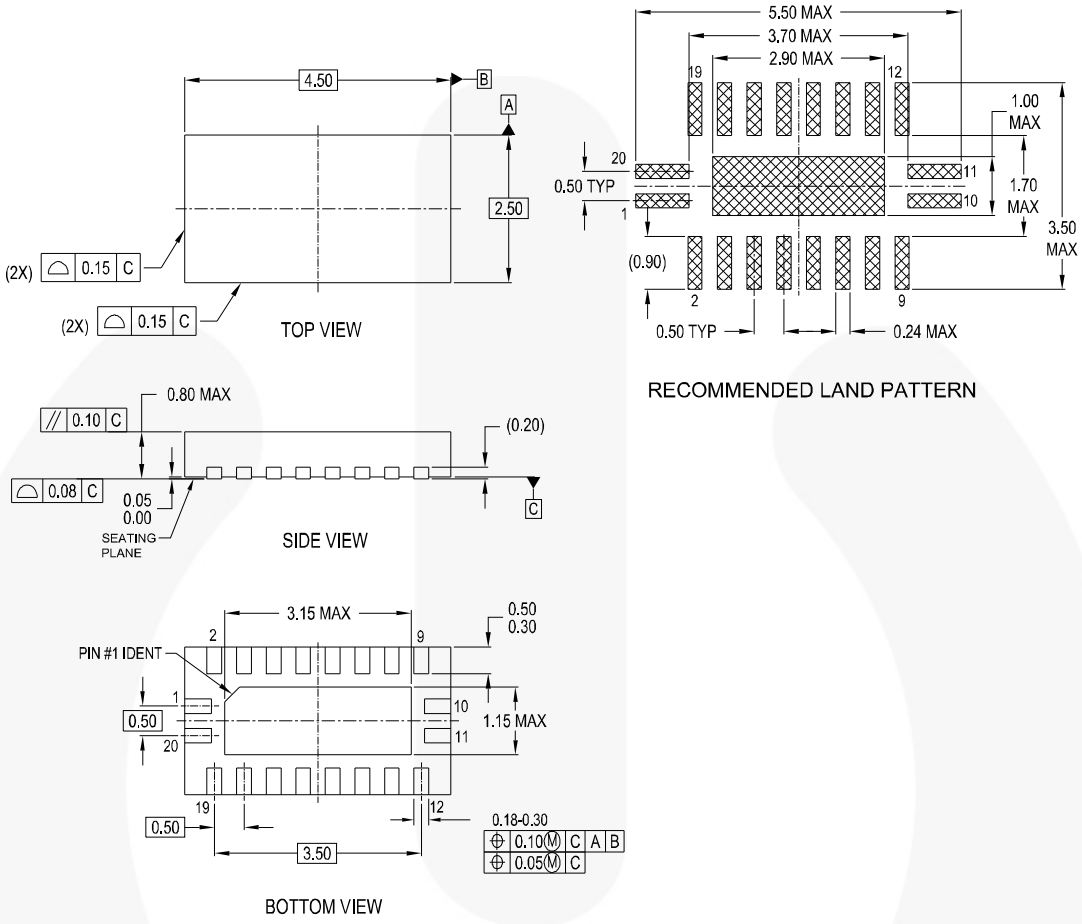


Figure 28. Video Amplifier Differential Phase, Gain & SNR

Physical Dimensions



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A. CONFORMS TO JEDEC REGISTRATION MO-241, VARIATION AC

B. DIMENSIONS ARE IN MILLIMETERS.

C. DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994

MLP020BrevA

Figure 29. 20-Lead Depopulated very thin Quad Flat-pack No leads (DQFN)

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