19-2365; Rev 0; 4/02

MAXIM

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

General Description

The MAX4784 is a low on-resistance, low-voltage, quad 2:1 analog multiplexer that operates from a single +1.6V to +3.6V supply. This device has fast switching speeds (t_{ON} = 25ns, t_{OFF} = 10ns max), handles Rail-to-Rail® analog signals, and consumes less than 1µW of quiescent power.

When powered from a +3V supply, the MAX4784 features low 1Ω (max) on-resistance (R_{ON}), with 0.15Ω (max) R_{ON} matching and 0.2Ω (max) R_{ON} flatness. The digital logic input is +1.8V CMOS-logic compatible when using a single +3V supply.

The MAX4784 is available in 16-pin TSSOP and 4mm × 4mm QFN packages.

Applications

Power Routing

Battery-Powered Systems

Audio and Video Signal Routing

Low-Voltage Data-Acquisition Systems

Communications Circuits

PCMCIA Cards

Cellular Phones

Modems

Hard Drives

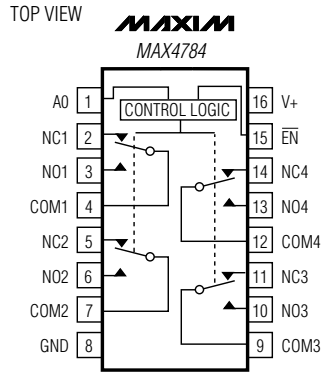
Features

- **Low R_{ON}:**
  1Ω max (+3V Supply)
  3Ω max (+1.8V Supply)
- **0.2Ω max R_{ON} Flatness (+3V Supply)**
- **+1.6V to +3.6V Single-Supply Operation**
- **Available in TSSOP and QFN Packages**
- **High-Current Handling Capacity (150mA Continuous)**
- **+1.8V CMOS Logic Compatible (+3V Supply)**
- **Fast Switching: t_{ON} = 25ns, t_{OFF} = 10ns**

Ordering Information

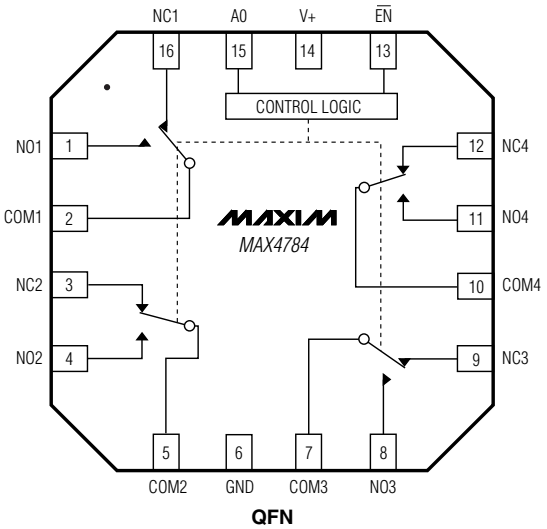
PART	TEMP RANGE	PIN-PACKAGE
MAX4784EGE	-40°C to +85°C	16 QFN
MAX4784EUE	-40°C to +85°C	16 TSSOP

Pin Configurations/Functional Diagrams/Truth Table



TSSOP

$\overline{EN}$	A0	ON SWITCH
1	X	NONE
0	0	COM1-NC1 COM2-NC2 COM3-NC3 COM4-NC4
0	1	COM1-NO1 COM2-NO2 COM3-NO3 COM4-NO4



QFN

Rail-to-Rail is a registered trademark of Nippon Motorola, Ltd.

For pricing, delivery, and ordering information, please contact Maxim/Dallas Direct! at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

ABSOLUTE MAXIMUM RATINGS

Voltages Referenced to GND
V+, A0, $\overline{EN}$ .....-0.3V to +4V
COM_, NO_, NC_ (Note 1) .....-0.3V to (V+ + 0.3V)
Continuous Current COM_ , NO_, NC_ .....±150mA
Peak Current COM_, NO_, NC_
(pulsed at 1ms 10% duty cycle).....±300mA

Continuous Power Dissipation (T_A = +70°C)
16-Pin QFN (derate 18.5mW/°C above +70°C) 1481mW
16-Pin TSSOP (derate 9.4mW/°C above +70°C) 755mW
Operating Temperature Range .....-40°C to +85°C
Maximum Junction Temperature .....+150°C
Storage Temperature Range .....-65°C to +150°C

Note 1: Signals on COM_, NO_, or NC_ exceeding V+ or GND are clamped by internal diodes. Limit forward current to maximum current rating.

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS—Single +3V Supply

(V+ = +2.7V to +3.6V, V_{IH} = +1.4V, V_{IL} = +0.5V, T_A = T_{MIN} to T_{MAX}, unless otherwise specified. Typical values are at V+ = +3.0V, T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS	T_A	MIN	TYP	MAX	UNITS
ANALOG SWITCH							
Analog Signal Range	$V_{COM\_}$, $V_{NO\_}$, $V_{NC\_}$			0		V+	V
On-Resistance (Note 4)	R_{ON}	V+ = 2.7V, $I_{COM\_}$ = 100mA, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V	+25°C		0.7	1	Ω
			T_{MIN} to T_{MAX}			1.2	
On-Resistance Match Between Channels (Notes 4, 5)	ΔR_{ON}	V+ = 2.7V, $I_{COM\_}$ = 100mA, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V	+25°C		0.1	0.15	Ω
			T_{MIN} to T_{MAX}			0.2	
On-Resistance Flatness (Note 6)	$R_{FLAT(ON)}$	V+ = 2.7V, $I_{COM\_}$ = 100mA, $V_{NO\_}$ or $V_{NC\_}$ = 1V, 1.5V, 2V	+25°C		0.1	0.2	Ω
			T_{MIN} to T_{MAX}			0.3	
NO_ or NC_ Off-Leakage Current (Note 7)	$I_{NO\_(OFF)}$, $I_{NC\_(OFF)}$	V+ = 3.6V, $V_{COM\_}$ = 0.3V, 3.3V, $V_{NO\_}$ or $V_{NC\_}$ = 3.3V, 0.3V	+25°C	-1	±0.002	+1	nA
			T_{MIN} to T_{MAX}	-5		+5	
COM_ Off-Leakage Current (Note 7)	$I_{COM\_(OFF)}$	V+ = 3.6V, $V_{COM\_}$ = 0.3V, 3.3V, $V_{NO\_}$ or $V_{NC\_}$ = 3.3V, 0.3V, or floating	+25°C	-1	±0.002	+1	nA
			T_{MIN} to T_{MAX}	-5		+5	
COM_ On-Leakage Current (Note 7)	$I_{COM\_(ON)}$	V+ = 3.6V, $V_{COM\_}$ = 3.3V, 0.3V, $V_{NO\_}$ or $V_{NC\_}$ = 3.3V, 0.3V, or floating	+25°C	-2	±0.002	+2	nA
			T_{MIN} to T_{MAX}	-10		+10	

