DG9232E, DG9233E, DG9234E





1 pC Charge Injection, 100 pA Leakage, +5 V / +3 V, Dual SPST Analog Switches

DESCRIPTION

The DG9232E, DG9233E, and DG9234E are monolithic CMOS switches designed for precision signal switching. The 17 Ω low voltage parts feature low charge injection, leakage, parasitic capacitance, and fast switching.

The DG9232E, DG9233E, and DG9234E can switch both analog and digital signals. Each switch conducts equally well in both directions when on, and blocks up to the power supply level when off.

The DG9232E, DG9233E, and DG9234E contain two independent single pole single throw (SPST) switches. Switch-1 and switch-2 are normally closed for the DG9232E and normally open for the DG9233E. For the DG9234E, switch-1 is normally open and switch-2 is normally closed with a break-before-make switching timing.

The DG9232E, DG9233E, and DG9234E offer 1 nW typical power consumption and 8 kV ESD/HBM, 1 kV ESD/CDM tolerance. They are the ideal switches for use in low voltage instruments and healthcare devices, fitting the circuits of low voltage ADC and DAC, sample and hold, analog front end gain control, and signal path control. The DG9232E, DG9233E, and DG9234E are available in 8-lead MSOP and SOIC packages.

BENEFITS

- · Low charge injection and leakage
- Low parasitic capacitance
- Fast switching speed
- High ESD tolerance

FEATURES

- 1 pC charge injection
- Guaranteed 100 pA maximum switch on leakage at 25 °C
 R
- 3.8 pF switch off and 7.8 pF switch on capacitances
- +2.7 V to +5 V single supply operation
- Low on-resistance $R_{DS(on)}$: 17 Ω / typ. at 5 V
- t_{ON}: 32 ns, t_{OFF}: 10 ns switching time
- Typical power consumption: 1 nW
- Over voltage tolerant TTL / CMOS compatible
- ESD (HBM): 8000 V, ESD (CDM): 1000 V
- Latch-up current: > 300 mA (JESD78)
- Available in MSOP-8 and SOIC-8
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non-RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details.

APPLICATIONS

- Automatic test equipment
- · Process control and automation
- Data acquisition systems
- Meters and instruments
- · Medical and healthcare systems
- Communication systems
- Sample-and-hold systems
- Relay replacements
- Battery powered systems

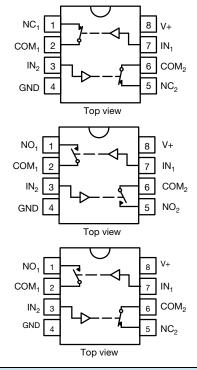
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FUNCTIONAL BLOCK DIAGRAM AND PIN CONFIGURATION



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TRUTH TABLE - DG9232E				
LOGIC SWITCH				
0	On			
1	Off			

Logic "0" \leq 0.8 V

Logic "1" \ge 2.4 V

TRUTH TABLE - DG9233E				
LOGIC	SWITCH			
0	Off			
1	On			
Logic "0" < 0.8 V	•			

Logic "1" ≥ 2.4 V

TRUTH TABLE - DG9234E				
LOGIC	SWITCH-1	SWITCH-2		
0	Off	On		
1	On	Off		

Logic "0" \leq 0.8 V Logic "1" \geq 2.4 V

ORDERING INFORMATION					
TEMPERATURE RANGE	CONFIGURATION	PACKAGE	PART NUMBER	MINIMUM ORDER / PACKAGE QUANTITY	
		8-pin MSOP	DG9232EDQ-T1-GE3	Tape and reel 2500 units	
	DG9232E DG9233E	8-pin SOIC	DG9232EDY-T1-GE3	Tape and reel 2500 units	
		8-pin SOIC	DG9232EDY-GE3	Tube 500 units	
10.00 1 05.00		8-pin MSOP	DG9233EDQ-T1-GE3	Tape and reel 2500 units	
-40 °C to +85 °C lead (Pb)-free		8-pin SOIC	DG9233EDY-T1-GE3	Tape and reel 2500 units	
		8-pin SOIC	DG9233EDY-GE3	Tube 500 units	
		8-pin MSOP	DG9234EDQ-T1-GE3	Tape and reel 2500 units	
	DG9234E	8-pin SOIC	DG9234EDY-T1-GE3	Tape and reel 2500 units	
		8-pin SOIC	DG9234EDY-GE3	Tube 500 units	

