2-channel Analog Multiplexer/Demultiplexer

CJ74LVC1G3157 Logic

1 Introduction

The CJ74LVC1G3157 provides one analog multiplexer/demultiplexer with one digital select input (S), two independent inputs/outputs (Y0, Y1) and a common input/output (Z).

Schmitt trigger action at the select input makes the circuit tolerant of slower input rise and fall times across the entire V_{CC} range from 1.65V to 5.5V.

2 Available Packages

PART NUMBER	PACKAGE
CJ74LVC1G3157	SOT-23-6L
	SOT-363
	DFN1.45x1-6L

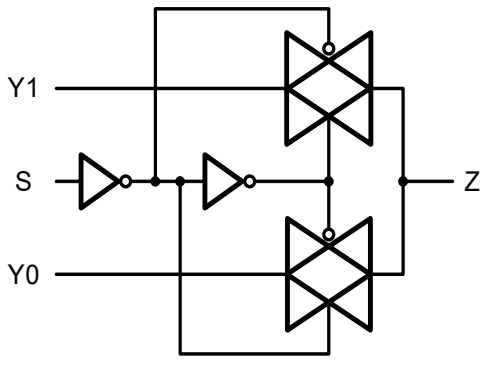
Note: For all available packages, please refer to the part Orderable Information.

3 Features

- Wide supply voltage range from 1.65V to 5.5V
- Very low ON resistance:
  - 7.5Ω (typical) at V_{CC}=2.7V
  - 6.5Ω (typical) at V_{CC}=3.3V
  - 6Ω (typical) at V_{CC}=5V
- Switch current capability of 32mA
- Break-before-make switching
- CMOS low power consumption
- TTL interface compatibility at 3.3V
- Control input accepts voltages up to 5.5V
- Specified from -40°C to +125°C

4 Applications

- Wearables and mobile devices
- Portable computing
- Internet of things (IoT)
- Audio signal routing
- Remote radio unit
- Portable medical equipment
- Surveillance
- Home automation
- I2C/SPI/UART bus multiplexing
- Wireless charging



Logic diagram

5 Orderable Information

DEVICE	PACKAGE	OP TEMP	ECO PLAN	MSL	PACKING OPTION	SORT
CJ74LVC1G3157M6N	SOT-23-6L	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 3000 Units / Reel	Active
CJ74LVC1G3157R6N	SOT-363	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 3000 Units / Reel	Active
CJ74LVC1G3157DNN	DFN1.45x1-6L	-40~125°C	RoHS & Green	Level 3 168HR	Tape and Reel 5000 Units / Reel	Active

Note:

ECO PLAN: For the RoHS and Green certification standards of this product, please refer to the official report provided by JSCJ.

MSL: Moisture Sensitivity Level. Determined according to JEDEC industry standard classification.

SORT: Specifically defined as follows:
Active: Recommended for new products;
Customized: Products manufactured to meet the specific needs of customers;
Preview: The device has been released and has not been fully mass produced. The sample may or may not be available;
NoRD: It is not recommended to use the device for new design. The device is only produced for the needs of existing customers;
Obsolete: The device has been discontinued.

6 Pin Configuration and Marking Information

6.1 Pin Configuration

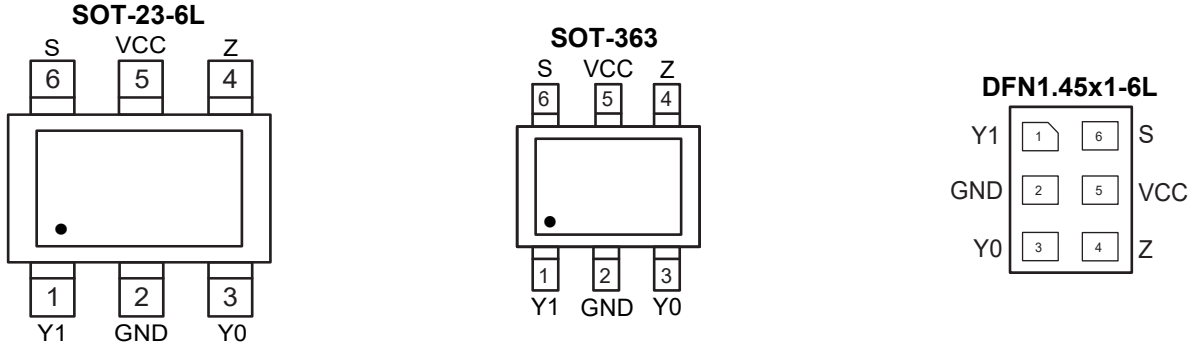


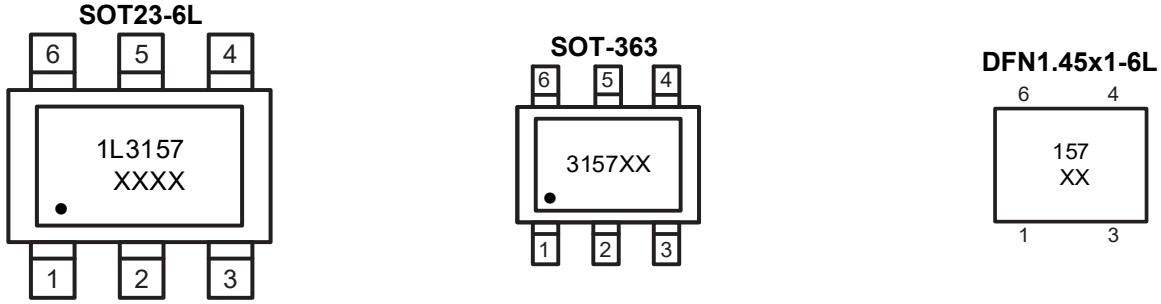
Figure 6-1 Pin configuration

6.2 Pin Function

PIN		I/O(1)	DESCRIPTION
No.	NAME		
1	Y1	I/O	Independent input or output
2	GND	G	Ground (0 V)
3	Y0	I/O	Independent input or output
4	Z	I/O	Common output or input
5	VCC	P	Supply voltage
6	S	I	Select input

(1) I-Input, O-Output, P-Power, G-Ground

6.3 Marking Information



XXXX or XX : Code, indicates weekly record information.

