Maximum Ratings

Storage Temperature.....-65℃ to +150℃
Ambient Temperature with Power Applied.....-40℃ to +85℃
Supply Voltage V_{CC} .....-0.5V to +7.0V
DC Switch Voltage V_S .....-0.5V to V_{CC}+0.5V
DC Input Voltage V_{IN} ..... -0.5V to +7.0V
DC Output Current V_{OUT}.....128mA
DC V_{CC} or Ground Current I_{CC} /I_{GND} ..... ±100mA
Junction Temperature under Bias (T_J) .....150 ℃
Junction Lead Temperature (T_L)
(Soldering, 10 seconds) ..... 260 ℃
ESD（HBM）.....5KV
Power Dissipation (P_D) @ +85 ℃ SOT23 250mW
SC70 200mW
UDFN1x1 150mW

Note:
Stresses greater than those listed under MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

Recommended Operating Conditions

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CC}	Operating Voltage	-	1.65	-	5.5	V
V_{IN}	Control Input Voltage	-	0	-	V_{CC}	V
V_S	Switch Input Voltage	-	0	-	V_{CC}	V
V_{OUT}	Output Voltage	-	0	-	V_{CC}	V
T_A	Operating Temperature	-	-40	25	85	℃
t_r, t_f	Input Rise and Fall Time	Control Input V_{CC} = 2.7V to 3.6V	0	-	10	ns/V
		Control Input V_{CC} = 4.5V to 5.5V	0	-	5	ns/V

Note: Control input must be held HIGH or LOW; it must not float.

DC Electrical Characteristics

(T_A = –40 ℃ to 85 ℃, unless otherwise noted.)

Parameter	Description	Test Conditions	Supply Voltage	Min	Typ	Max	Units
V_{IAR}	Analog Input Signal Range	-	V_{CC}	0	-	V_{CC}	V
R_{ON}	ON Resistance (1)	I_O = 100mA, V_{IN} = 0V	4.5V	-	0.7	1.1	Ω
		I_O = 100mA, V_{IN} = 2.4V		-	0.6	1.0	
		I_O = 100mA, V_{IN} = 4.5V		-	0.8	1.2	
		I_O = 100mA, V_{IN} = 0V	3.0V	-	0.8	1.3	
		I_O = 100mA, V_{IN} = 3.0V		-	0.9	1.9	
		I_O = 100mA, V_{IN} = 0V	2.3V	-	1.0	1.5	
		I_O = 100mA, V_{IN} = 2.3V		-	1.2	1.8	
		I_O = 100mA, V_{IN} = 0V	1.65V	-	1.3	1.9	
		I_O = 100mA, V_{IN} = 1.65V		-	2.0	2.8	
ΔR_{ON}	ON Resistance Match Between Channels(1,2,3)	I_A =100mA, V_{Bn} =3.15V	4.5V	-	0.01	0.03	Ω
		I_A = 100mA, V_{Bn} = 2.1V	3.0V	-	0.02	0.04	
		I_A =100mA, V_{Bn} = 1.6V	2.3V	-	0.03	0.06	
		I_A = 100mA, V_{Bn} = 1.15V	1.65V	-	0.03	0.06	
R_{ONF}	ON Resistance Flatness(1,2,4)	I_A = 100mA, V_{Bn} = 0V,2.4V,4.5V	4.5V	-	0.2	0.4	Ω
		I_A = 100mA, V_{Bn} = 0V,1.5V,3.3V	3.3V	-	0.2		
		I_A = 100mA, V_{Bn} = 0V,1.1V,2.5V	2.5V	-	0.4	0.6	
		I_A = 100mA, V_{Bn} = 0V, 0.7V,1.8V	1.8V	-	1.0	1.4	
V_{IH}	Input High Voltage	Logic High Level	V_{CC} = 1.65V	0.9	-	-	V
			V_{CC} = 2.3V	1.0	-	-	
			V_{CC} = 3V	1.1	-	-	
			V_{CC} = 4.2V	1.2	-	-	
			V_{CC} = 5.5V	1.3	-	-	
V_{IL}	Input Low Voltage	Logic Low Level	V_{CC} = 1.65V	-	-	0.6	V
			V_{CC} = 2.3V	-	-	0.6	
			V_{CC} = 3V	-	-	0.6	
			V_{CC} = 4.2V	-	-	0.8	
			V_{CC} = 5.5V	-	-	0.8	
$I_{OFF\ (NO)}$ or $I_{OFF\ (NC)}$	Source Off Leakage Current	V_{CC}=5.5V, V_A =1V, 4.5V V_{Bn} =1V, 4.5V	V_{CC} = 3V	-20	-	+20	nA
$I_{NC(ON)}$, $I_{NO(ON)}$, $I_{COM\ (ON)}$	Channel On Leakage Current	-	V_{CC} = 1.65 to 5.5V	-40	-	+40	
I_{CC}	Quiescent Supply Current	All channels ON or OFF, V_{IN} = V_{CC} or GND, I_{OUT}=0	V_{CC} = 3.6V	-	0.002	0.1	µA
			V_{CC} = 5.5V	-	0.002	0.1	
I_{CCT}	Increase in I_{CC} per Input	Input at 2.7V	V_{CC} = 4.3V	-	0.2	10.0	µA