ABSOLUTE MAXIMUM RATINGS				
PARAMETER		LIMIT	UNIT	
Reference V+ to GND		-0.3 to +6	V	
IN, COM, NC, NO ^a		-0.3 to (V+ + 0.3)	v	
Continuous current (any terminal)		± 20	mA	
Peak current (pulsed at 1 ms, 10 % duty cycle)		± 40	IIIA	
ESD (HBM) (MIL-STD-883, method 3015)		> 8000	V	
ESD (CDM) (ANSI / ESDA / JEDEC [®] JS-002)		> 1000	V	
Latch up current, per JESD78		300	mA	
Storage temperature	D suffix	-65 to +125	°C	
Power dissipation (packages) ^b	8-pin narrow body SOIC ^c	400	mW	

Notes

a. Signals on NC, NO, or COM or IN exceeding V+ will be clamped by internal diodes. Limit forward diode current to maximum current ratings.

b. All leads welded or soldered to PC board.

c. Derate 6.5 mW/°C above 70 °C.

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.



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SPECIFICATIONS (V+ = 3	3 V)						
PARAMETER	SYMBOL	TEST CONDITIONS OTHERWISE UNLESS SPECIFIED	TEMP. ^a		SUFFIX °C to +8		UNIT
		V+ = 3 V, \pm 10 %, V_{IN} = 0.8 V or 2.4 V $^{\rm e}$		MIN. ^c	TYP. ^b	MAX. ^c	
Analog Switch							
Analog signal range ^d	V _{ANALOG}		Full	0	-	3	V
Drain-source on-resistance	Brach	$V_{NO} \text{ or } V_{NC} = 1.5 \text{ V}, \text{ V} + = 2.7 \text{ V}$	Room	-	35	50	
	R _{DS(on)}	$I_{COM} = 5 \text{ mA}$	Full	-	35	65	
R _{DS(on)} match ^d	$\Delta R_{DS(on)}$	V_{NO} or $V_{NC} = 1.5 V$	Room	-	0.4	2	Ω
R _{DS(on)} flatness ^d	R _{DS(on)} flatness	V_{NO} or V_{NC} = 1 V and 2 V	Room	-	4	8	
NO or NC off leakage current ^g	hanser	V_{NO} or $V_{NC} = 1 \text{ V/2 V}$, $V_{COM} = 2 \text{ V/1 V}$	Room	-100	5	100	
NO OF NO OF leakage current 9	I _{NO/NC(off)}	$v_{\rm NO}$ or $v_{\rm NC} = 1$ $v/2$ v , $v_{\rm COM} = 2$ $v/1$ v	Full	-5000	5	5000	
COM off leakage current ^g		$V_{COM} = 1 \text{ V/2 V}, V_{NO} \text{ or } V_{NC} = 2 \text{ V/1 V}$	Room	-100	5	100	nA
CON ON leakage current 9	I _{COM(off)}	$v_{\rm COM} = 1$ $v/2$ v , $v_{\rm NO}$ of $v_{\rm NC} = 2$ $v/1$ v	Full	-5000	5	5000	рА
Channel-on leakage current ^g	lanu y	$V_{COM} = V_{NO}$ or $V_{NC} = 1 \text{ V/2 V}$	Room	-200	5	200	pA
Channel-Onleakage current 3	COM(on)	$V_{COM} = V_{NO} \text{ or } V_{NC} = 1 \text{ V/2 V}$	Full	-10 000	5	10 000	
Digital Control							-
Input current	$I_{\rm INL}$ or $I_{\rm INH}$		Full	-	0.001	-	μA
Dynamic Characteristics							
Turn-on time	t _{ON}		Room	-	43	120	
	UN	V_{NO} or $V_{NC} = 1.5 V$	Full	-	-	200	ns
Turn-off time	t _{OFF}		Room	-	16	50	115
	"OFF		Full	-	-	120	
Charge injection ^d	Q _{INJ}	C_L = 1 nF, V_{GEN} = 0 V, R_{GEN} = 0 Ω	Room	-	-0.28	-	рС
Off-isolation	OIRR	$R_{L} = 50 \Omega, C_{L} = 5 pF, f = 1 MHz$	Room	-	-80	-	dB
Crosstalk	X _{TALK}	$H_{L} = 30.32, 0L = 3.01, 1 = 1.0012$	Room	-	-108	-	uD
NC and NO capacitance	C _{S(off)}		Room	-	4	-	
Channel-on capacitance	C _{COM(on)}	f = 1 MHz	Room	-	8	-	pF
COM-off capacitance	C _{COM(off)}		Room	-	4	-	
Power Supply							
Positive supply range	V+			2.7	-	5.5	V
Power supply current	I+	V+ = 3.3 V, V_{IN} = 0 V or 3.3 V		0.0003	-	1	μA

