ORDERING INFORMATION			
PART NUMBER	**TEMPERATURE RANGE**	**PACKAGE**	**SIZE**
DG2750DN-T1-E4	-40 °C to +85 °C	miniQFN-10	1.4 mm x 1.8 mm x 0.55 mm
DG2750DN1-T1-GE4		UTMQFN-10	1.4 mm x 1.8 mm x 0.35 mm

TRUTH TABLE, DG2750		
IN1 (PIN 4)	**IN2 (PIN 8)**	**FUNCTION**
0	X	COM1 = NC1
1	X	COM1 = NO1
X	0	COM2 = NC2
X	1	COM2 = NO2

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C, unless otherwise noted)			
PARAMETER		**LIMIT**	**UNIT**
Reference to GND	V+, IN	-0.3 to +6	V
	COM, NO, NC [a]	(V+) -5.5 or -2.5 whichever higher, (V+ + 0.3)	
Current (Any Terminal except COM, NO, NC, IN)		30	mA
Continuous Current (COM, NO, NC, IN)		± 250	
Peak Current (Pulsed at 1 ms, 10 % Duty Cycle)		± 500	
Storage Temperature (D Suffix)		-65 to +150	°C
Power Dissipation (Packages) [b]	miniQFN-10 [c]	208	mW
ESD (Human Body Model) I/O to GND		8	kV
Latch-up (per JESD78)		600	mA

Notes

a. Signals on COM, NO, NC, 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 2.6 mW/°C above 70 °C

SPECIFICATIONS (V+ = 2.7 V, ± 10 %)							
PARAMETER	**SYMBOL**	**TEST CONDITIONS OTHERWISE UNLESS SPECIFIED**	**TEMP. [a]**	**LIMITS -40 °C to +85 °C**			**UNIT**
				MIN. [b]	**TYP. [c]**	**MAX. [b]**	
Analog Switch							
Analog Signal Range [d]	V_{ANALOG}		Full	-2.5	-	V+	V
On-Resistance	$R_{DS(on)}$	V+ = 2.7 V, V_S = ((V+) -4.5 V, -1 V, 0 V, 1 V, 2 V, V+), I_S = 100 mA	Room	-	0.45	1	Ω
			Full	-	-	1.3	
On-Resistance Match	ΔR_{ON}		Room	-	0.1	-	
On-Resistance Flatness	R_{ON} Flatness		Room	-	0.3	-	
Switch Off Leakage Current	$I_{NO/NC(off)}$	V+ = 2.7 V, $V_{NC/NO}$ = -2.5 V or 2.5 V, V_{COM} = 2.5 V or -2.5 V	Room	-	50	-	nA
	$I_{COM(off)}$		Full	-250	-	250	
Channel On Leakage Current	$I_{COM(on)}$		Room	-	50	-	
			Full	-250	-	250	
Digital Control							
Input Voltage High	V_{INH}	V+ = 2.7 V to 4.3 V	Full	1.4	-	-	V
Input Voltage Low	V_{INL}		Full	-	-	0.6	
Input Capacitance	C_{IN}		Room	-	6.5	-	pF
Input Current	I_{INL} or I_{INH}	V_{IN} = 0 or V+	Full	-1	-	1	µA