7 Specifications

7.1 Absolute Maximum Ratings

T_{amb}=25°C, All voltage referenced to GND, unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CC}	Supply voltage	-	-0.5	+6.5	V
V_I	Input voltage	-(1)	-0.5	+6.5	V
I_{IK}	Input clamping current	V_I<-0.5V or V_I>V_{CC}+0.5V	-50	-	mA
I_{SK}	Switch clamping current	V_I<-0.5V or V_I>V_{CC}+0.5V	-	±50	mA
V_{SW}	Switch voltage	Enable and disable mode(2)	-0.5	V_{CC}+0.5	V
I_{SW}	Switch current	V_{SW}>-0.5V or V_{SW}<V_{CC}+0.5V	-	±50	mA
I_{CC}	Supply current	-	-	100	mA
I_{GND}	Ground current	-	-100	-	mA
T_{stg}	Storage temperature	-	-65	+150	°C
P_{tot}	Total power dissipation	-	-	250	mW
T_L	Soldering temperature	10s	-	260	°C

(1) The minimum input voltage rating may be exceeded if the input current rating is observed.

(2) The minimum and maximum switch voltage ratings may be exceeded if the switch clamping current rating is observed.

7.2 Recommended Operating Conditions

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CC}	Supply voltage	-	1.65	-	5.5	V
V_I	Input voltage	-	0	-	5.5	V
V_{SW}	Switch voltage	Enable and disable mode(1)	0	-	V_{CC}	V
T_{amb}	Ambient temperature	-	-40	-	+125	°C
Δt/ΔV	Input transition rise and fall rate	V_{CC}=1.65V to 2.7V(2)	-	-	20	ns/V
		V_{CC}=2.7V to 5.5V(2)	-	-	10	ns/V

(1) To avoid sinking GND current from terminal Z when switch current flows in terminal Yn, the voltage drop across the bidirectional switch must not exceed 0.4V. If the switch current flows into terminal Z, no GND current will flow from terminal Yn. In this case, there is no limit for the voltage drop across the switch.

(2) Applies to control signal levels.

7.3 ESD Ratings

SYMBOL	ESD RATINGS		VALUE	UNIT
$V_{ESD-HBM}$	Electrostatic discharge	Human body model (HBM)(1)	±4000	V

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.

7.4 Electrical Characteristics

7.4.1 DC Characteristics 1

T_{amb}=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.(1)	MAX.	UNIT
V_{IH}	HIGH-level input voltage	V_{CC}=1.65V to 1.95V	0.65xV_{CC}	-	-	V
		V_{CC}=2.3V to 2.7V	1.7	-	-	V
		V_{CC}=3V to 3.6V	2.0	-	-	V
		V_{CC}=4.5V to 5.5V	0.7xV_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC}=1.65V to 1.95V	-	-	0.35xV_{CC}	V
		V_{CC}=2.3V to 2.7V	-	-	0.7	V
		V_{CC}=3V to 3.6V	-	-	0.8	V
		V_{CC}=4.5V to 5.5V	-	-	0.3xV_{CC}	V
I_I	Input leakage current	Pin S; V_I = 5.5V or GND; V_{CC} = 0V to 5.5V(2)	-	±0.1	±1	uA
$I_{S(OFF)}$	OFF-state leakage current	V_{CC}=5.5V; See Figure 8-3(2)	-	±0.1	±0.2	uA
$I_{S(ON)}$	ON-state leakage current	V_{CC}=5.5V; See Figure 8-4(2)	-	±0.1	±1	uA
I_{CC}	Supply current	V_I=5.5V or GND; V_{SW}=GND or V_{CC}; V_{CC}=1.65V to 5.5V(2)	-	0.1	4	uA
ΔI_{CC}	Additional supply current	Pin S; V_I=V_{CC}-0.6V; V_{CC}=5.5V; V_{SW}=GND or V_{CC}(2)	-	5	500	uA
C_I	Input capacitance	-	-	2.5	-	pF
$C_{S(OFF)}$	OFF-state capacitance	-	-	6.0	-	pF
$C_{S(ON)}$	ON-state capacitance	-	-	18	-	pF

(1) Typical values are measured at T_{amb}=25°C.

(2) These typical values are measured at V_{CC}=3.3V.

7.4.2 DC Characteristics 2

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{IH}	HIGH-level input voltage	V_{CC}=1.65V to 1.95V	0.65xV_{CC}	-	-	V
		V_{CC}=2.3V to 2.7V	1.7	-	-	V
		V_{CC}=3V to 3.6V	2.0	-	-	V
		V_{CC}=4.5V to 5.5V	0.7xV_{CC}	-	-	V
V_{IL}	LOW-level input voltage	V_{CC}=1.65V to 1.95V	-	-	0.35xV_{CC}	V
		V_{CC}=2.3V to 2.7V	-	-	0.7	V
		V_{CC}=3V to 3.6V	-	-	0.8	V
		V_{CC}=4.5V to 5.5V	-	-	0.3xV_{CC}	V
I_I	Input leakage current	Pin S; V_I = 5.5V or GND; V_{CC} = 0V to 5.5V(1)	-	-	±1	uA
$I_{S(OFF)}$	OFF-state leakage current	V_{CC}=5.5V; See Figure 8-3(1)	-	-	±0.5	uA
$I_{S(ON)}$	ON-state leakage current	V_{CC}=5.5V; See Figure 8-4(1)	-	-	±2	uA
I_{CC}	Supply current	V_I=5.5V or GND; V_{SW}=GND or V_{CC}; V_{CC}=1.65V to 5.5V(1)	-	-	4	uA
ΔI_{CC}	Additional supply current	Pin S; V_I=V_{CC}-0.6V; V_{CC}=5.5V; V_{SW}=GND or V_{CC}(1)	-	-	500	uA

(1) These typical values are measured at V_{CC}=3.3V.

7.4.3 ON Resistance 1

T_{amb}=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.(1)	MAX.	UNIT
$R_{ON(peak)}$	ON resistance (peak)	V_I=GND to V_{CC}; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	34.0	130	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	12.0	30	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	10.4	25	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	7.8	20	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	6.2	15	Ω
$R_{ON(rail)}$	ON resistance (rail)	V_I=GND; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	8.2	18	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	7.1	16	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	6.9	14	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	6.5	12	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	5.8	10	Ω
		V_I=V_{CC}; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	10.4	30	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	7.6	20	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	7.0	18	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	6.1	15	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	4.9	10	Ω
$R_{ON(flat)}$	ON resistance (flatness)	V_I=GND to V_{CC}(2)	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	26.0	-	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	5.0	-	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	3.5	-	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	2.0	-	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	1.5	-	Ω

(1) Typical values are measured at T_{amb}=25°C and nominal V_{CC}.

(2) Flatness is defined as the difference between the maximum and minimum value of ON resistance measured at identical V_{CC} and temperature.