Notes:

1. Measured by voltage drop between A and B pins at the indicated current through the device. ON resistance is determined by the lower of the voltages on two ports (A or B).
2. Parameter is characterized but not tested in production.
3. $\Delta R_{ON} = R_{ON}$ max $– R_{ON}$ min. measured at identical V_{CC}, temperature and voltage levels.
4. Flatness is defined as difference between maximum and minimum value of ON resistance over the specified range of conditions.

Capacitance (1)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
C_{IN}	Control Input	V_{CC} = 5.0V, f =1 MHz, T_A=25℃	-	3.5	-	pF
C_{IO-B}	For B Port, Switch OFF		-	15.0	-	
C_{IOA-ON}	For A Port, Switch ON		-	34.0	-	

Notes:
1. Capacitance is characterized but not tested in production

Switch and AC Characteristics (1)

Parameter	Description	Test Conditions	Supply Voltage	Min	Typ	Max	Units
t_{BBM}	Break Before Make Time	See Figure 2	V_{CC} = 2.7V to 3.6V	-	10	20	ns
			V_{CC} = 4.5V to 5.5V	-	6	12	
t_{ON}	Turn on Time	See Figure 1	V_{CC} = 2.7V to 3.6V	-	12	25	
			V_{CC} = 4.5V to 5.5V	-	9	18	
t_{OFF}	Turn off Time	See Figure 1	V_{CC} = 2.7V to 3.6V	-	17	35	
			V_{CC} = 4.5V to 5.5V	-	10	20	
Q	Charge Injection	C_L = 1nF, V_{GEN} = 0V, R_{GEN}=0Ω. See Figure 3	V_{CC} = 5.0V	-	35	-	pC
			V_{CC} = 3.3V	-	25	-	
OIRR	Off Isolation	R_L=50Ω, V_{GEN}=0V, R_{GEN} =0Ω, f =1MHz. See Figure 4 (2)	V_{CC} =1.65V to 5.5V	-	-70	-	dB
X_{TALK}	Crosstalk Isolation	f=1MHz, See Figure 5	V_{CC} =1.65V to 5.5V	-	-70	-	
f_{3dB}	–3dB Bandwidth	See Figure 8	V_{CC} =1.65V to 5.5V	-	150	-	MHz
T_{HD}	Total Harmonic Distortion	R_L=600Ω, V_{IN}=0.5Vpp, f=20Hz to 20kHz See Figure 9	V_{CC} =2.7V to 4.2V	-	0.015	-	%

Notes:
1. Guaranteed by design.
2. Off Isolation = 20 Log_{10} [V_{Bn}/V_A] and is measured in dB.