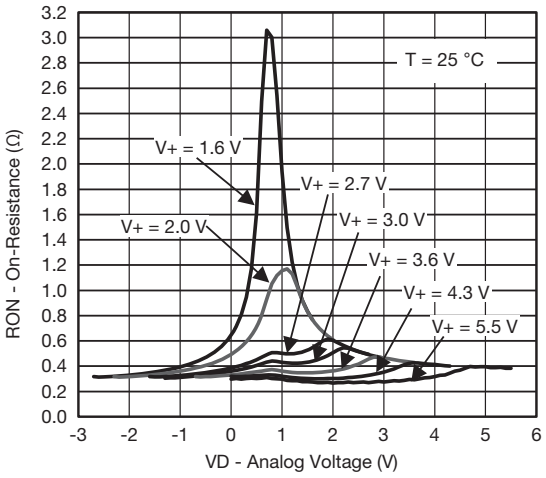
SPECIFICATIONS (V+ = 2.7 V, ± 10 %)							
PARAMETER	**SYMBOL**	**TEST CONDITIONS OTHERWISE UNLESS SPECIFIED**	**TEMP. [a]**	**LIMITS -40 °C to +85 °C**			**UNIT**
				MIN. [b]	**TYP. [c]**	**MAX. [b]**	
Dynamic Characteristics							
Break-Before-Make Time [e, d]	t_{BBM}	V+ = 3 V, V_S = 1.5 V, R_L = 50 Ω, C_L = 35 pF	Room	800	1160	-	ns
			Full	1000	-	-	
Enable Turn-On Time [e, d]	$t_{ON(EN)}$		Room	-	1200	2100	
			Full	-	-	2500	
Enable Turn-Off Time [e, d]	$t_{OFF(EN)}$		Room	-	33	130	
			Full	-	-	150	
Charge Injection [d]	Q_{INJ}	C_L = 1 nF, R_{GEN} = 0 Ω, V_{GEN} = 0 V	Room	-	4	-	pC
Total Harmonic Distortion Plus Noise [d]	THD+N	f = 20 Hz to 20 kHz, V_{COM} = 0.5 V_{P-P}, R_S = R_L = 600 Ω; DC bias = 0 V		-	< -98	-	dB
Off-Isolation [d]	OIRR	V+ = 3 V, R_L = 50 Ω, C_L = 5 pF, f = 300 kHz		-	-54	-	dB
Crosstalk [d, f]	X_{TALK}			-	-60	-	
Bandwidth [d]	BW	V+ = 3 V, R_L = 50 Ω, -3 dB		-	49	-	MHz
Channel-Off Capacitance [d]	$C_{NC/NO(off)}$	V+ = 3 V, f = 1 MHz		-	36	-	pF
Channel-On Capacitance [d]	$C_{COM/NC/NO(on)}$			-	106	-	
Power Supply							
Power Supply Range	V+			1.6	-	5.5	V
Power Supply Current	I+	V_{IN} = 0 V, or V+	Full	-	-	2	µA

Notes

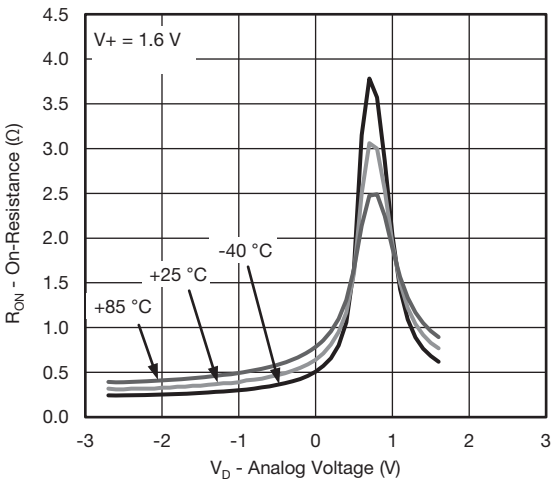
a. Room = 25 °C, Full = as determined by the operating suffix
b. The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this data sheet
c. Typical values are for design aid only, not guaranteed nor subject to production testing
d. Guarantee by design, not subjected to production test
e. V_{IN} = V+ voltage to perform proper function
f. Crosstalk measured between channels

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.

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)