7.4.4 ON Resistance 2

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
$R_{ON(peak)}$	ON resistance (peak)	V_I=GND to V_{CC}; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	-	195	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	-	45	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	-	38	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	-	30	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	-	23	Ω
$R_{ON(rail)}$	ON resistance (rail)	V_I=GND; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	-	27	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	-	24	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	-	21	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	-	18	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	-	15	Ω
		V_I=V_{CC}; See Figure 8-5	I_{SW}=4mA; V_{CC}=1.65V to 1.95V	-	-	45	Ω
			I_{SW}=8mA; V_{CC}=2.3V to 2.7V	-	-	30	Ω
			I_{SW}=12mA; V_{CC}=2.7V	-	-	27	Ω
			I_{SW}=24mA; V_{CC}=3V to 3.6V	-	-	23	Ω
			I_{SW}=32mA; V_{CC}=4.5V to 5.5V	-	-	15	Ω

7.4.5 AC Characteristics 1

T_{amb}=-40°C to +85°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.(1)	MAX.	UNIT
t_{pd}	Propagation delay	Z to Yn or Yn to Z; See Figure 8-12(2)(3)	V_{CC}=1.65V to 1.95V	-	-	2	ns
			V_{CC}=2.3V to 2.7V	-	-	1.2	ns
			V_{CC}=2.7V	-	-	1.0	ns
			V_{CC}=3V to 3.6V	-	-	0.8	ns
			V_{CC}=4.5V to 5.5V	-	-	0.6	ns
t_{en}	Enable time	S to Yn; See Figure 8-13(4)	V_{CC}=1.65V to 1.95V	3.1	8.7	20.8	ns
			V_{CC}=2.3V to 2.7V	2.2	5.3	11.5	ns
			V_{CC}=2.7V	2.1	4.9	9.3	ns
			V_{CC}=3V to 3.6V	1.8	4.0	7.6	ns
			V_{CC}=4.5V to 5.5V	1.5	3.0	5.7	ns
t_{dis}	Disable time	S to Yn; See Figure 8-13(5)	V_{CC}=1.65V to 1.95V	3.0	6.0	11.4	ns
			V_{CC}=2.3V to 2.7V	2.1	4.4	7.3	ns
			V_{CC}=2.7V	2.1	4.2	6.3	ns
			V_{CC}=3V to 3.6V	1.7	3.6	5.3	ns
			V_{CC}=4.5V to 5.5V	1.3	2.9	3.8	ns
t_{b-m}	Break-before make time	See Figure 8-14(6)	V_{CC}=1.65V to 1.95V	0.5	-	-	ns
			V_{CC}=2.3V to 2.7V	0.5	-	-	ns
			V_{CC}=2.7V	0.5	-	-	ns
			V_{CC}=3V to 3.6V	0.5	-	-	ns
			V_{CC}=4.5V to 5.5V	0.5	-	-	ns

(1) Typical values are measured at T_{amb}=25°C and nominal V_{CC}.

(2) t_{pd} is the same as t_{PLH} and t_{PHL}.

(3) Propagation delay is the calculated RC time constant of the typical ON resistance of the switch and the specified capacitance when driven by an ideal voltage source (zero output impedance).

(4) t_{en} is the same as t_{PZH} and t_{PZL}.

(5) t_{dis} is the same as t_{PLZ} and t_{PHZ}.

(6) Break-before-make specified by design.

7.4.6 AC Characteristics 2

T_{amb}=-40°C to +125°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.(1)	MAX.	UNIT
t_{pd}	Propagation delay	Z to Yn or Yn to Z; See Figure 8-12(2)(3)	V_{CC}=1.65V to 1.95V	-	-	3.0	ns
			V_{CC}=2.3V to 2.7V	-	-	2.0	ns
			V_{CC}=2.7V	-	-	1.5	ns
			V_{CC}=3V to 3.6V	-	-	1.5	ns
			V_{CC}=4.5V to 5.5V	-	-	1.0	ns
t_{en}	Enable time	S to Yn; See Figure 8-13(4)	V_{CC}=1.65V to 1.95V	3.1	-	22.0	ns
			V_{CC}=2.3V to 2.7V	2.2	-	12.5	ns
			V_{CC}=2.7V	2.1	-	10.5	ns
			V_{CC}=3V to 3.6V	1.8	-	9.0	ns
			V_{CC}=4.5V to 5.5V	1.5	-	6.1	ns
t_{dis}	Disable time	S to Yn; See Figure 8-13(5)	V_{CC}=1.65V to 1.95V	3.0	-	11.7	ns
			V_{CC}=2.3V to 2.7V	2.1	-	7.6	ns
			V_{CC}=2.7V	2.1	-	6.6	ns
			V_{CC}=3V to 3.6V	1.7	-	5.9	ns
			V_{CC}=4.5V to 5.5V	1.3	-	4.3	ns
t_{b-m}	Break-before make time	See Figure 8-14(6)	V_{CC}=1.65V to 1.95V	0.5	-	-	ns
			V_{CC}=2.3V to 2.7V	0.5	-	-	ns
			V_{CC}=2.7V	0.5	-	-	ns
			V_{CC}=3V to 3.6V	0.5	-	-	ns
			V_{CC}=4.5V to 5.5V	0.5	-	-	ns

(1) Typical values are measured at T_{amb}=25°C and nominal V_{CC}.

(2) t_{pd} is the same as t_{PLH} and t_{PHL}.

(3) Propagation delay is the calculated RC time constant of the typical ON resistance of the switch and the specified capacitance when driven by an ideal voltage source (zero output impedance).

(4) t_{en} is the same as t_{PZH} and t_{PZL}.

(5) t_{dis} is the same as t_{PLZ} and t_{PHZ}.

(6) Break-before-make specified by design.

7.4.7 Additional AC Characteristics

T_{amb}=25°C, voltages are referenced to GND (ground=0V), unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNIT
THD	Total harmonic distortion	f_i=600Hz to 20kHz; R_L=600Ω; C_L=50pF; V_I=0.5V(p-p); See Figure 8-16	V_{CC}=1.65V	-	0.260	-	%
			V_{CC}=2.3V	-	0.078	-	%
			V_{CC}=3.0V	-	0.078	-	%
			V_{CC}=4.5V	-	0.078	-	%
$f_{(-3dB)}$	−3 dB frequency response	R_L=50Ω; See Figure 8-17	V_{CC}=1.65V	-	200	-	MHz
			V_{CC}=2.3V	-	300	-	MHz
			V_{CC}=3.0V	-	300	-	MHz
			V_{CC}=4.5V	-	300	-	MHz
α_{iso}	Isolation (OFF-state)	R_L=50Ω; C_L=5pF; f_i=10MHz; See Figure 8-18	V_{CC}=1.65V	-	-42	-	dB
			V_{CC}=2.3V	-	-42	-	dB
			V_{CC}=3.0V	-	-40	-	dB
			V_{CC}=4.5V	-	-40	-	dB
Q_{inj}	Charge injection	C_L=0.1nF; V_{gen}=0V; R_{gen}=0Ω; f_i=1MHz; R_L=1MΩ; See Figure 8-19	V_{CC}=1.8V	-	3.3	-	pC
			V_{CC}=2.5V	-	4.1	-	pC
			V_{CC}=3.3V	-	5.0	-	pC
			V_{CC}=4.5V	-	6.4	-	pC
			V_{CC}=5.5V	-	7.5	-	pC

8 Detailed Description

8.1 Overview

The CJ74LVC1G3157 provides one analog multiplexer/demultiplexer with one digital select input (S), two independent inputs/outputs (Y0, Y1) and a common input/output (Z).