Test Circuits and Timing Diagrams

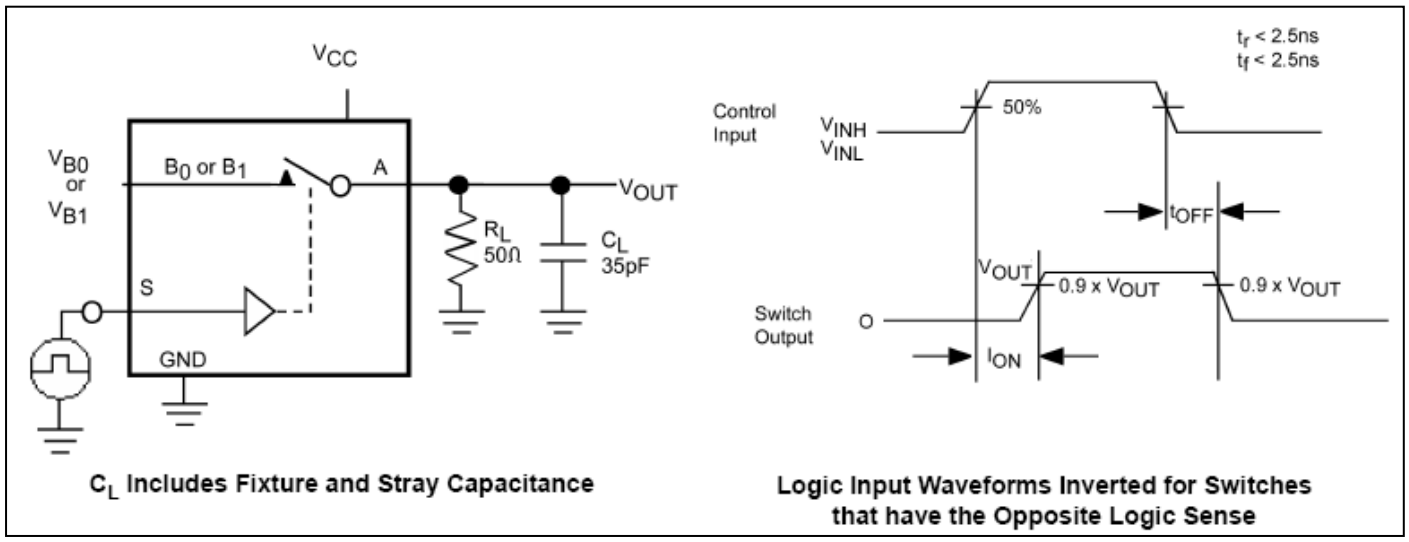


Figure 1. Turn ON/OFF Timing

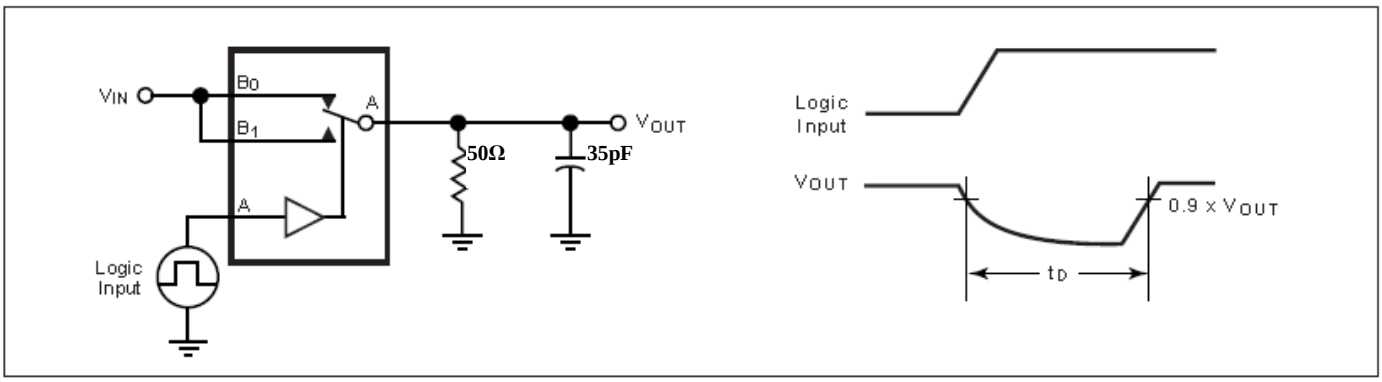


Figure 2. Break Before Make Interval Timing