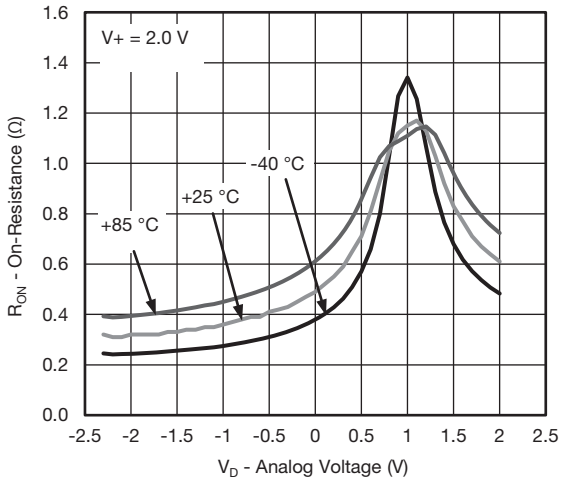


On-Resistance vs. V_D and Single Supply Voltage

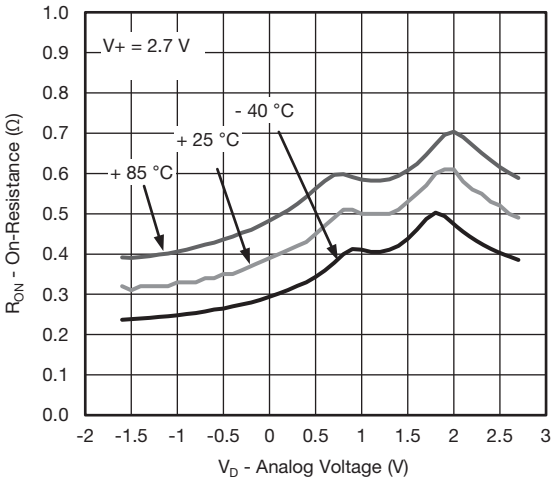


On-Resistance vs. Analog Voltage and Temperature

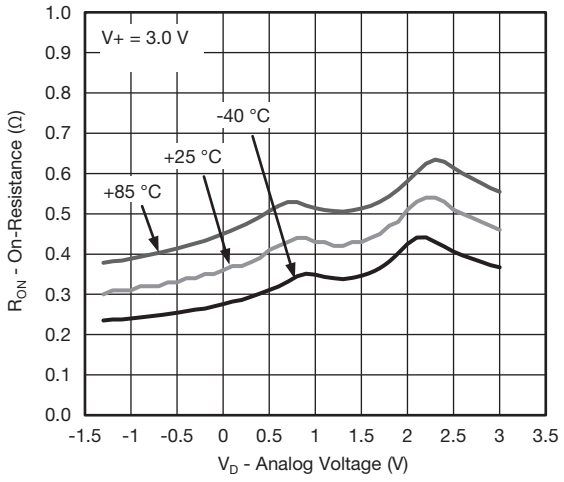
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



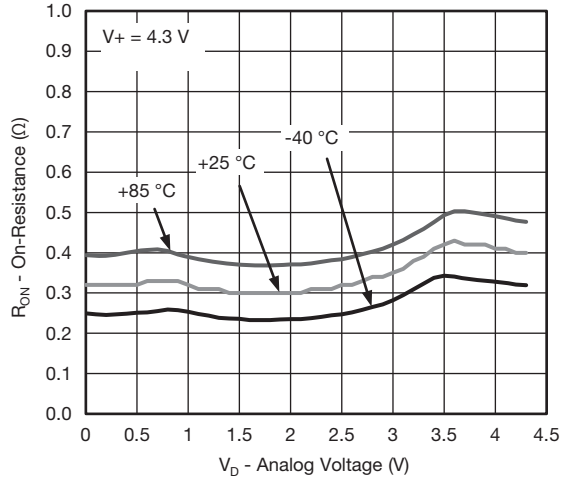
On-Resistance vs. Analog Voltage and Temperature



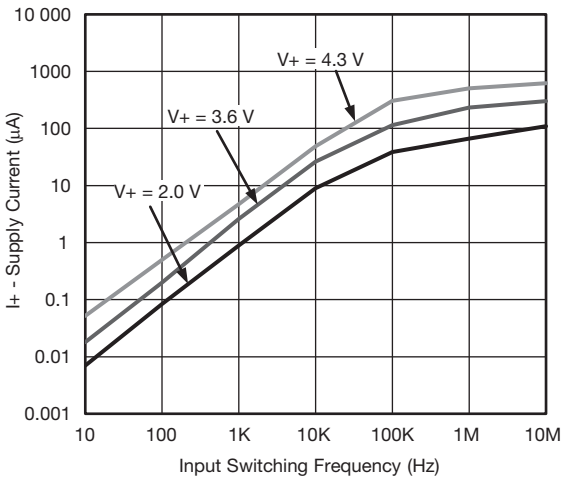
On-Resistance vs. Analog Voltage and Temperature