ELECTRICAL CHARACTERISTICS—Single +3V Supply (continued)

(V+ = +2.7V to +3.6V, V_{IH} = +1.4V, V_{IL} = +0.5V, T_A = T_{MIN} to T_{MAX}, unless otherwise specified. Typical values are at V+ = +3.0V, T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS	T_A	MIN	TYP	MAX	UNITS
SWITCH DYNAMIC CHARACTERISTICS							
Turn-On Time	t_{ON}	$V_{NO\_}$, $V_{NC\_}$ = 1.5V, R_L = 50Ω, C_L = 35pF, Figure 1	+25°C		20	25	ns
			T_{MIN} to T_{MAX}			30	
Turn-Off Time	t_{OFF}	$V_{NO\_}$, $V_{NC\_}$ = 1.5V, R_L = 50Ω, C_L = 35pF, Figure 1	+25°C		8	10	ns
			T_{MIN} to T_{MAX}			18	
Break-Before-Make (Note 8)	t_{BBM}	$V_{NO\_}$, $V_{NC\_}$ = 1.5V, R_L = 50Ω, C_L = 35pF, Figure 2	+25°C		7		ns
			T_{MIN} to T_{MAX}	1			
Charge Injection	Q	V_{GEN} = 0, R_{GEN} = 0, C_L = 1.0nF, Figure 3	+25°C		5		pC
NO_ or NC_ Off-Capacitance	C_{OFF}	f = 1MHz, Figure 4	+25°C		33		pF
COM_ Off-Capacitance	$C_{COM\_(OFF)}$	f = 1MHz, Figure 4	+25°C		60		pF
COM_ On-Capacitance	$C_{COM\_(ON)}$	f = 1MHz, Figure 4	+25°C		85		pF
-3dB On-Channel Bandwidth	BW	Signal = 0, R_{IN} = R_{OUT} = 50Ω, C_L = 5pF, Figure 5			123		MHz
Off-Isolation (Note 9)	V_{ISO}	f = 1MHz, $V_{COM\_}$ = $1V_{P-P}$, R_L = 50Ω, C_L = 5pF, Figure 5	+25°C		-67		dB
Crosstalk (Note 10)	V_{CT}	f = 1MHz, $V_{COM\_}$ = $1V_{P-P}$, R_L = 50Ω, C_L = 5pF, Figures 4, 5	+25°C		-95		dB
Total Harmonic Distortion	THD	f = 20Hz to 20kHz, $V_{COM\_}$ = $2V_{P-P}$, R_L = 32Ω	+25°C		0.008		%
LOGIC INPUT (A0, $\overline{EN}$)							
Input Logic High	V_{IH}			1.4			V
Input Logic Low	V_{IL}					0.5	V
Input Leakage Current	I_{IN}	$V_{\overline{EN}}$ = 0 or +3.6V, V_{A0} = 0 or +3.6V		-1	0.005	+1	µA
POWER SUPPLY							
Power-Supply Range	V+			1.6		3.6	V
Positive Supply Current	I+	V+ = 3.6V, $\overline{EN}$, A0 = 0 or V+, all channels on or off	T_{MIN} to T_{MAX}			2	µA

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

ELECTRICAL CHARACTERISTICS—Single +1.8V Supply

(V+ = +1.8V, V_{IH} = +1.0V, V_{IL} = +0.4V, T_A = T_{MIN} to T_{MAX}, unless otherwise specified. Typical values are at T_A = +25°C.) (Notes 2, 3)

PARAMETER	SYMBOL	CONDITIONS	T_A	MIN	TYP	MAX	UNITS
ANALOG SWITCH							
Analog Signal Range	$V_{COM\_}$, $V_{NO\_}$, $V_{NC\_}$			0		V+	V
On-Resistance	R_{ON}	$I_{COM\_}$ = 10mA, $V_{NO\_}$ or $V_{NC\_}$ = 1.0V	+25°C		2	3	Ω
			T_{MIN} to T_{MAX}			5	
NO_ or NC_ Off-Leakage Current (Note 7)	$I_{NO\_(OFF)}$, $I_{NC\_(OFF)}$	$V_{COM\_}$ = 0.3V, 1.5V, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V, 0.3V	+25°C	-1		+1	nA
			T_{MIN} to T_{MAX}	-5		+5	
COM_ Off-Leakage Current (Note 7)	$I_{COM\_(OFF)}$	$V_{COM\_}$ = 0.3V, 1.5V, $V_{NO\_}$ or $V_{NC\_}$ = 1.5V, 0.3V	+25°C	-1		+1	nA
			T_{MIN} to T_{MAX}	-5		+5	
COM_ On-Leakage Current (Note 7)	$I_{COM\_(ON)}$	$V_{COM\_}$ = 0.3V, 1.5V, $V_{NO\_}$ or $V_{NC\_}$ = 0.3V, 1.5V, or floating	+25°C	-2		+2	nA
			T_{MIN} to T_{MAX}	-10		+10	
SWITCH DYNAMIC CHARACTERISTICS							
Turn-On Time	t_{ON}	$V_{NO\_}$, $V_{NC\_}$ = 1.0V, R_L = 50Ω, C_L = 35pF, Figure 1	+25°C		25	30	ns
			T_{MIN} to T_{MAX}			35	
Turn-Off Time	t_{OFF}	$V_{NO\_}$, $V_{NC\_}$ = 1.0V, R_L = 50Ω, C_L = 35pF, Figure 1	+25°C		10	15	ns
			T_{MIN} to T_{MAX}			20	
Break-Before-Make (Note 8)	t_{BBM}	$V_{NO\_}$, $V_{NC\_}$ = 1.0V, R_L = 50Ω, C_L = 35pF, Figure 2	+25°C		10		ns
			T_{MIN} to T_{MAX}	1			
Charge Injection	Q	V_{GEN} = 0, R_{GEN} = 0, C_L = 1nF, Figure 3	+25°C		5		pC