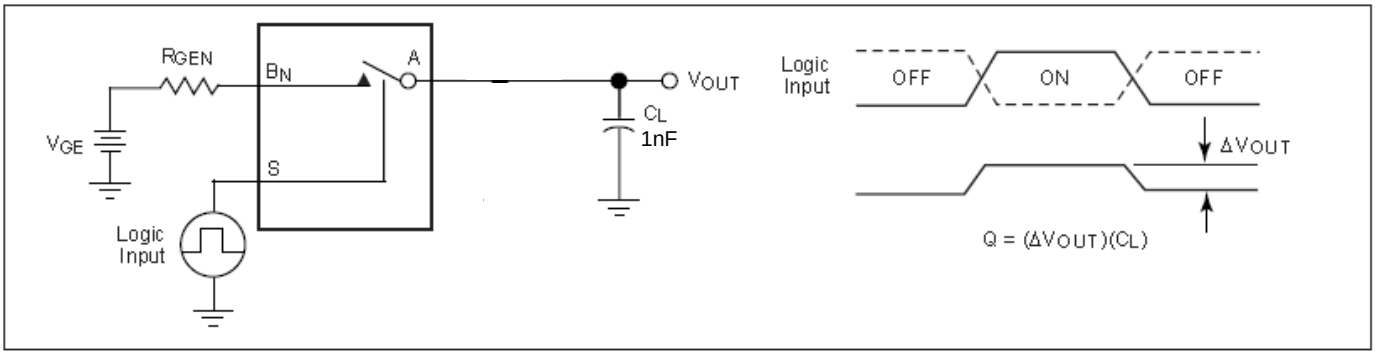


Figure 3. Charge Injection Test

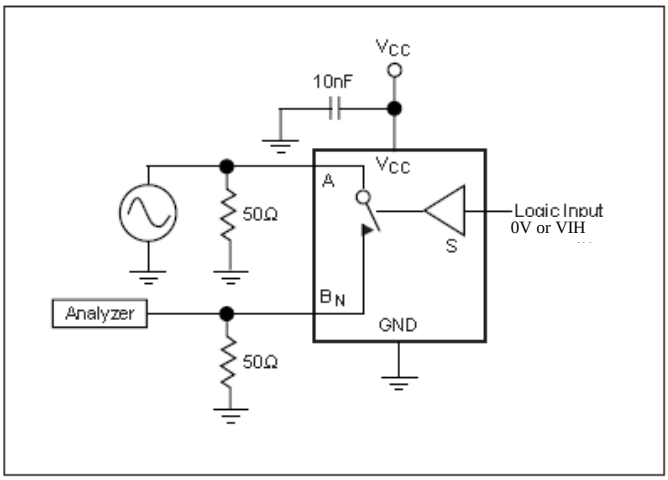


Figure 4. Off Isolation

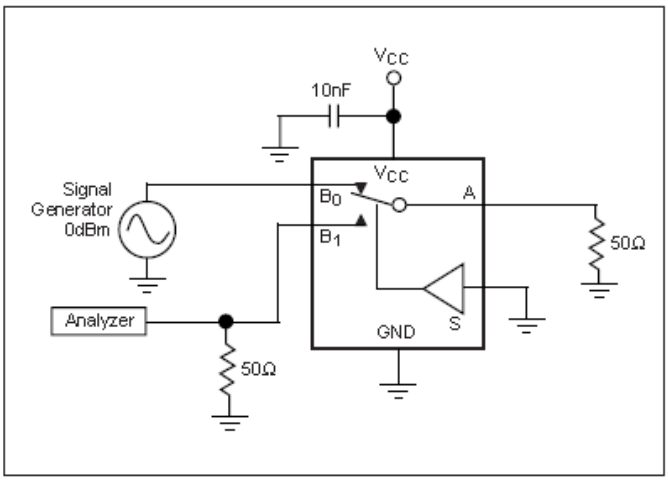