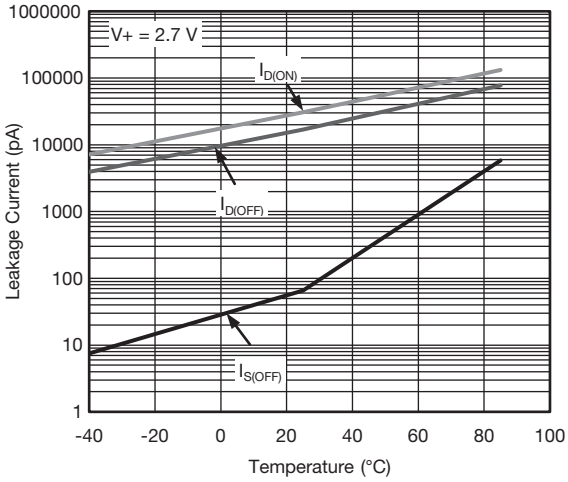
On-Resistance vs. Analog Voltage and Temperature



On-Resistance vs. Analog Voltage and Temperature

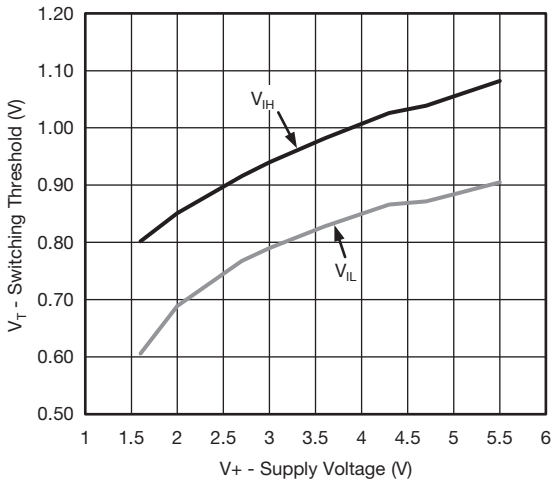


Supply Current vs. Input Switching Frequency

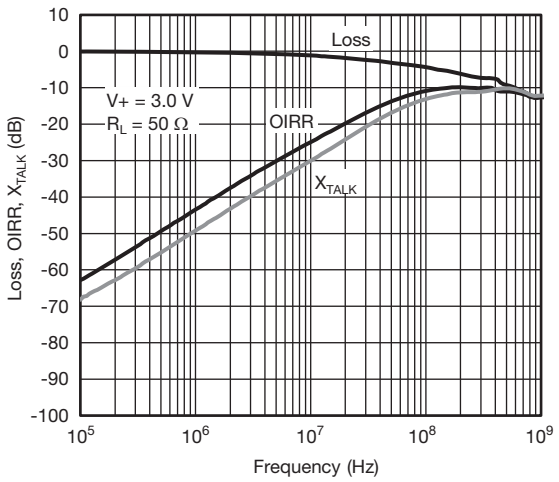


Leakage Current vs. Temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)