Notes

a. Room = 25 °C, full = as determined by the operating suffix.

b. Typical values are for design aid only, not guaranteed nor subject to production testing.

c. The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this datasheet.

d. Guarantee by design, nor subjected to production test.

e. V_{IN} = input voltage to perform proper function.

f. Difference of min. and max. values.

g. Guaranteed by 5 V leakage tests, not production tested.

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Analog Switch $V_{+} = 5 V, \pm 10 \%, V_{IN} = 0.8 V or 2.4 V^{\circ}$ Analog signal range dVANALOGDrain-source on-resistance $R_{DS(on)}$ $R_{DS(on)}$ V_{NO} or $V_{NC} = 3.5 V, V_{+} = 4.5 V$ $I_{COM} = 5 mA$ $R_{DS(on)}$ match d $\Delta R_{DS(on)}$ $R_{DS(on)}$ flatness d $R_{DS(on)}$ $R_{DS(on)}$ flatness V_{NO} or $V_{NC} = 1 V/4 V, V_{COM} = 4 V/1 V$ $R_{DS(on)}$ flatness V_{NO} or $V_{NC} = 1 V/4 V, V_{COM} = 4 V/1 V$ $R_{DS(on)}$ flatness $V_{OOM} = 1 V/4 V, V_{OOM} = 4 V/1 V$ $R_{DS(on)}$ flatness $V_{COM} = 1 V/4 V, V_{NO}$ or $V_{NC} = 4 V/1 V$ $R_{DS(on)}$ flatness $V_{COM} = V_{NO}$ or $V_{NC} = 1 V/4 V$ $R_{DS(on)}$ flatness $V_{COM} = V_{NO}$ or $V_{NC} = 1 V/4 V$ $R_{DS(on)}$ flatnes $V_{COM} = V_{NO}$ or $V_{NC} = 1 V/4 V$ $R_{DS(on)}$ flatnes $V_{COM} = V_{NO}$ or $V_{NC} = 1 V/4 V$ $R_{DS(on)}$ flatnes $V_{COM} = V_{NO}$ or $V_{NC} = 3 V$ $R_{DS(on)}$ flatnes V_{NO} or $V_{NC} = 5 P, f, f = 1 MHz$ $R_{DS(on)}$ flatnes $R_{L} = 50 \Omega, C_L = 5 pF, f = 1 MHz$ $R_{DS(on)$					
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Analog signal range dVANALOGImage: Characteristic stance $R_{DS(on)}$ V_{NO} or $V_{NC} = 3.5$ V, V+ = 4.5 V $I_{COM} = 5$ mAF $R_{DS(on)}$ match d $\Delta R_{DS(on)}$ V_{NO} or $V_{NC} = 3.5$ VF $R_{DS(on)}$ flatness d $R_{DS(on)}$ V_{NO} or $V_{NC} = 3.5$ VF $R_{DS(on)}$ flatness d $R_{DS(on)}$ V_{NO} or $V_{NC} = 1$ V, 2 V, and 3 VFNO or NC off leakage current g $I_{NO/NC(off)}$ V_{NO} or $V_{NC} = 1$ V/4 V, $V_{COM} = 4$ V/1 VFCOM off leakage current $I_{COM(off)}$ $V_{COM} = 1$ V/4 V, V_{NO} or $V_{NC} = 4$ V/1 VFChannel-on leakage current $I_{COM(off)}$ $V_{COM} = 1$ V/4 V, V_{NO} or $V_{NC} = 4$ V/1 VFDigital ControlInput current