Figure 5. Crosstalk

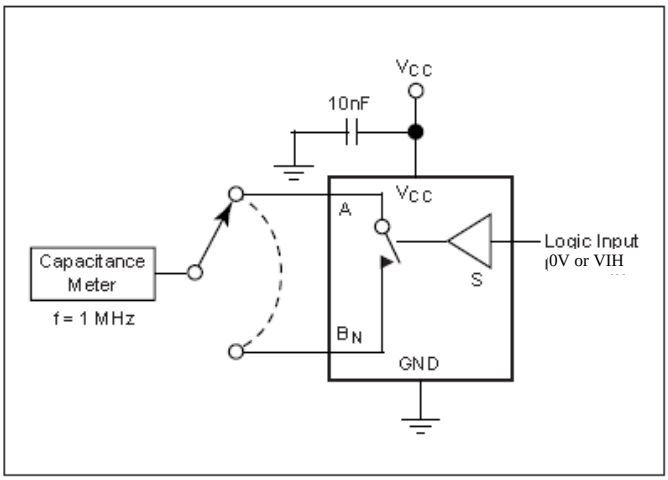


Figure 6. Channel Off Capacitance

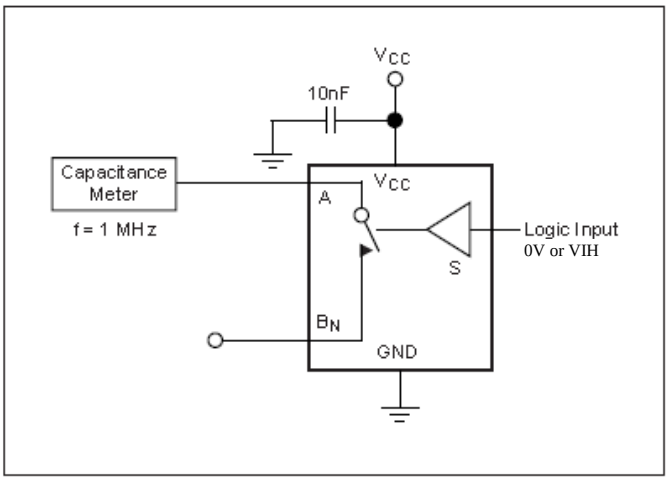


Figure 7. Channel On Capacitance

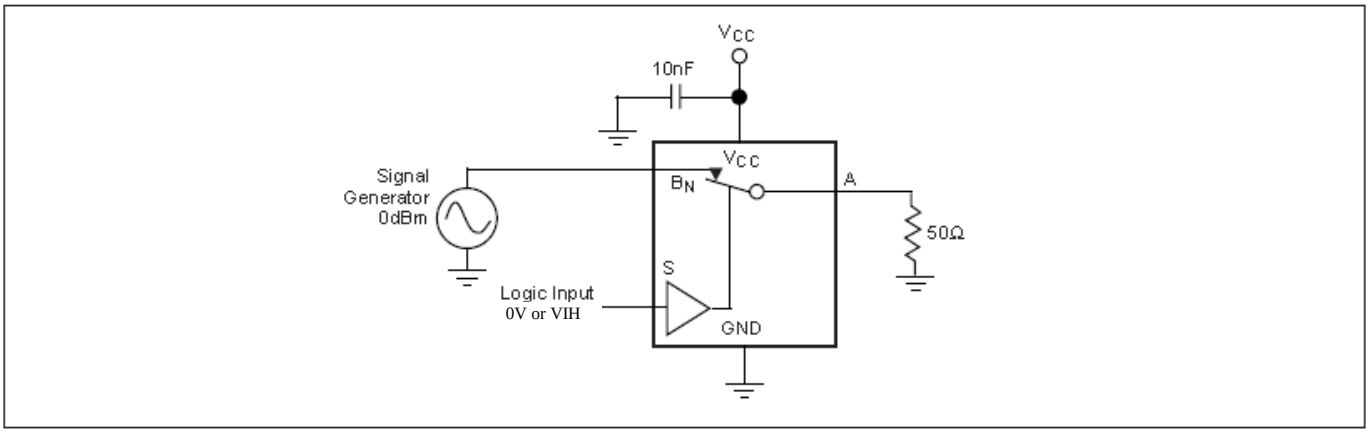