ELECTRICAL CHARACTERISTICS—Single +1.8V Supply (continued)

(V+ = +1.8V, V_{IH} = +1.0V, V_{IL} = +0.4V, T_A = T_{MIN} to T_{MAX}, unless otherwise specified. Typical values are at T_A = +25°C.) (Notes 2, 3)

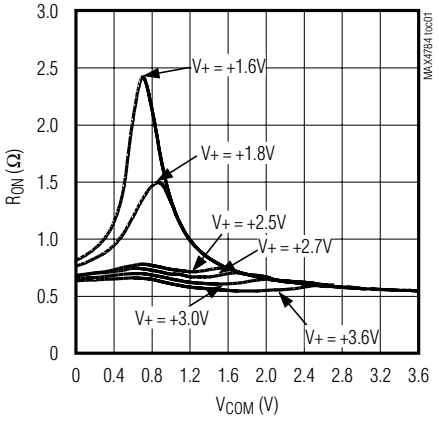
PARAMETER	SYMBOL	CONDITIONS	T_A	MIN	TYP	MAX	UNITS
LOGIC INPUT (A0, $\overline{EN}$)							
Input Logic High	V_{IH}			1			V
Input Logic Low	V_{IL}					0.4	V
Input Leakage Current	I_{IN}	$V_{\overline{EN}}$ = 0 or +3.6V, V_{A0} = 0 or +3.6V		-1		+1	µA

Note 2: The algebraic convention, where the most negative value is a minimum and the most positive value is a maximum, is used in this data sheet.
Note 3: -40°C specifications are guaranteed by design.
Note 4: R_{ON} and ΔR_{ON} matching specifications for QFN packaged parts are guaranteed by design.
Note 5: $\Delta R_{ON} = R_{ON(MAX)} - R_{ON(MIN)}$.
Note 6: Flatness is defined as the difference between the maximum and the minimum value of on-resistance as measured over the specified analog signal ranges.
Note 7: Leakage parameters are 100% tested at T_A = +85°C, and guaranteed by correlation over the full rated temperature range.
Note 8: Guaranteed by design.
Note 9: Off-Isolation = $20\log_{10}(V_{COM\_}/V_{NO\_})$, $V_{COM\_}$ = output, $V_{NO\_}$ = input to off switch.
Note 10: Between two switches.

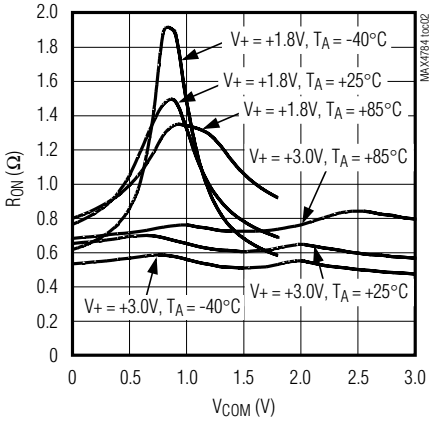
Typical Operating Characteristics

(T_A = +25°C, unless otherwise noted.)

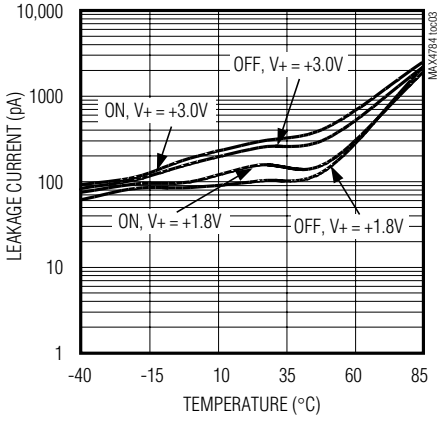
ON-RESISTANCE vs. V_{COM}



ON-RESISTANCE vs. V_{COM} AND TEMPERATURE



ON/OFF-LEAKAGE CURRENT vs. TEMPERATURE

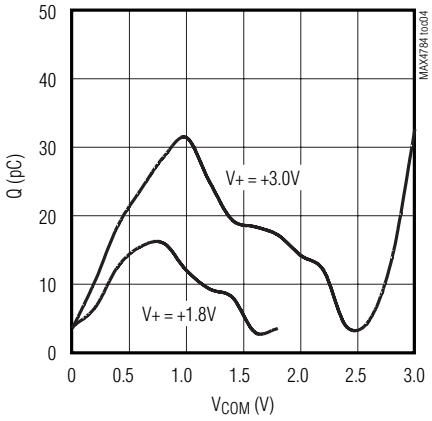


1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

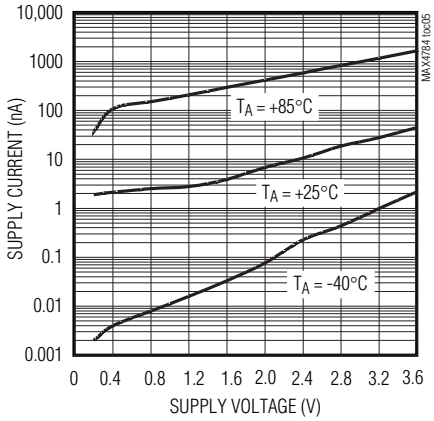
Typical Operating Characteristics (continued)

(T_A = +25°C, unless otherwise noted.)