I_{INL} or I_{INH} TDynamic CharacteristicsTurn-on time t_{OFF} V_{NO} or $V_{NC} = 3$ VFCharge injection d Q_{INJ} $C_L = 1$ nF, $V_{GEN} = 0$ V, $R_{GEN} = 0$ ΩFOff-isolationOIRR $R_L = 50$ Ω, $C_L = 5$ pF, f = 1 MHzFNC and NO capacitance $C_{(off)}$ f = 1 MHzFCoM-off capacitance $C_{D(off)}$ f = 1 MHzFPower SupplyFFF		MIN.	c TYP. b	MAX. °	_
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COM off leakage currentICOM(off)VCOM = 1 V/4 V, VNO or VNC = 4 V/1 VFChannel-on leakage currentICOM(off)VCOM = VNO or VNC = 1 V/4 VFDigital ControlInput currentInput currentINHDynamic CharacteristicsTurn-on time t_{ON} V_{NO} or $V_{NC} = 3 V$ FTurn-off time t_{OFF} $V_{CL} = 1 nF, V_{GEN} = 0 V, R_{GEN} = 0 \Omega$ FOff-isolationOIRR $R_L = 50 \Omega, C_L = 5 pF, f = 1 MHz$ FNC and NO capacitance $C_{D(off)}$ f = 1 MHzFPower SupplyFFF	Room	om -100) 10	100	
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Input current I _{INL} or I _{INH} Dynamic Characteristics Turn-on time t_{ON} V_{NO} or $V_{NC} = 3 V$ F Turn-off time t_{OFF} V_{NO} or $V_{NC} = 3 V$ F Charge injection ^d QINJ $C_L = 1 \text{ nF}, V_{GEN} = 0 V, R_{GEN} = 0 \Omega$ F Off-isolation OIRR $R_L = 50 \Omega, C_L = 5 \text{ pF}, f = 1 \text{ MHz}$ F NC and NO capacitance $C_{(off)}$ f = 1 MHz F Composition $C_{D(on)}$ f = 1 MHz F Power Supply F F F	Full	ll -10 00	- 00	10 000	
Dynamic Characteristics Image: Number of the second s					
$\begin{tabular}{ c c c c c c } \hline Turn-on time & t_{ON} & & & & & & & & & & & & & & & & & & &$	Full	II -	0.001	-	μA
$\begin{tabular}{ c c c c c c } \hline Turn-on time & t_{ON} & & & & & & & & & & & & & & & & & & &$					
Turn-off time t_{OFF} $V_{NO} \text{ or } V_{NC} = 3 \text{ V}$ FCharge injection d Q_{INJ} $C_L = 1 \text{ nF}, \text{ V}_{GEN} = 0 \text{ V}, \text{ R}_{GEN} = 0 \Omega$ FOff-isolationOIRR $R_L = 50 \Omega, C_L = 5 \text{ pF}, f = 1 \text{ MHz}$ FCrosstalk X_{TALK} $R_L = 50 \Omega, C_L = 5 \text{ pF}, f = 1 \text{ MHz}$ FNC and NO capacitance $C_{(off)}$ $f = 1 \text{ MHz}$ FCOM-off capacitance $C_{D(off)}$ $f = 1 \text{ MHz}$ FPower Supply	Room	om -	32	75	