Figure 8. Bandwidth

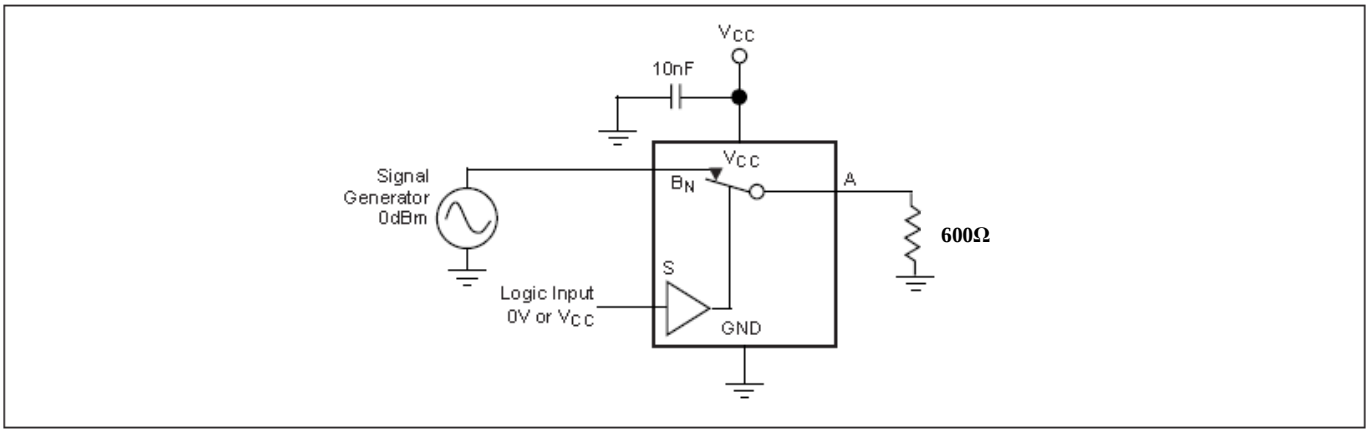
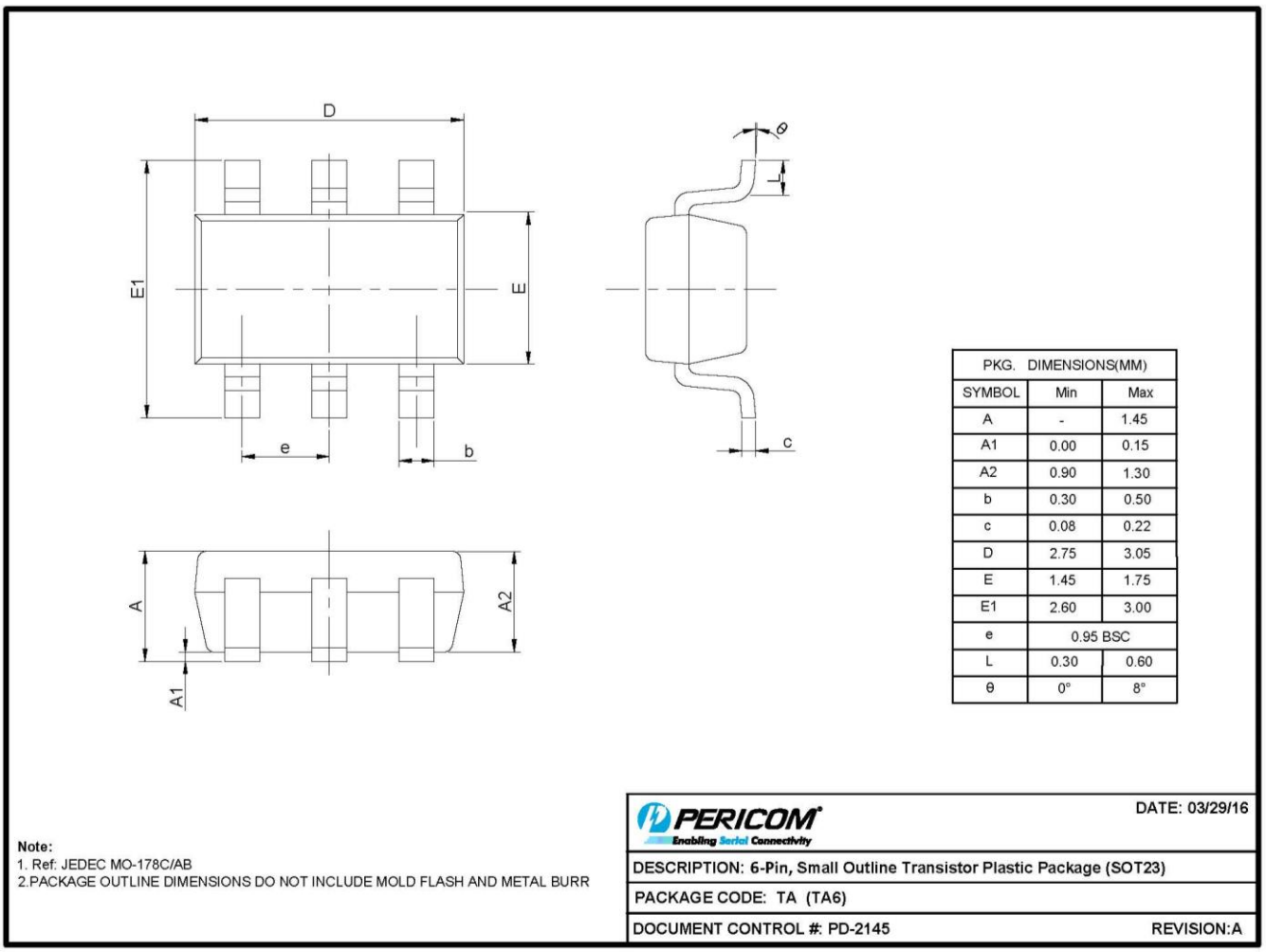


Figure 9. Harmonic Distortion

Mechanical Information

TA (6-pin SOT23)