Schmitt trigger action at the select input makes the circuit tolerant of slower input rise and fall times across the entire V_{CC} range from 1.65V to 5.5V.

8.2 Functional Block Diagram

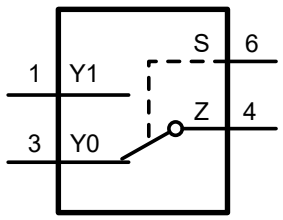


Figure 8-1 Logic symbol

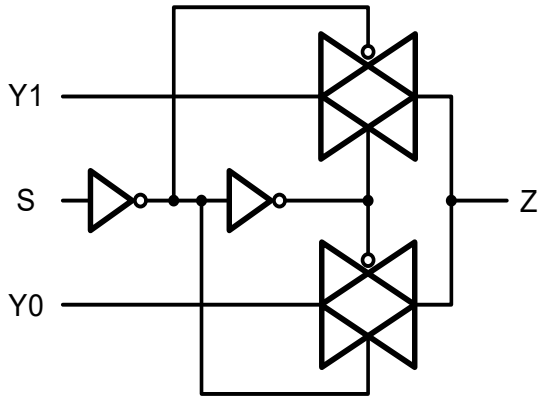


Figure 8-2 Logic diagram

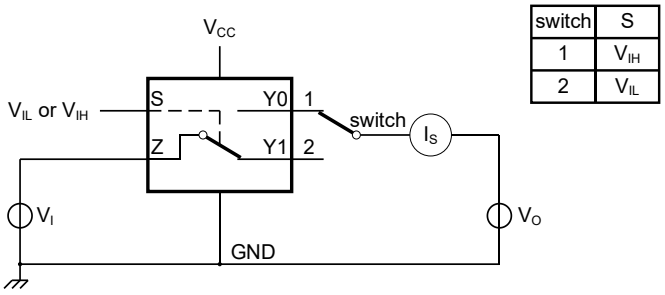
8.3 Function Table

INPUT S	CHANNEL ON
L	Y0
H	Y1

Note: H=HIGH voltage level; L=LOW voltage level.