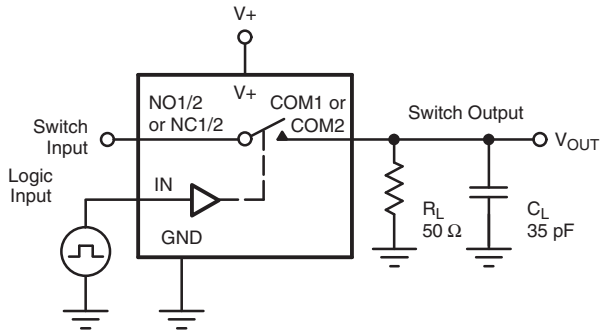


Switching Threshold vs. Supply Voltage



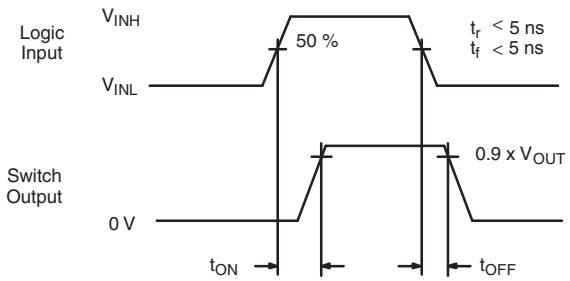
Insertion Loss, Off-Isolation, Crosstalk vs. Frequency

TEST CIRCUITS



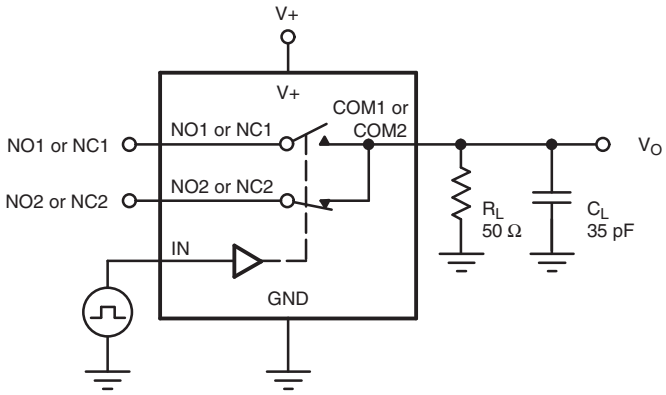
C_L (includes fixture and stray capacitance)

$$V_{OUT} = V_{COM}\left(\frac{R_L}{R_L + R_{ON}}\right)$$



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

Fig. 1 - Switching Time



C_L (includes fixture and stray capacitance)

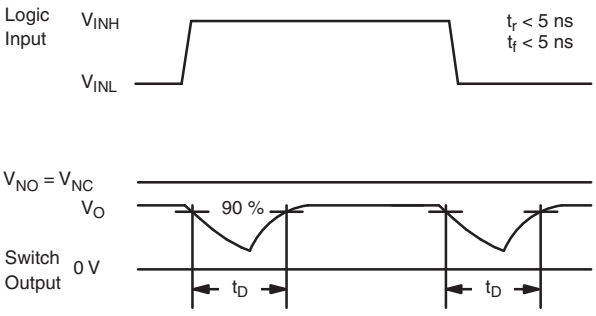
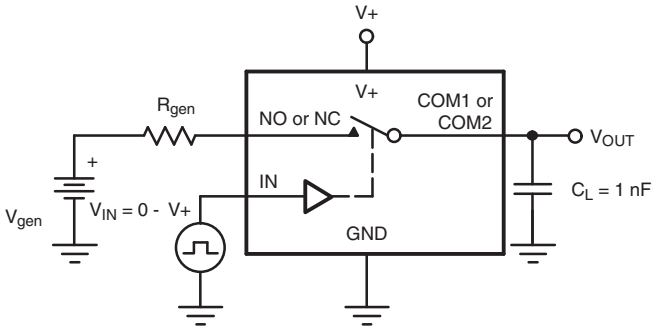
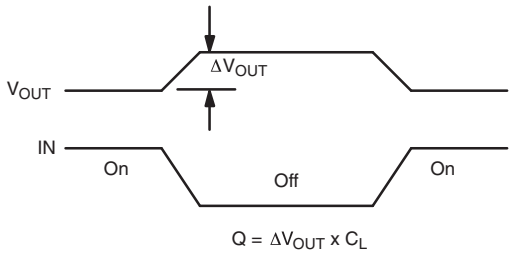