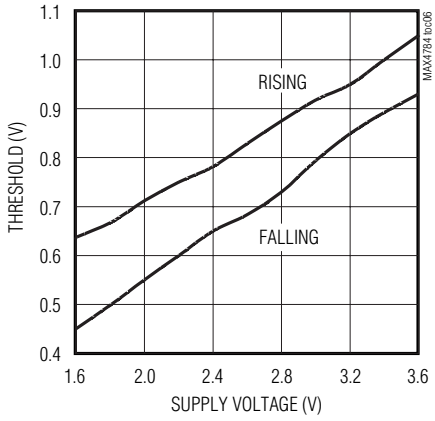
CHARGE INJECTION vs. V_{COM}



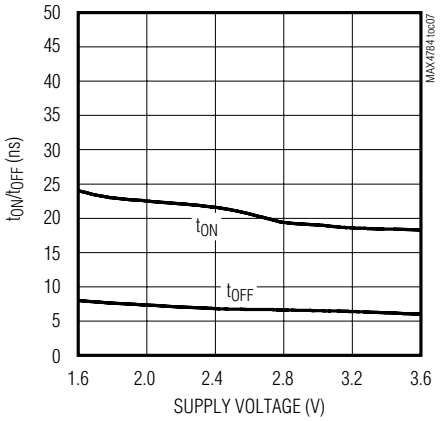
SUPPLY CURRENT vs. SUPPLY VOLTAGE AND TEMPERATURE



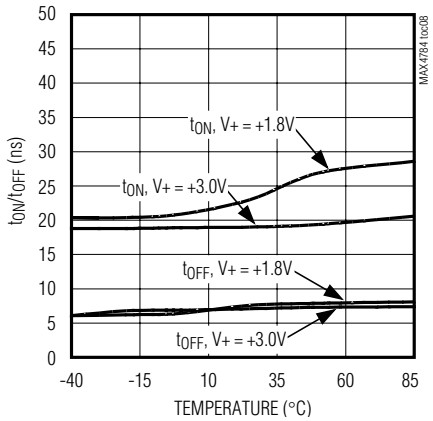
LOGIC-LEVEL THRESHOLD vs. SUPPLY VOLTAGE



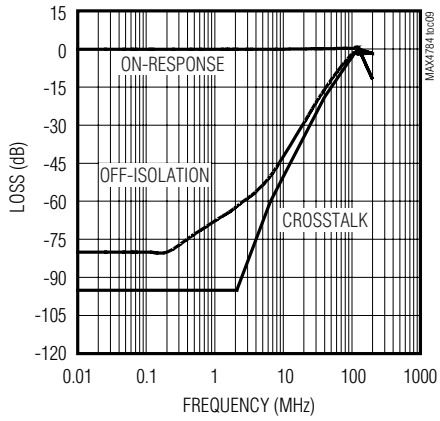
TURN-ON/OFF TIME vs. SUPPLY VOLTAGE



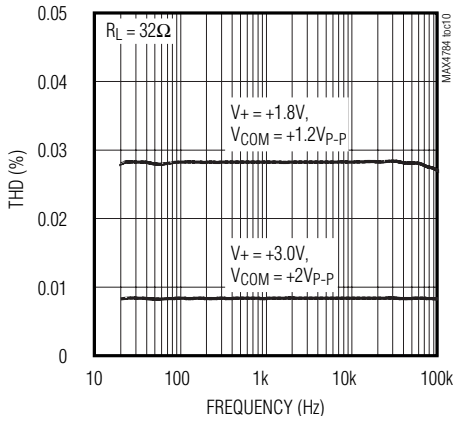
TURN-ON/OFF TIMES vs. TEMPERATURE



FREQUENCY RESPONSE



TOTAL HARMONIC DISTORTION vs. FREQUENCY



Pin Description

PIN		NAME	FUNCTION
TSSOP	QFN		
1	15	A0	Address Input
2	16	NC1	Normally Closed Terminal
3	1	NO1	Normally Open Terminal
4	2	COM1	Analog Switch Common Terminal
5	3	NC2	Normally Closed Terminal
6	4	NO2	Normally Open Terminal
7	5	COM2	Analog Switch Common Terminal
8	6	GND	Ground
9	7	COM3	Analog Switch Common Terminal
10	8	NO3	Normally Open Terminal
11	9	NC3	Normally Closed Terminal
12	10	COM4	Analog Switch Common Terminal
13	11	NO4	Normally Open Terminal
14	12	NC4	Normally Closed Terminal
15	13	$\overline{EN}$	Enable. Connect to GND for normal operation. Connect to logic-level high to turn all switches off.
16	14	V+	Positive Supply Voltage

Detailed Description

The MAX4784 is a low 1Ω max (at V+ = +3V) on-resistance, low-voltage, quad 2:1 analog multiplexer/demultiplexer that operates from a +1.6V to +3.6V single supply. CMOS switch construction allows switching analog signals that are within the supply voltage range (GND to V+).

When powered from a +3V supply, the 1Ω max R_{ON} allows high continuous currents to be switched in a variety of applications.

Applications Information

Proper power-supply sequencing is recommended for all CMOS devices. Do not exceed the absolute maximum ratings, because stresses beyond the listed ratings can cause permanent damage to the devices. Always sequence V+ on first, followed by NO_, NC_, or COM_.

Although it is not required, power-supply bypassing improves noise margin and prevents switching noise propagation from the V+ supply to other components. A 0.1µF capacitor, connected from V+ to GND, is adequate for most applications.

Logic Inputs

The MAX4784 logic inputs can be driven up to +3.6V regardless of the supply voltage. For example, with a +1.8V supply, A0 and $\overline{EN}$ may be driven low to GND and high to +3.6V. Driving A0 and $\overline{EN}$ rail-to-rail minimizes power consumption. Drive $\overline{EN}$ low to enable the COM_ outputs. When $\overline{EN}$ is high, the COM_ outputs are high impedance.

Analog Signal Levels

Analog signals that range over the entire supply voltage (V+ to GND) can be passed with very little change in on-resistance (see *Typical Operating Characteristics*). The switches are bidirectional, so the NO_, NC_, and COM_ pins can be used as either inputs or outputs.

Layout

High-speed switches require proper layout and design procedures for optimum performance. Reduce stray inductance and capacitance by keeping traces short and wide. Ensure that bypass capacitors are as close to the device as possible. Use large ground planes where possible.