8.4 Testing Circuit

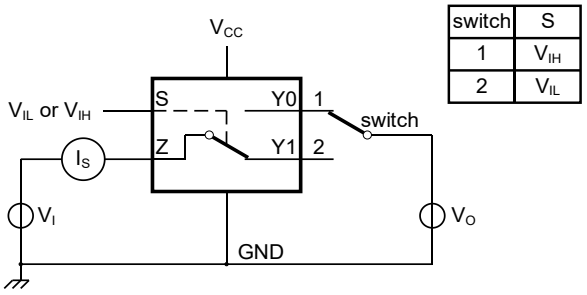
8.4.1 DC Testing Circuit



switch	S
1	V_{IH}
2	V_{IL}

V_I=V_{CC} or GND and V_O=GND or V_{CC}

Figure 8-3 Test circuit for measuring OFF-state leakage current

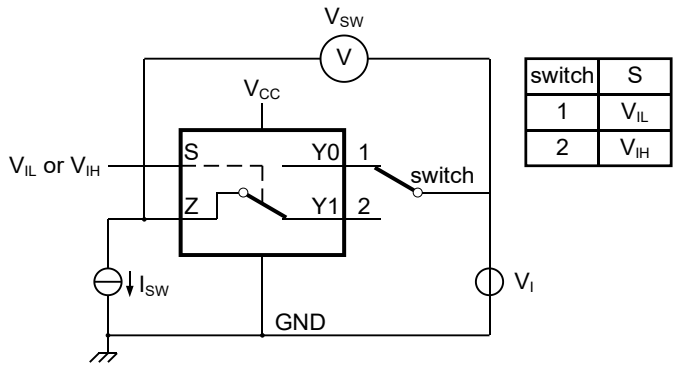


switch	S
1	V_{IH}
2	V_{IL}

V_I=V_{CC} or GND and V_O=open circuit

Figure 8-4 Test circuit for measuring ON-state leakage current

8.4.2 ON Resistance Test Circuit and Graphs



switch	S
1	V_{IL}
2	V_{IH}

R_{ON}=V_{SW}/I_{SW}

Figure 8-5 Test circuit for measuring ON resistance

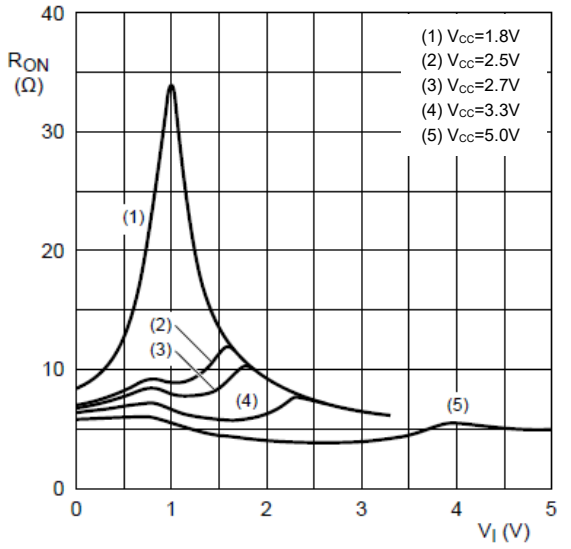


Figure 8-6 Typical ON resistance as a function of input voltage; T_{amb}=25°C

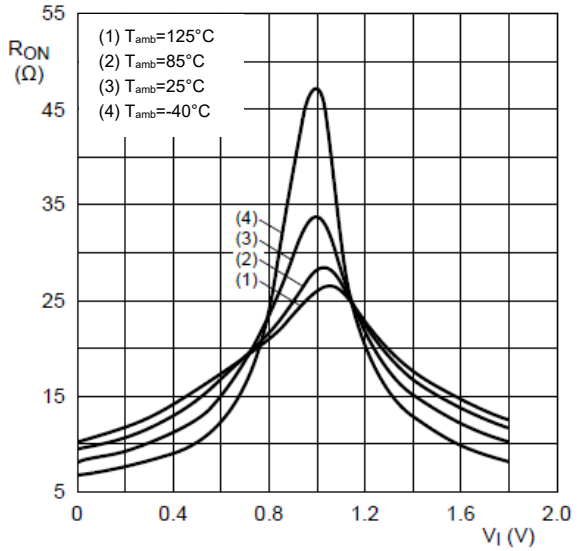


Figure 8-7 ON resistance as a function of input voltage; V_{CC}=1.8V

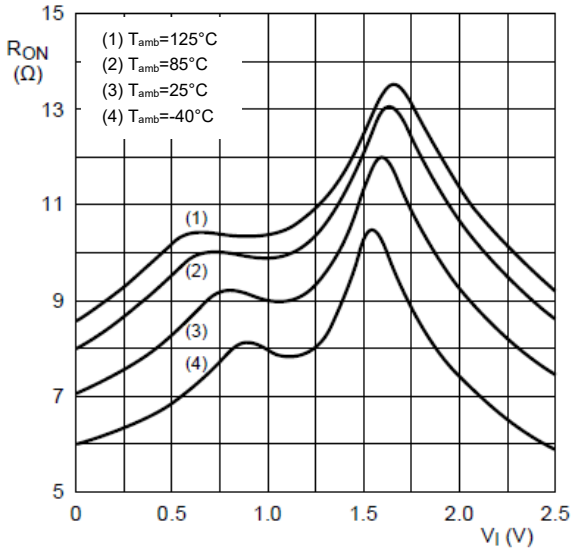


Figure 8-8 ON resistance as a function of input voltage; V_{CC}=2.5V

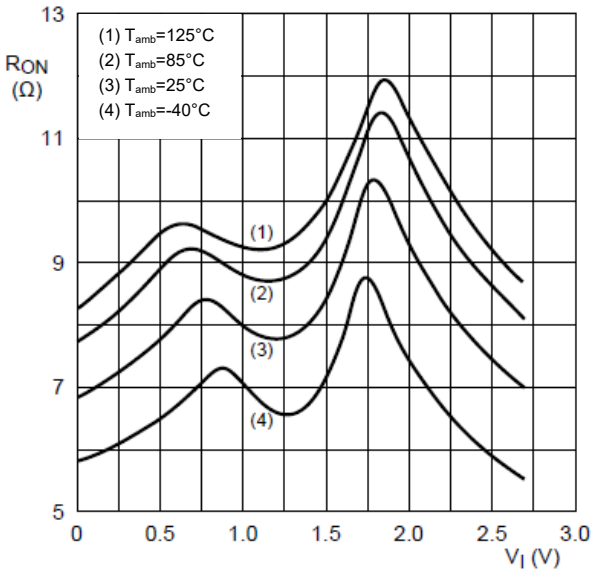


Figure 8-9 ON resistance as a function of input voltage; V_{CC}=2.7V

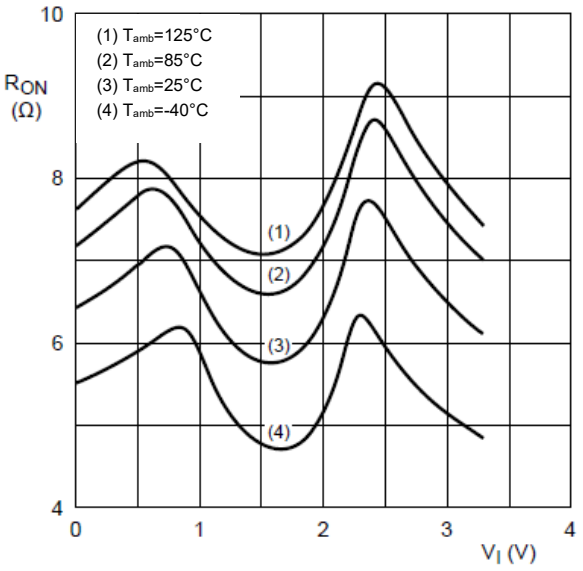


Figure 8-10 ON resistance as a function of input voltage; V_{CC}=3.3V

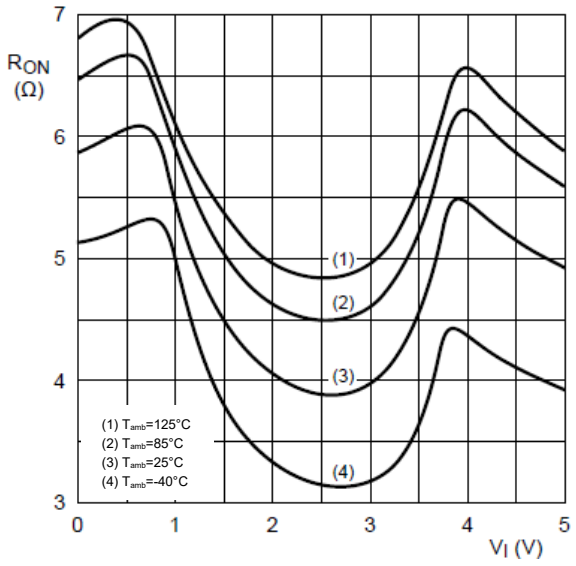
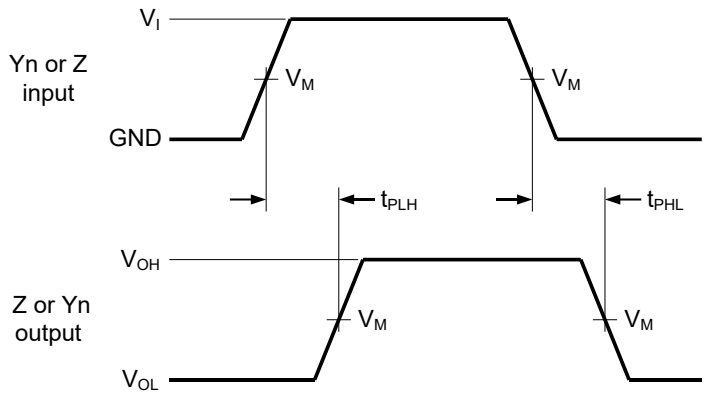