Fig. 2 - Break-Before-Make Interval

TEST CIRCUITS





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

Fig. 3 - Charge Injection

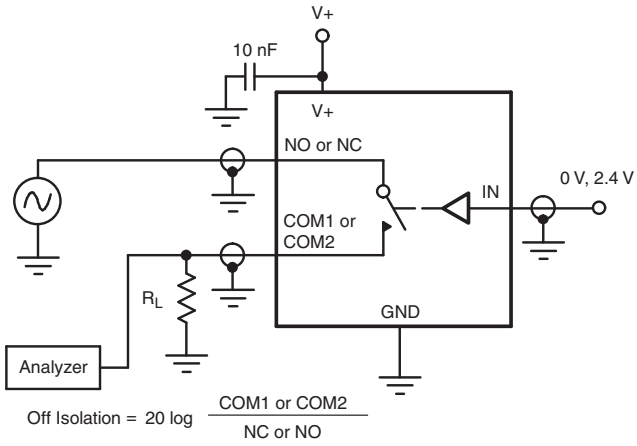


Fig. 4 - Off-Isolation

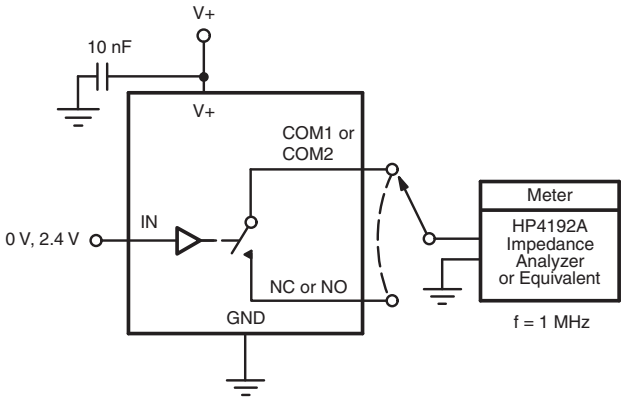
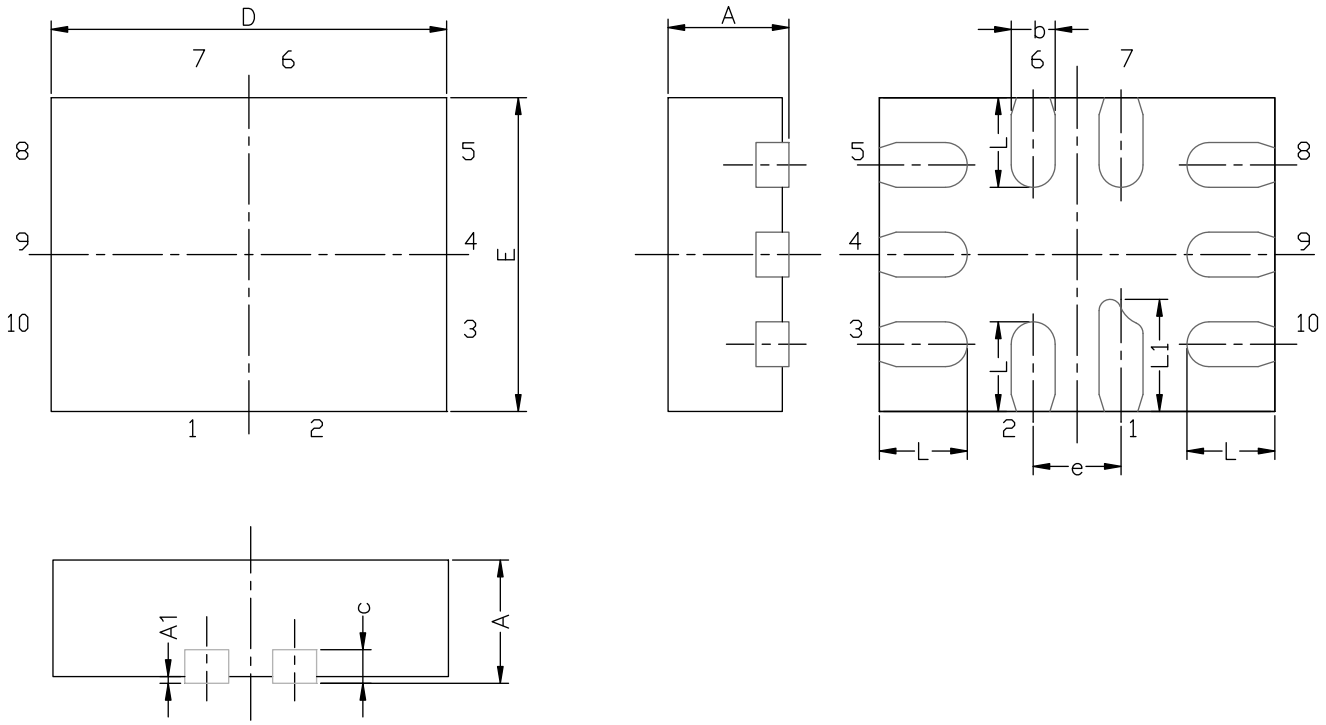