PKG. DIMENSIONS(MM)		
SYMBOL	Min	Max
A	-	1.45
A1	0.00	0.15
A2	0.90	1.30
b	0.30	0.50
c	0.08	0.22
D	2.75	3.05
E	1.45	1.75
E1	2.60	3.00
e	0.95 BSC	
L	0.30	0.60
θ	0°	8°

Note:
1. Ref: JEDEC MO-178C/AB
2.PACKAGE OUTLINE DIMENSIONS DO NOT INCLUDE MOLD FLASH AND METAL BURR

PERICOM Enabling Serial Connectivity — DATE: 03/29/16

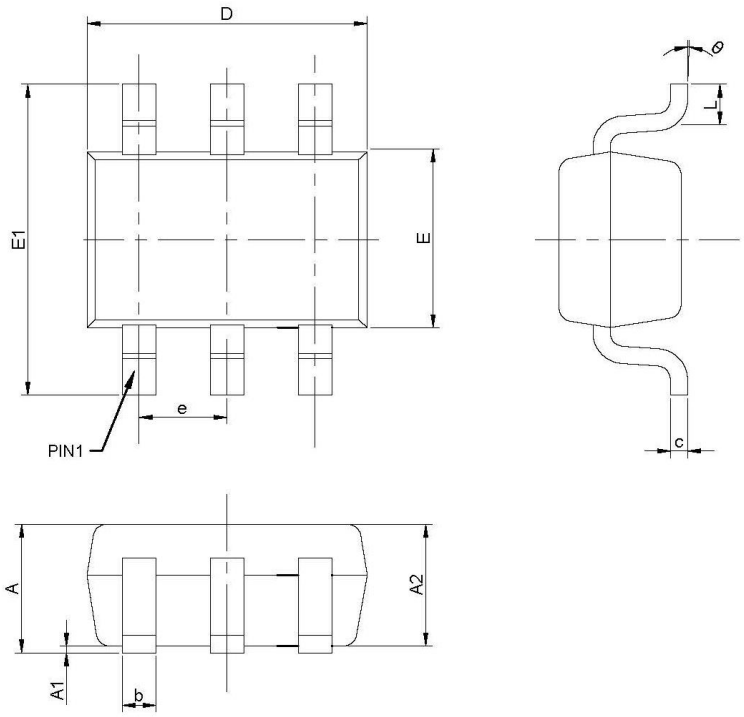
DESCRIPTION: 6-Pin, Small Outline Transistor Plastic Package (SOT23)

PACKAGE CODE: TA (TA6)

DOCUMENT CONTROL #: PD-2145 REVISION:A

16-0082

C (6-pin SC70)



PKG. DIMENSIONS(MM)		
SYMBOL	Min	Max
A	-	1.10
A1	0.00	0.10
A2	0.70	1.00
b	0.15	0.40
c	0.08	0.22
D	1.80	2.20
E	1.10	1.40
E1	1.80	2.40
e	0.65 BSC	
L	0.26	0.46
θ	0°	8°

Notes:

1. Comply with MO-203C/AB, except b Max, D Min and D Max.
2. PACKAGE OUTLINE DIMENSIONS DO NOT INCLUDE MOLD FLASH AND METAL BURR