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

Test Circuits/Timing Diagrams

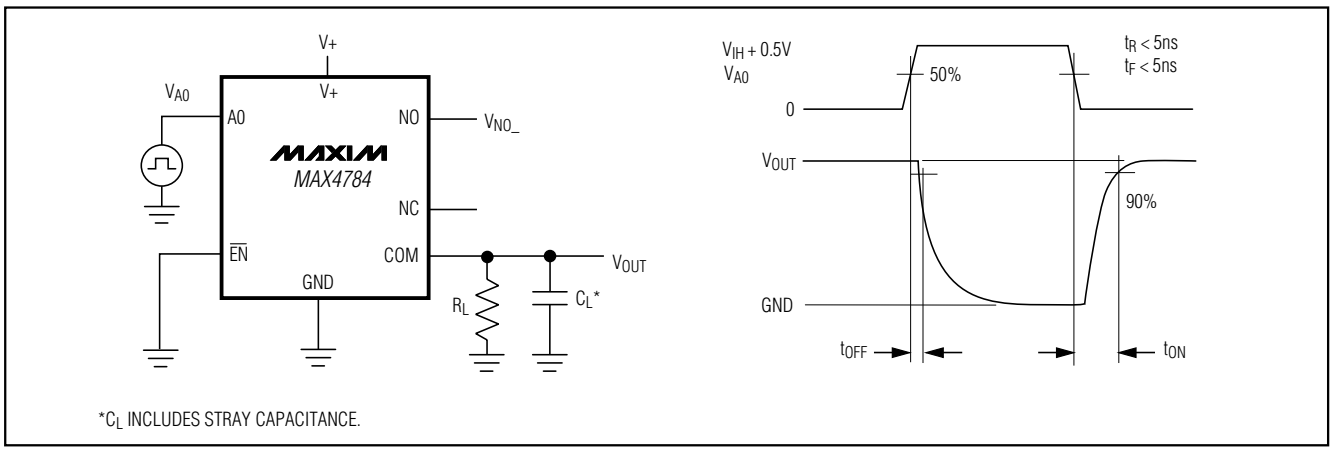


Figure 1. Turn-On and Turn-Off Times

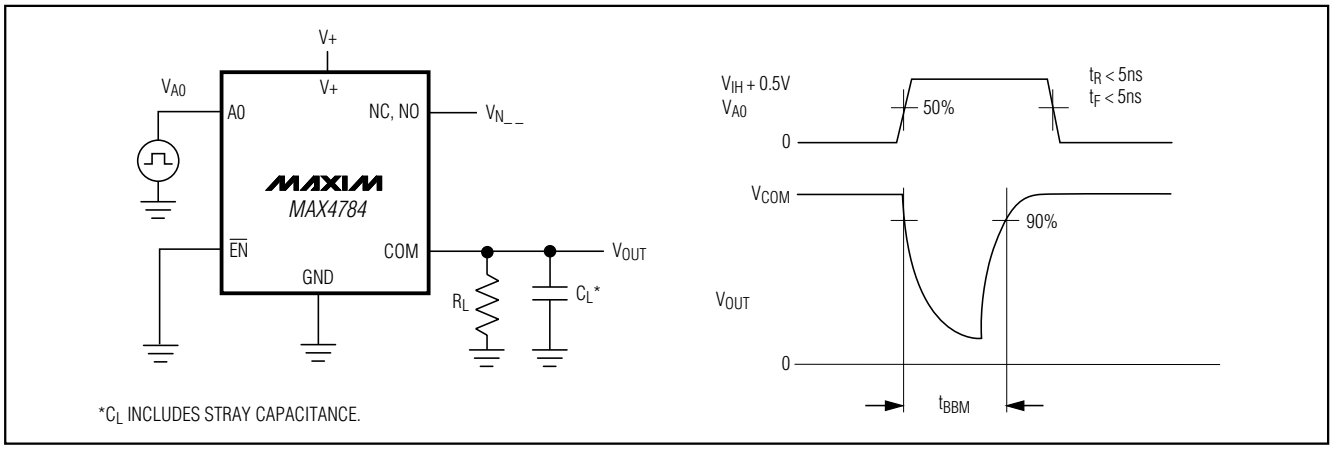


Figure 2. Break-Before-Make Interval

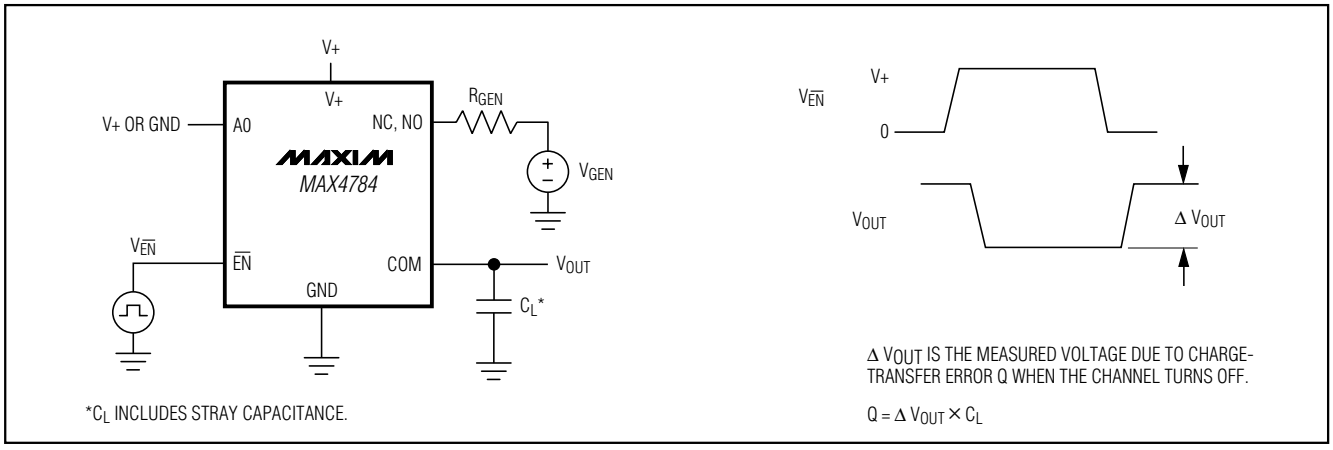


Figure 3. Charge Injection

Test Circuits/Timing Diagrams (continued)