Fig. 5 - Channel Off/On Capacitance

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?64736.

MINI QFN-10L CASE OUTLINE



DIM	MILLIMETERS			INCHES		
	MIN.	NAM.	MAX.	MIN.	NAM.	MAX.
A	0.45	0.55	0.60	0.0177	0.0217	0.0236
A1	0.00	-	0.05	0.000	-	0.002
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.150 or 0.127 REF (1)			0.006 or 0.005 REF (1)		
D	1.70	1.80	1.90	0.067	0.071	0.075
E	1.30	1.40	1.50	0.051	0.055	0.059
e	0.40 BSC			0.016 BSC		
L	0.35	0.40	0.45	0.014	0.016	0.018
L1	0.45	0.50	0.55	0.0177	0.0197	0.0217

Note

(1) The dimension depends on the leadframe that assembly house used.

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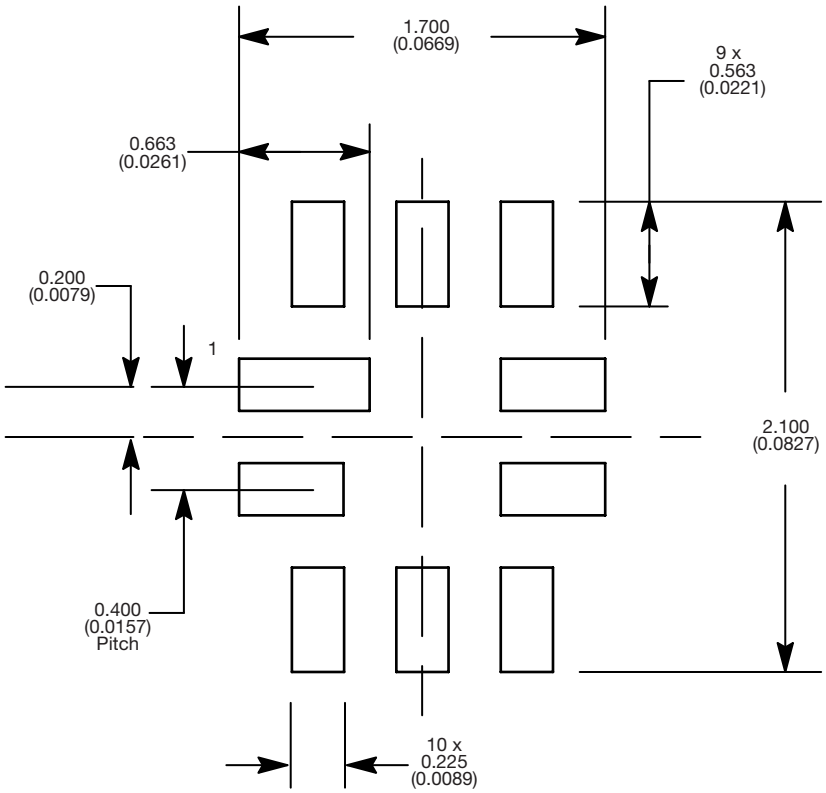
RECOMMENDED MINIMUM PADS FOR MINI QFN 10L



Mounting Footprint
Dimensions in mm (inch)

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