PERICOM Enabling Serial Connectivity — DATE: 03/29/16

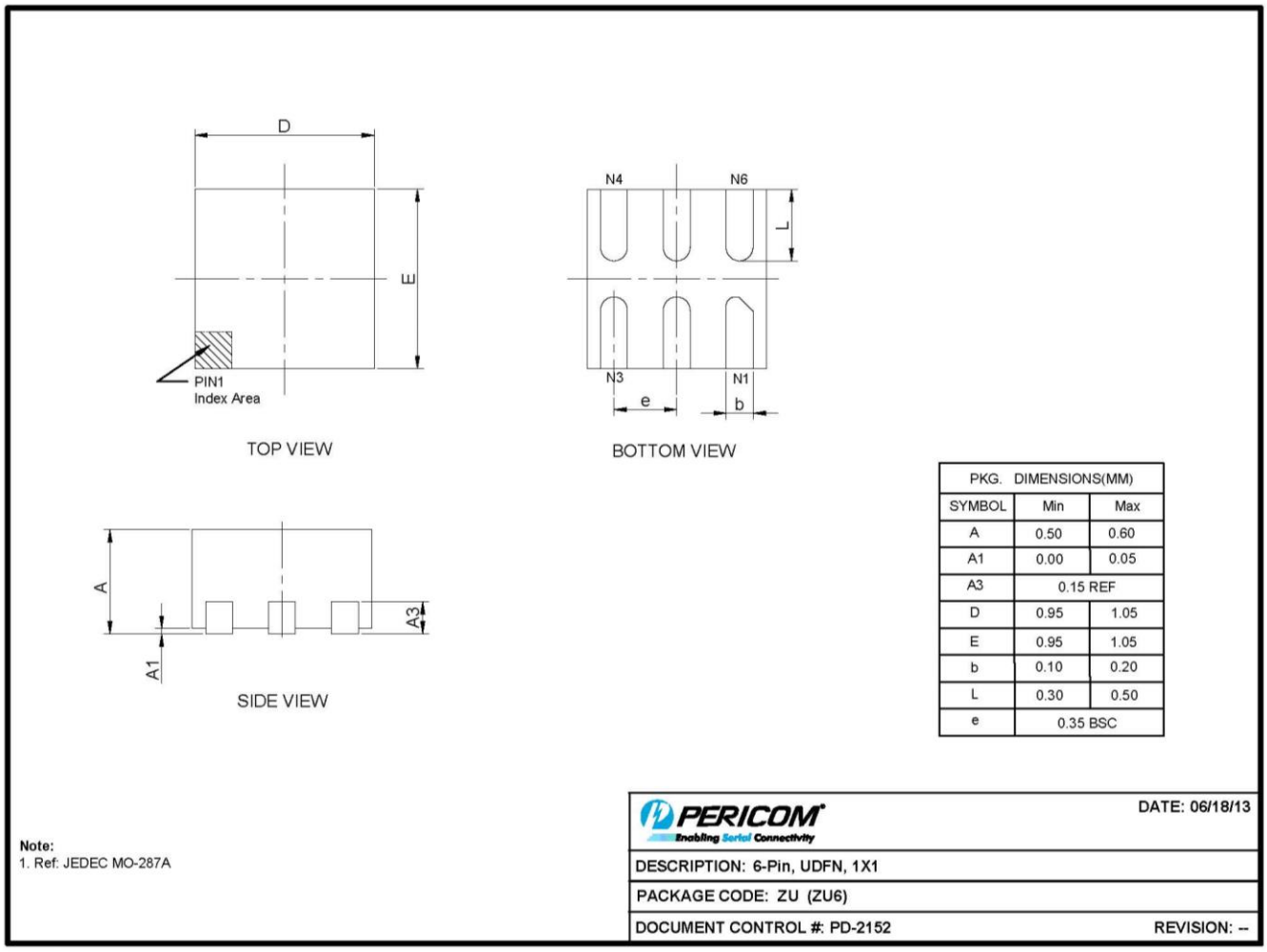
DESCRIPTION: 6-Pin, SOT363 (SC70)

PACKAGE CODE: C (C6)

DOCUMENT CONTROL#: PD-1902 REVISION:B

16-0078

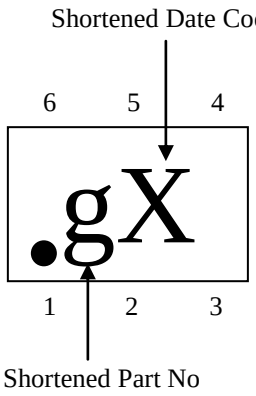
ZU (6-pin UDFN 1x1)



PKG. DIMENSIONS(MM)		
SYMBOL	Min	Max
A	0.50	0.60
A1	0.00	0.05
A3	0.15 REF	
D	0.95	1.05
E	0.95	1.05
b	0.10	0.20
L	0.30	0.50
e	0.35 BSC	

13-0191

Marking Description



Note: For latest package info, please check: http://www.pericom.com/products/packaging/mechanicals.php

Ordering Information

Part Number	Package Code	Package	Top Marking
PI5A4157CEX	C	6-Pin, SOT363 (SC70), Tape & Reel	mA
PI5A4157TAEX	TA	6-Pin, Small Outline Transistor Plastic Package (SOT23), Tape & reel	mA
PI5A4157ZUEX	ZU	6-Pin, 1x1 (UDFN), Tape & reel	g

Notes:

- Thermal characteristics can be found on the company web site at www.pericom.com/packaging/
- E = Pb-free and Green
- X suffix = Tape/Reel

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel.

Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or

2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

www.diodes.com