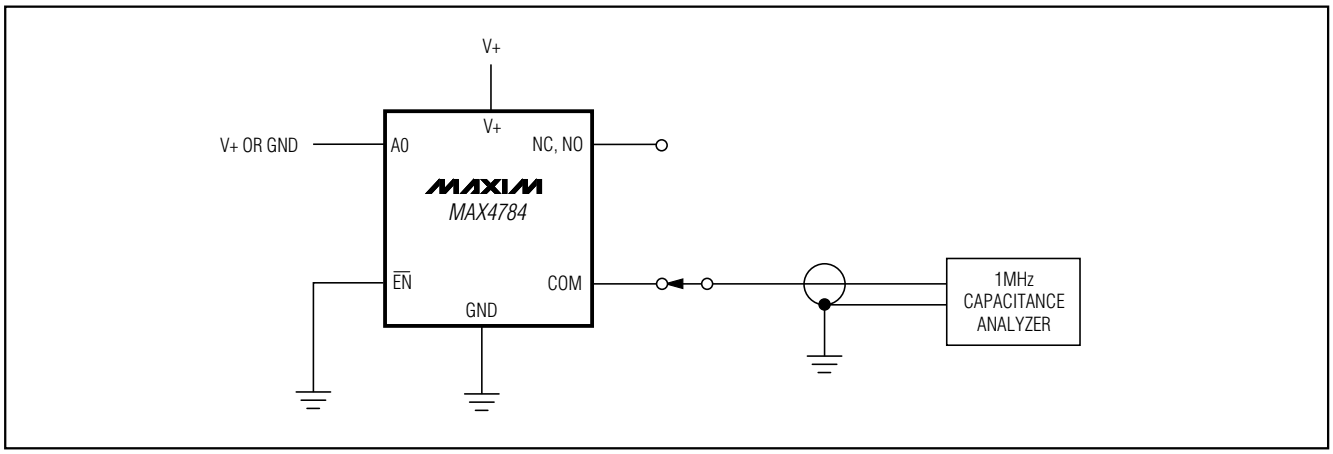
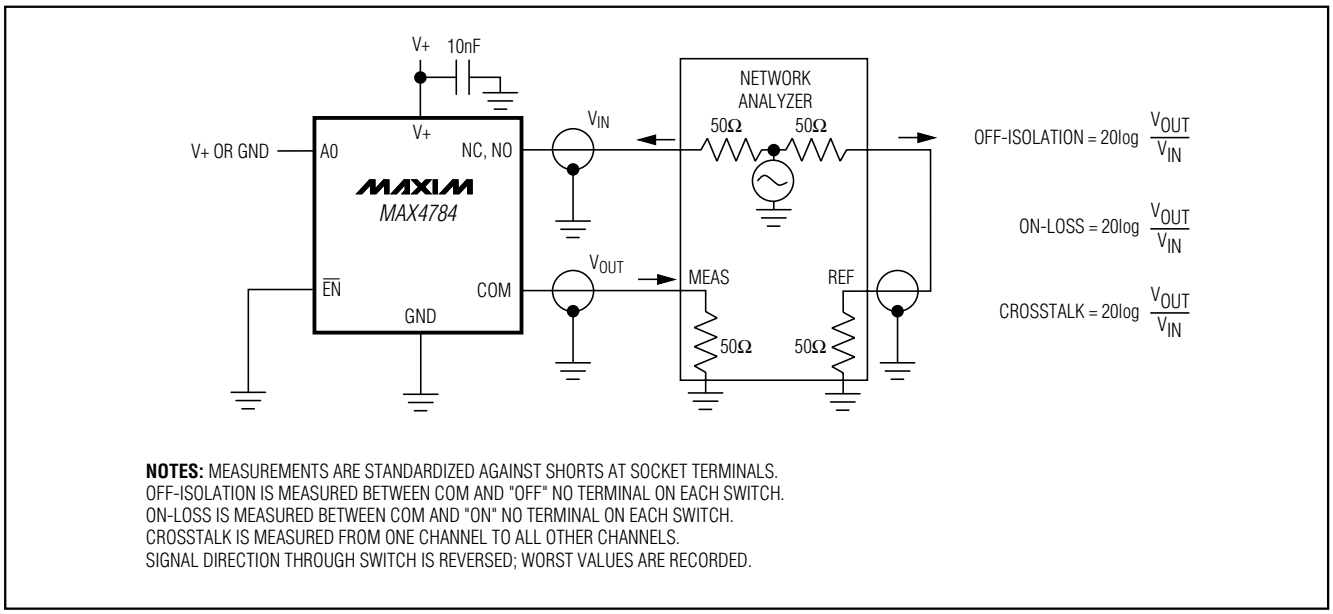


Figure 4. Capacitance



NOTES: MEASUREMENTS ARE STANDARDIZED AGAINST SHORTS AT SOCKET TERMINALS.
OFF-ISOLATION IS MEASURED BETWEEN COM AND "OFF" NO TERMINAL ON EACH SWITCH.
ON-LOSS IS MEASURED BETWEEN COM AND "ON" NO TERMINAL ON EACH SWITCH.
CROSSTALK IS MEASURED FROM ONE CHANNEL TO ALL OTHER CHANNELS.
SIGNAL DIRECTION THROUGH SWITCH IS REVERSED; WORST VALUES ARE RECORDED.