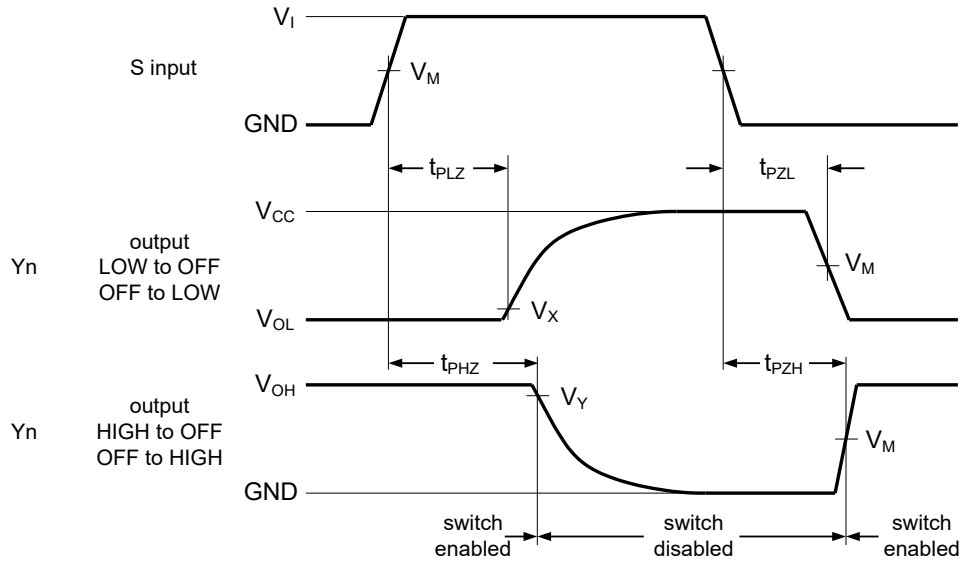
Figure 8-11 ON resistance as a function of input voltage; V_{CC}=5.0V

8.4.3 AC Testing Waveforms



Logic levels: V_{OL} and V_{OH} are typical output voltage levels that occur with the output load

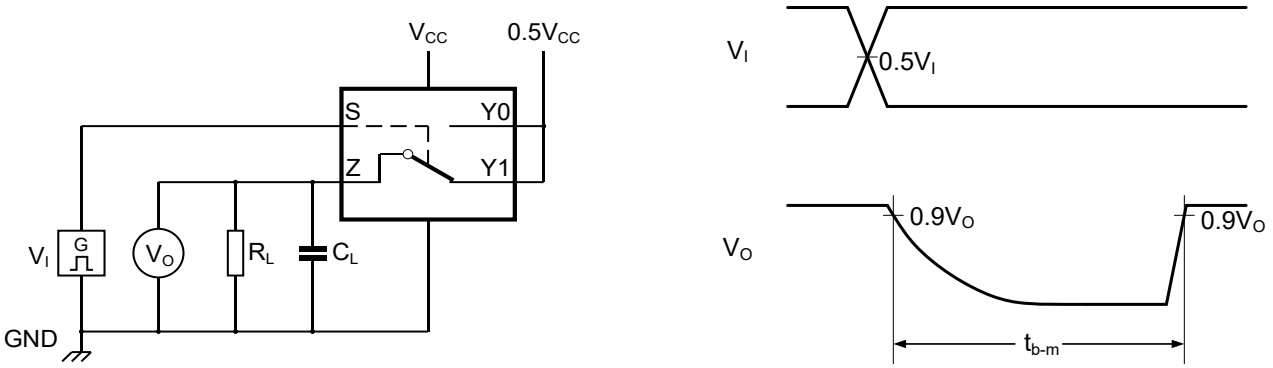
Figure 8-12 Input (Yn or Z) to output (Z or Yn) propagation delays



Logic levels: V_{OL} and V_{OH} are typical output voltage levels that occur with the output load

Figure 8-13 Enable and disable times

8.4.4 AC Testing Circuit



a. Test circuit b. Input and output measurement points

Figure 8-14 Test circuit for measuring break-before-make timing

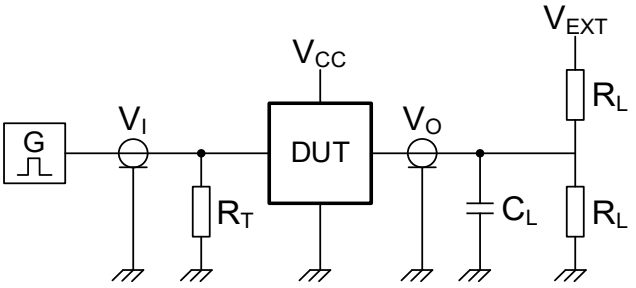


Figure 8-15 Test circuit for measuring switching times

Definitions test circuit:

R_T=Termination resistance should be equal to output impedance Z_o of the pulse generator.

C_L=Load capacitance including jig and probe capacitance.

R_L=Load resistance.

V_{EXT}=External voltage for measuring switching times.

8.4.5 Additional AC Testing Circuit

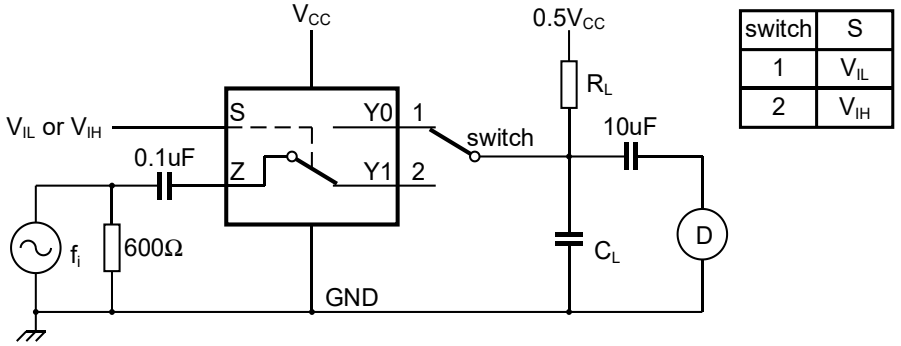
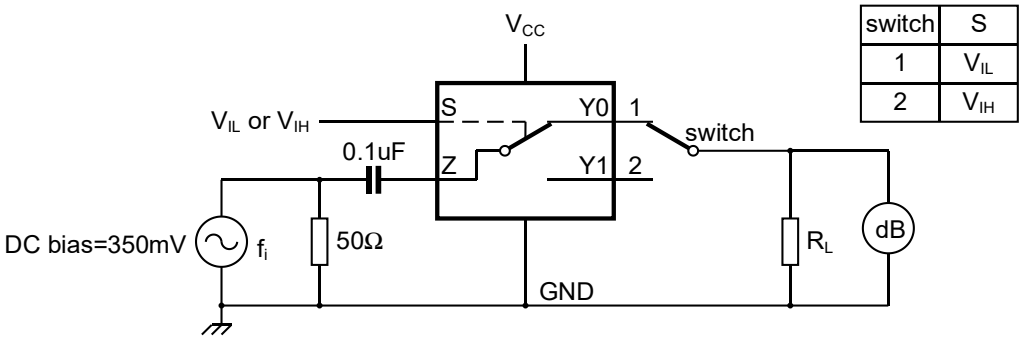
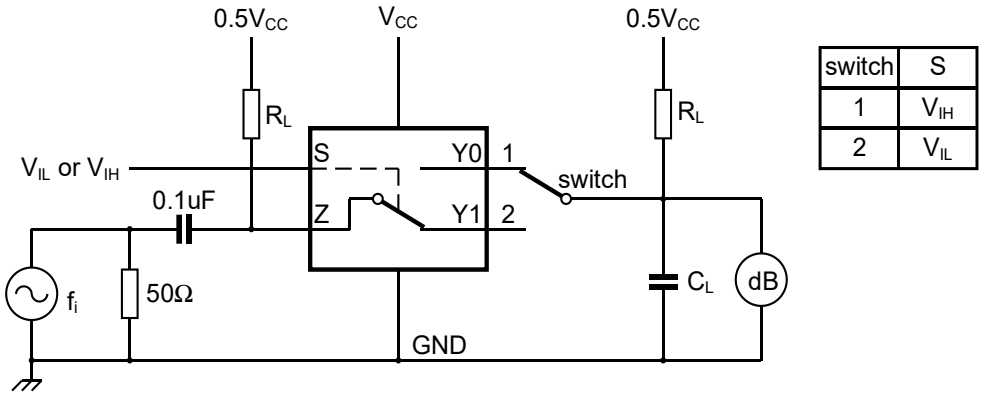