Turn-off time t_{OFF} FCharge injection d Q_{INJ} $C_L = 1 \text{ nF}, V_{GEN} = 0 \text{ V}, R_{GEN} = 0 \Omega$ FOff-isolationOIRR $R_L = 50 \Omega, C_L = 5 \text{ pF}, f = 1 \text{ MHz}$ FCrosstalk X_{TALK} $R_L = 50 \Omega, C_L = 5 \text{ pF}, f = 1 \text{ MHz}$ FNC and NO capacitance $C_{(off)}$ $f = 1 \text{ MHz}$ FCoM-off capacitance $C_{D(on)}$ $f = 1 \text{ MHz}$ FPower Supply	Full	II -	-	150	ns
$\begin{array}{ c c c c c c } \hline Charge injection ^{d} & Q_{INJ} & C_{L} = 1 \text{ nF}, \text{V}_{\text{GEN}} = 0 \text{ V}, \text{R}_{\text{GEN}} = 0 \Omega & \text{F} \\ \hline Off-\text{isolation} & OIRR & \\ \hline Crosstalk & X_{TALK} & R_{L} = 50 \Omega, C_{L} = 5 \text{ pF}, \text{f} = 1 \text{MHz} & \hline \text{F} \\ \hline \text{R} \\ NC \text{ and NO capacitance} & C_{(off)} \\ \hline Channel-on capacitance & C_{D(on)} \\ \hline COM-off \text{ capacitance} & C_{D(off)} & f = 1 \text{MHz} & \hline \text{F} \\ \hline \text{Power Supply} & \hline \end{array}$	Room	om -	10	50	110
$\begin{array}{c c} \hline Off-isolation & OIRR \\ \hline Crosstalk & X_{TALK} & R_L = 50 \ \Omega, \ C_L = 5 \ pF, \ f = 1 \ MHz & F \\ \hline F \\ \hline NC \ and \ NO \ capacitance & C_{(off)} \\ \hline Channel-on \ capacitance & C_{D(on)} \\ \hline COM-off \ capacitance & C_{D(off)} \\ \hline F \\ \hline Power \ Supply & \hline \end{array}$	Full	11 -	-	100	
$\begin{tabular}{ c c c c c c } \hline Crosstalk & X_{TALK} & R_L = 50 \ \Omega, \ C_L = 5 \ pF, \ f = 1 \ MHz & F \ \hline \\ \hline NC \ and \ NO \ capacitance & C_{(off)} & f = 1 \ MHz & F \ \hline \\ \hline Channel-on \ capacitance & C_{D(on)} & f = 1 \ MHz & F \ \hline \\ \hline COM-off \ capacitance & C_{D(off)} & F \ \hline \\ \hline Power \ Supply & \hline \\ \hline \end{tabular}$	Room	om -	-0.78	-	рС
Crosstalk X_{TALK} $Table f$ F NC and NO capacitance $C_{(off)}$ F Channel-on capacitance $C_{D(on)}$ $f = 1 \text{ MHz}$ COM-off capacitance $C_{D(off)}$ F Power Supply F	Room	om -	-80	-	dB
Channel-on capacitance $C_{D(on)}$ f = 1 MHz F COM-off capacitance $C_{D(off)}$ F Power Supply	Room	om -	-108	-	ub
COM-off capacitance C _{D(off)} F Power Supply	Room	om -	3.8	-	
Power Supply	Room	om -	7.8	-	pF
	Room	om -	3.8	-	
Positive supply range V+					
		2.7	-	5.5	V
Power supply current I+ V+ = 5.5 V, V_{IN} = 0 V or 5.5 V		-	-	1	μA