Figure 5. Off-Isolation, On-Loss, and Crosstalk

Chip Information

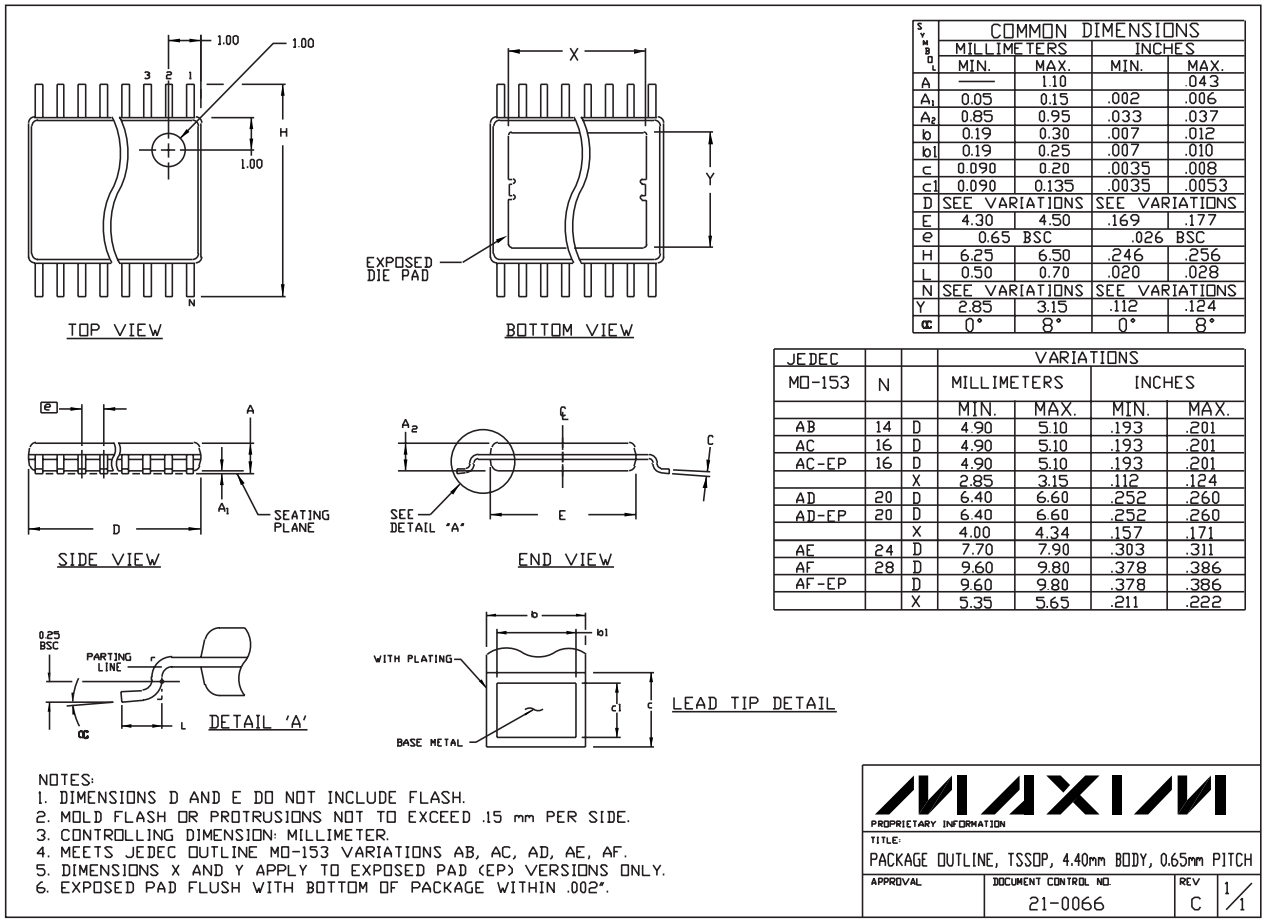
TRANSISTOR COUNT: 543

PROCESS: CMOS

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

Package Information

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information, go to **www.maxim-ic.com/packages**.)



SYMBOL	COMMON DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	———	1.10		.043
A_1	0.05	0.15	.002	.006
A_2	0.85	0.95	.033	.037
b	0.19	0.30	.007	.012
b1	0.19	0.25	.007	.010
c	0.090	0.20	.0035	.008
c1	0.090	0.135	.0035	.0053
D	SEE VARIATIONS		SEE VARIATIONS	
E	4.30	4.50	.169	.177
e	0.65 BSC		.026 BSC	
H	6.25	6.50	.246	.256
L	0.50	0.70	.020	.028
N	SEE VARIATIONS		SEE VARIATIONS	
Y	2.85	3.15	.112	.124
α	0°	8°	0°	8°

JEDEC			VARIATIONS			
MO-153	N		MILLIMETERS		INCHES	
			MIN.	MAX.	MIN.	MAX.
AB	14	D	4.90	5.10	.193	.201
AC	16	D	4.90	5.10	.193	.201
AC-EP	16	D	4.90	5.10	.193	.201
		X	2.85	3.15	.112	.124
AD	20	D	6.40	6.60	.252	.260
AD-EP	20	D	6.40	6.60	.252	.260
		X	4.00	4.34	.157	.171
AE	24	D	7.70	7.90	.303	.311
AF	28	D	9.60	9.80	.378	.386
AF-EP		D	9.60	9.80	.378	.386
		X	5.35	5.65	.211	.222

NOTES:
1. DIMENSIONS D AND E DO NOT INCLUDE FLASH.
2. MOLD FLASH OR PROTRUSIONS NOT TO EXCEED .15 mm PER SIDE.
3. CONTROLLING DIMENSION: MILLIMETER.
4. MEETS JEDEC OUTLINE MO-153 VARIATIONS AB, AC, AD, AE, AF.
5. DIMENSIONS X AND Y APPLY TO EXPOSED PAD (EP) VERSIONS ONLY.
6. EXPOSED PAD FLUSH WITH BOTTOM OF PACKAGE WITHIN .002".