Figure 8-16 Test circuit for measuring total harmonic distortion



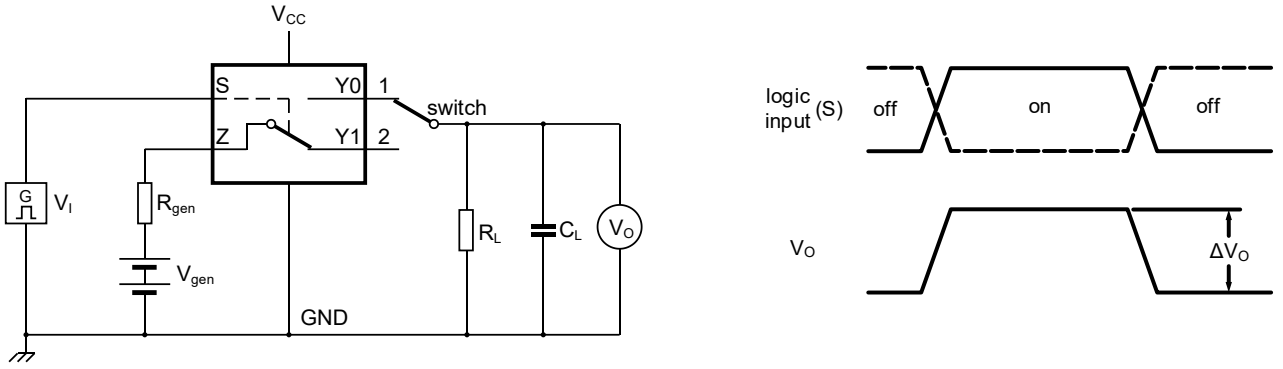
Adjust f_i voltage to obtain 0dBm level at output.
Increase f_i frequency until dB meter reads -3dB

Figure 8-17 Test circuit for measuring the frequency response when switch is in ON-state



Adjust f_i voltage to obtain 0dBm level at input

Figure 8-18 Test circuit for measuring isolation (OFF-state)



a. Test circuit

b. Input and output pulse definitions

Figure 8-19 Test circuit for measuring charge injection

$Q_{inj}=\Delta V_O x C_L$.

ΔV_O=output voltage variation.

R_{gen}=generator resistance.

V_{gen}=generator voltage.

8.4.6 Measurement Points

SUPPLY VOLTAGE	INPUT	OUTPUT		
V_{CC}	V_M	V_M	V_X	V_Y
1.65V to 5.5V	0.5xV_{CC}	0.5xV_{CC}	V_{OL}+0.3V	V_{OH}-0.3V

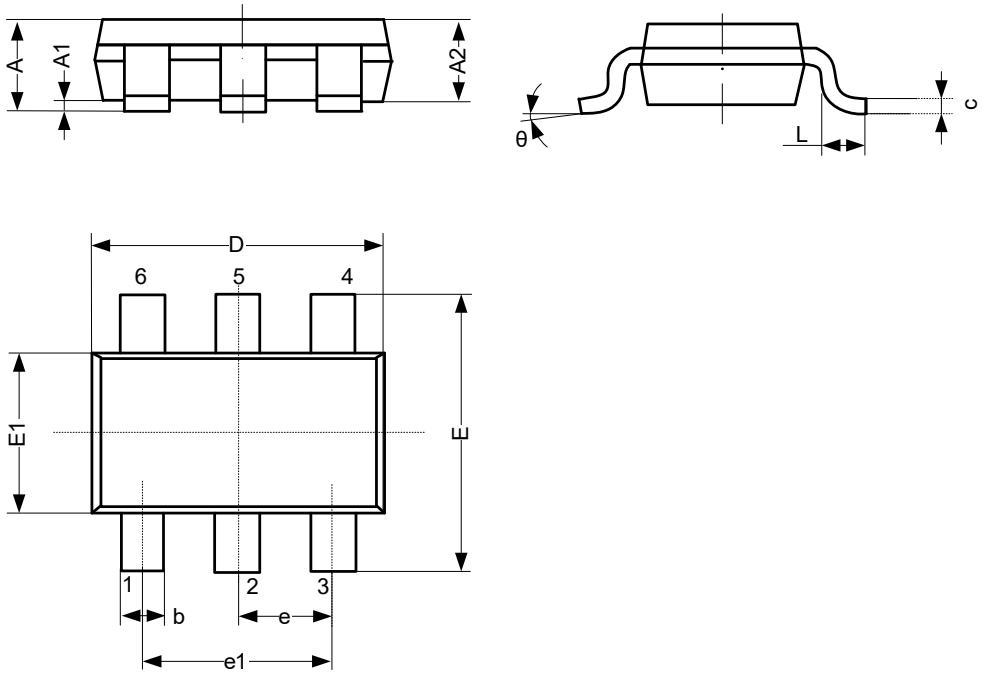
8.4.7 Test Data

SUPPLY VOLTAGE	INPUT		LOAD		V_{EXT}		
V_{CC}	V_I	t_r, t_f	C_L	R_L	t_{PLH}, t_{PHL}	t_{PZH}, t_{PHZ}	t_{PZL}, t_{PLZ}
1.65V to 1.95V	V_{CC}	≤2.0ns	50pF	500Ω	Open	GND	2xV_{CC}
2.3V to 2.7V	V_{CC}	≤2.0ns	50pF	500Ω	Open	GND	2xV_{CC}
2.7V	V_{CC}	≤2.5ns	50pF	500Ω	Open	GND	2xV_{CC}
3V to 3.6V	V_{CC}	≤2.5ns	50pF	500Ω	Open	GND	2xV_{CC}
4.5V to 5.5V	V_{CC}	≤2.5ns	50pF	500Ω	Open	GND	2xV_{CC}