Notes

a. Room = 25 °C, full = as determined by the operating suffix.

b. Typical values are for design aid only, not guaranteed nor subject to production testing.

c. The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this datasheet.

d. Guarantee by design, nor subjected to production test.

e. V_{IN} = input voltage to perform proper function.

f. Difference of min. and max. values.

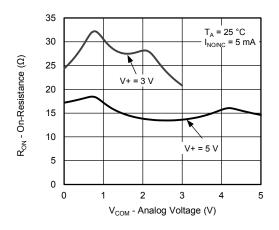
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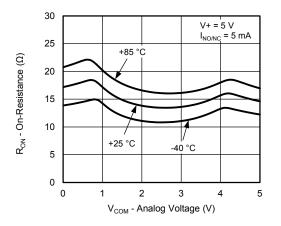
DG9232E, DG9233E, DG9234E

Vishay Siliconix

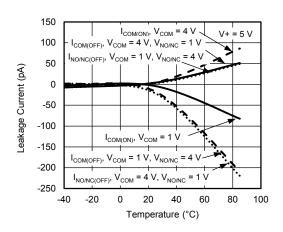
TYPICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$, unless otherwise noted)



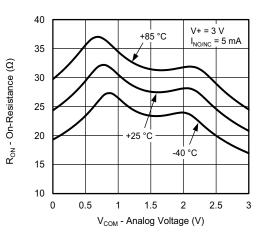
On-Resistance vs. Analog Voltage



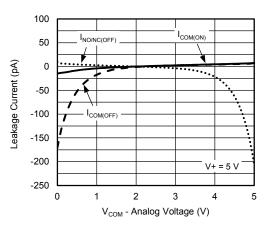
On-Resistance vs. Analog Voltage



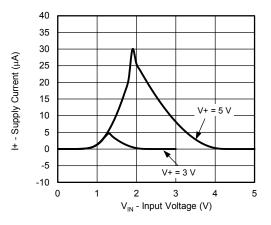
Leakage Current vs. Temperature



On-Resistance vs. Analog Voltage



Leakage Current vs. Analog Voltage



Supply Current vs. Input Voltage

S16-1451-Rev. A, 25-Jul-16

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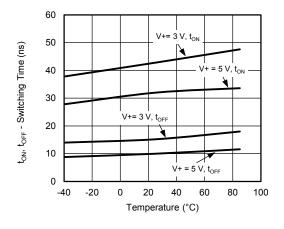
For technical questions, contact: analogswitchtechsupport@vishay.com THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000



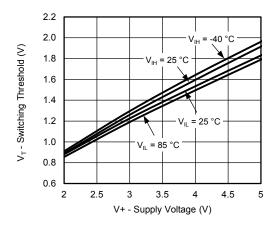
DG9232E, DG9233E, DG9234E

Vishay Siliconix

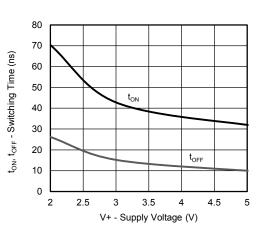
TYPICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$, unless otherwise noted)