MAXIM
PROPRIETARY INFORMATION

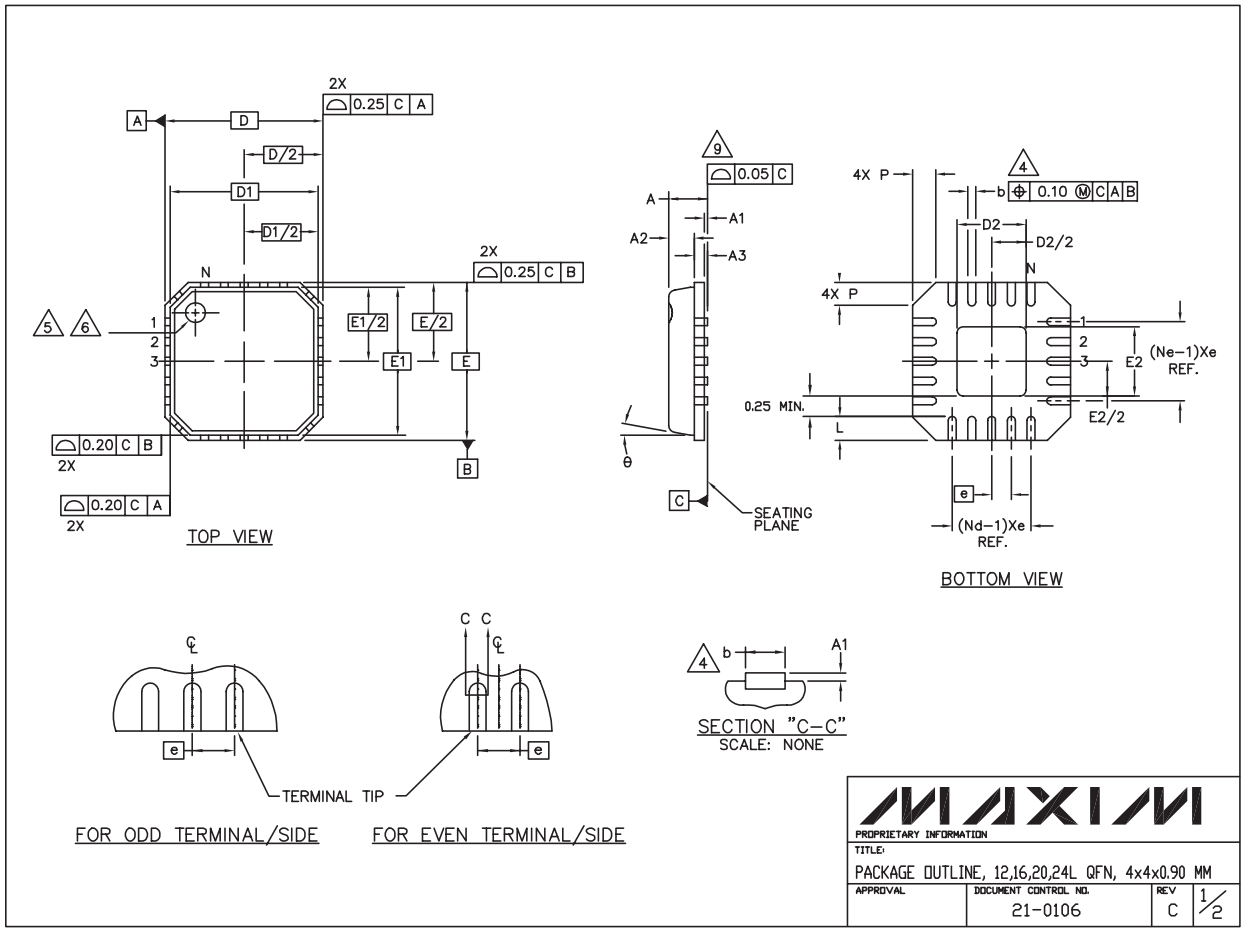
TITLE:
PACKAGE OUTLINE, TSSOP, 4.40mm BODY, 0.65mm PITCH

APPROVAL	DOCUMENT CONTROL NO.	REV	
	21-0066	C	1/1

1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

Package Information (continued)

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information, go to **www.maxim-ic.com/packages**.)



1Ω, Low-Voltage, Quad 2:1 Analog Multiplexer

Package Information (continued)

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information, go to **www.maxim-ic.com/packages**.)

NOTES:

1. DIE THICKNESS ALLOWABLE IS 0.305mm MAXIMUM (.012 INCHES MAXIMUM)
2. DIMENSIONING & TOLERANCES CONFORM MUST TO ASME Y14.5M. – 1994.
3. N IS THE NUMBER OF TERMINALS.
   Nd IS THE NUMBER OF TERMINALS IN X–DIRECTION &
   Ne IS THE NUMBER OF TERMINALS IN Y–DIRECTION.
4. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.20 AND 0.25mm FROM TERMINAL TIP.
5. THE PIN #1 IDENTIFIER MUST BE EXISTED ON THE TOP SURFACE OF THE PACKAGE BY USING INDENTATION MARK OR INK/LASER MARKED.
6. EXACT SHAPE AND SIZE OF THIS FEATURE IS OPTIONAL.
7. ALL DIMENSIONS ARE IN MILLIMETERS.
8. PACKAGE WARPAGE MAX 0.05mm.
9. APPLIED FOR EXPOSED PAD AND TERMINALS.
   EXCLUDE EMBEDDING PART OF EXPOSED PAD FROM MEASURING.
10. MEETS JEDEC MO220.
11. THIS PACKAGE OUTLINE APPLIES TO ANVIL SINGULATION (STEPPED SIDES) AND TO SAW SINGULATION (STRAIGHT SIDES) QFN STYLES.

SYMBOL	COMMON DIMENSIONS			NOTE
	MIN.	NOM.	MAX.	
A	0.80	0.90	1.00	
A1	0.00	0.01	0.05	
A2	0.00	0.65	0.80	
A3		0.20 REF.		
D		4.00 BSC		
D1		3.75 BSC		
E		4.00 BSC		
E1		3.75 BSC		
θ	0°		12°	
P	0.00	0.42	0.60	
D2	0.75		2.25	
E2	0.75		2.25	

SYMBOL	PITCH VARIATION A			NOTE	SYMBOL	PITCH VARIATION B			NOTE	SYMBOL	PITCH VARIATION C			NOTE	SYMBOL	PITCH VARIATION D			NOTE
	MIN.	NOM.	MAX.			MIN.	NOM.	MAX.			MIN.	NOM.	MAX.			MIN.	NOM.	MAX.	
e		0.80 BSC			e		0.65 BSC			e		0.50 BSC			e		0.50 BSC		
N		12		3	N		16		3	N		20		3	N		24		3
Nd		3		3	Nd		4		3	Nd		5		3	Nd		6		3
Ne		3		3	Ne		4		3	Ne		5		3	Ne		6		3
L	0.50	0.60	0.75		L	0.50	0.60	0.75		L	0.50	0.60	0.75		L	0.30	0.40	0.55	
b	0.28	0.33	0.40	4	b	0.23	0.28	0.35	4	b	0.18	0.23	0.30	4	b	0.18	0.23	0.30	4

MAXIM

PROPRIETARY INFORMATION

TITLE:

PACKAGE OUTLINE, 12,16,20,24L QFN, 4x4x0.90 MM

APPROVAL	DOCUMENT CONTROL NO.	REV	
	21-0106	C	2/2

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