9 Mechanical Information

9.1 SOT-23-6L Mechanical Information

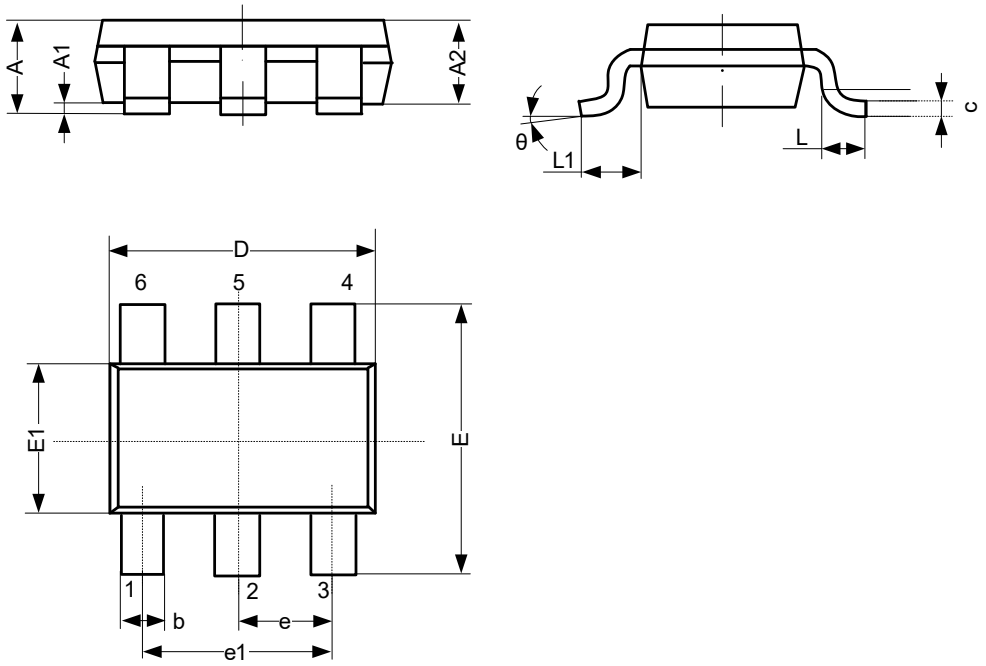
9.1.1 SOT-23-6L Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	-	-	1.25
A1	0.00	-	0.12
A2	1.00	-	1.20
b	0.30	-	0.50
c	0.10	-	0.20
D	2.82	-	3.02
E	2.60	-	3.00
E1	1.50	-	1.70
e	0.95 BSC		
e1	1.80	-	2.00
L	0.30	-	0.60
Θ	0°	-	8°
Unit: mm			

9.2 SOT-363 Mechanical Information

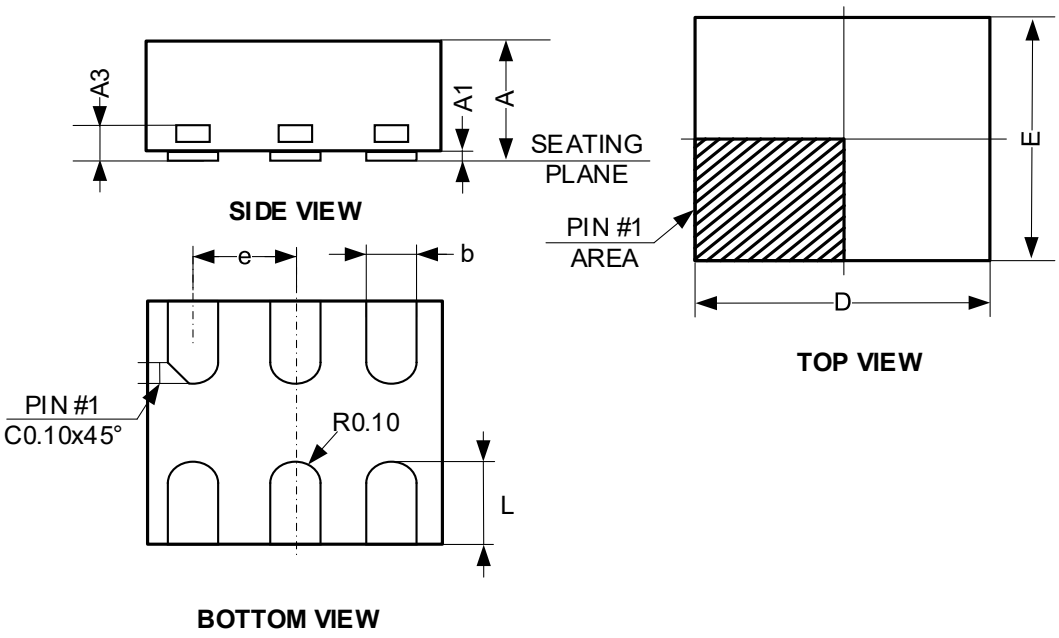
9.2.1 SOT-363 Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.90	-	1.10
A1	0.00	-	0.10
A2	0.90	-	1.00
b	0.15	-	0.35
c	0.11	-	0.175
D	2.00	-	2.20
E	2.15	-	2.45
E1	1.15	-	1.35
e	0.65 BSC		
e1	1.20	-	1.40
L	0.26	-	0.46
L1	-	0.525	-
Θ	0°	-	8°
Unit: mm			

9.3 DFN1.45x1-6L Mechanical Information

9.3.1 DFN1.45x1-6L Outline Dimensions



SYMBOL	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.51	-	0.60
A1	0.00	-	0.05
A3	-	0.15	-
b	0.15	-	0.25
D	-	1.45	-
E	-	1.00	-
e	0.50 BSC		
L	0.25	-	0.45
Unit: mm			

10 Notes and Revision History

10.1 Associated Product Family and Others

To view other products of the same type or IC products of other types, click the official website of JSCJ -- ***https:www.jscj-elec.com*** for more details.

10.2 Notes

Electrostatic Discharge Caution

This IC may be damaged by ESD. Relevant personnel shall comply with correct installation and use specifications to avoid ESD damage to the IC. If appropriate measures are not taken to prevent ESD damage, the hazards caused by ESD include but are not limited to degradation of integrated circuit performance or complete damage of integrated circuit. For some precision integrated circuits, a very small parameter change may cause the whole device to be inconsistent with its published specifications.

DISCLAIMER

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