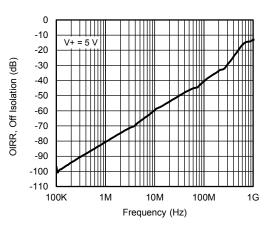
Switching Time vs. Temperature



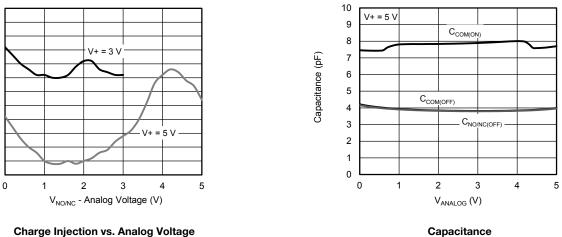
Switching Threshold vs. Supply Voltage



Switching Time vs. Supply Voltage



OIRR, Off Isolation vs. Frequency



Capacitance

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0

-0.1

-0.2

-0.3

-0.4

-0.5 -0.6

-0.7

-0.8

-0.9

-1.0

-1.1

-1.2

Q_{INJ} - Charge Injection (pC)

6

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S16-1451-Rev. A, 25-Jul-16

7

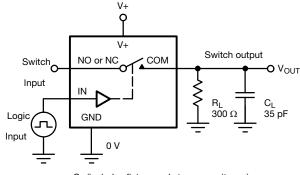
Fig. 3 - Charge Injection

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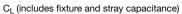
DG9232E, DG9233E, DG9234E

TEST CIRCUITS

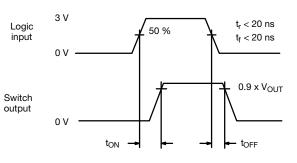
VISHAY



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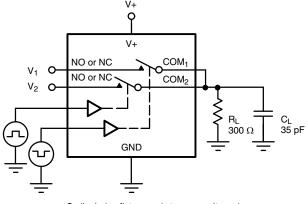


Logic "1" = switch on Logic input waveforms inverted for switches that have the opposite logic sense.

Fig. 1 - Switching Time

Logic

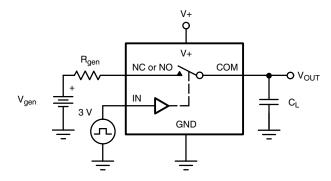
3 V

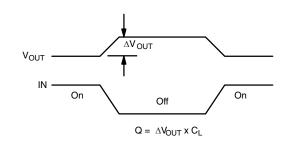


input t_f < 5 ns 0 V $V_{NC} = V_{NO}$ V_{O} 90 % Switch 0 V output t_D tn

CL (includes fixture and stray capacitance)

Fig. 2 - Break-Before-Make Interval

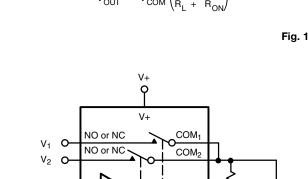




IN depends on switch configuration: input polarity determined by sense of switch.

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t_r < 5 ns



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TEST CIRCUITS

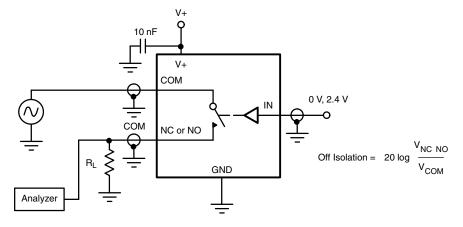


Fig. 4 - Off-Isolation

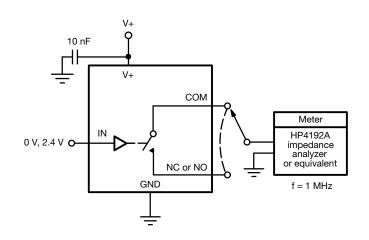


Fig. 5 - Channel Off/On Capacitance

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package/tape drawings, part marking, and reliability data, see www.vishay.com/ppg?75165.



Package Information

Vishay Siliconix

SOIC (NARROW): 8-LEAD JEDEC Part Number: MS-012





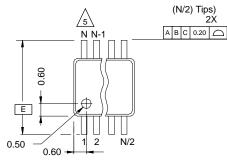
	MILLIM	IETERS	INC	HES
DIM	Min	Мах	Min	Max
A	1.35	1.75	0.053	0.069
A ₁	0.10	0.20	0.004	0.008
В	0.35	0.51	0.014	0.020
С	0.19	0.25	0.0075	0.010
D	4.80	5.00	0.189	0.196
E	3.80	4.00	0.150	0.157
е	1.27	BSC	0.050	BSC
н	5.80	6.20	0.228 0.244	
h	0.25	0.50	0.010	0.020
L	0.50	0.93	0.020	0.037
q	0°	8°	0°	8°
S	0.44	0.64	0.018	0.026
ECN: C-06527-Rev. I, 11-Sep-06 DWG: 5498				



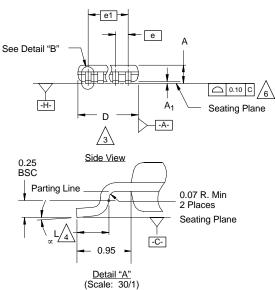
Package Information Vishay Siliconix

MSOP: 8-LEADS

JEDEC Part Number: MO-187, (Variation AA and BA)







NOTES:

/4.\ /5.\

1. Die thickness allowable is 0.203 ± 0.0127 .

2 Dimensioning and tolerances per ANSI.Y14.5M-1994.

- /3.\ Dimensions "D" and "E1" do not include mold flash or protrusions, and are measured at Datum plane -H- , mold flash or protrusions shall not exceed 0.15 mm per side.
 - Dimension is the length of terminal for soldering to a substrate.

Terminal positions are shown for reference only.

- <u>/6</u>. Formed leads shall be planar with respect to one another within 0.10 mm at seating plane.
- /7.\ The lead width dimension does not include Dambar protrusion. Allowable Dambar protrusion shall be 0.08 mm total in excess of the lead width dimension at maximum material condition. Dambar cannot be located on the lower radius or the lead foot. Minimum space between protrusions and an adjacent lead to be 0.14 mm. See detail "B" and Section "C-C".

/8.\ Section "C-C" to be determined at 0.10 mm to 0.25 mm from the lead tip.

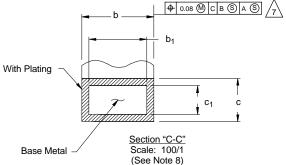
Controlling dimension: millimeters. 9.

10. This part is compliant with JEDEC registration MO-187, variation AA and BA.

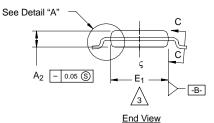
/11. Datums -A- and -B- to be determined Datum plane -H-.

/12 Exposed pad area in bottom side is the same as teh leadframe pad size.









N = 8L

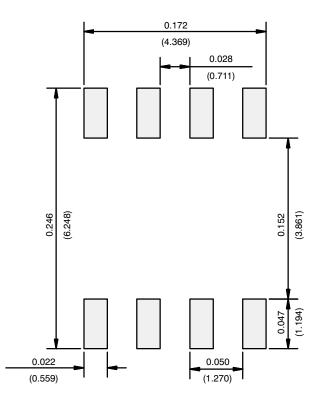
	MILLIMETERS			
Dim	Min	Nom	Max	Note
Α	-	-	1.10	
A ₁	0.05	0.10	0.15	
A ₂	0.75	0.85	0.95	
b	0.25	-	0.38	8
b ₁	0.25	0.30	0.33	8
С	0.13	-	0.23	
c ₁	0.13	0.15	0.18	
D		3.00 BSC		3
Е		4.90 BSC		
E ₁	2.90	3.00	3.10	3
е		0.65 BSC		
e ₁		1.95 BSC		
L	0.40	0.55	0.70	4
Ν		8		5
α	0°	4°	6°	
ECN: T-02 DWG: 58	2080—Rev. C 67	, 15-Jul-02		

Application Note 826

Vishay Siliconix



RECOMMENDED MINIMUM PADS FOR SO-8



Recommended Minimum Pads Dimensions in Inches/(mm)

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