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Product Change Notification

Product Group: SIL/Thu Sep 28, 2023/PCN-SIL-000415-2023-REV-0



DG411LE, DG412LE, DG413LE Test condition change

For further information, please contact your regional Vishay office.

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Description of Change: DG411LE, DG412LE, DG413LE Test condition changed from 2.7V to 3V and specification limits are tighten

Reason for Change: Forr better product quality and reliability

Expected Influence on Quality/Reliability/Performance: There will be no effect on performance, quality or reliability.

Part Numbers/Series/Families Affected: Please see materials list on the succeeding page.

Vishay Brand(S): Vishay Siliconix

Time Schedule:

Start Shipment Date: Tue Nov 28, 2023

Sample Availability: Samples are available now

Product Identification: Date Code

Qualification Data: Available upon Request

This PCN is considered approved, without further notification, unless we receive specific customer concerns before Fri Oct 27, 2023 or as specified by contract.

Issued By: Lisette Saba, malinalisette.saba@vishay.com



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?DG411LEDQ-GE3	DG411LEDQ-T1-GE3	DG411LEDY-GE3	DG411LEDY-T1-GE3	DG411LEDJ-GE3
DG412LEDQ-GE3	DG412LEDQ-T1-GE3	DG412LEDY-GE3	DG412LEDY-T1-GE3	DG412LEDJ-GE3
DG413LEDQ-GE3	DG413LEDQ-T1-GE3	DG413LEDY-GE3	DG413LEDY-T1-GE3	DG413LEDJ-GE3



PCN-SIL-000415-2023 Parameter Comparison

DG411LE, DG412LE, DG413LE Test Specification

Parameter Comparison

September 2023



Before

SPECIFICATIONS ^a (Single Supply 3 V)										
PARAMETER	SYMBOL	TEST CONDITIONS UNLESS OTHERWISE SPECIFIED V ₊ = 3 V, V ₋ = 0 V V _L = 3 V, V _{IN} = 0.4 V, 2.0 V ^f	TEMP. ^b	TYP. ^c	A SUFFIX LIMITS -55 °C to +125 °C		D SUFFIX LIMITS -40 °C to +85 °C		UNIT	
					MIN. ^d	MAX. ^d	MIN. ^d	MAX. ^d		
Analog Switch										
Analog Signal Range ^e	V _{ANALOG}		Full	-	0	3	0	3	V	
Drain-Source On-Resistance	R _{DS(on)}	V ₊ = 2.7 V, V ₋ = 0 V, I _S = 5 mA, V _D = 0.5, 2.2 V	Room	106	-	130	-	130	Ω	
			Full	-	-	150	-	140		
Switch Off Leakage Current ^g	I _{S(off)}	V ₊ = 3.3, V ₋ = 0 V, V _D = 1, 2 V, V _S = 2, 1 V	Room	-	-1	1	-1	1	nA	
			Full	-	-15	15	-10	10		
	I _{D(off)}		Room	-	-1	1	-1	1		
			Full	-	-15	15	-10	10		
Channel On Leakage Current ^g	I _{D(on)}	V ₊ = 3.3 V, V ₋ = 0 V, V _S = V _D = 1, 2 V	Room	-	-1	1	-1	1	nA	
			Full	-	-15	15	-10	10		
Digital Control										
Input Current, V _{IN} Low	I _{IL}	V _{IN} under test = 0.4 V	Full	0.005	-1.5	1.5	-1	1	μA	
Input Current, V _{IN} High	I _{IH}	V _{IN} under test = 2.4 V	Full	0.005	-1.5	1.5	-1	1		
Dynamic Characteristics										
Turn-On Time	t _{ON}	R _L = 300 Ω, C _L = 35 pF, V _S = 1.5 V, see figure 2	Room	57	-	85	-	85	ns	
			Full	-	-	150	-	110		
Turn-Off Time	t _{OFF}		Room	25	-	60	-	60		
			Full	-	-	100	-	85		
Break-Before-Make Time Delay	t _D	DG413L only, V _S = 1.5 V, R _L = 300 Ω, C _L = 35 pF	Room	24	-	-	-	-	pC	
Charge Injection ^e	Q	V _g = 0 V, R _g = 0 Ω, C _L = 10 nF	Room	2	-	-	-	-		
Off Isolation ^e	OIRR	R _L = 50 Ω, C _L = 5 pF, f = 1 MHz	Room	68	-	-	-	-	dB	
Channel-to-Channel Crosstalk ^e	X _{TALK}		Room	107	-	-	-	-		
Source Off Capacitance ^e	C _{S(off)}		f = 1 MHz	Room	6	-	-	-	-	pF
Drain Off Capacitance ^e	C _{D(off)}			Room	7	-	-	-	-	
Channel On Capacitance ^e	C _{D(on)}	Room		15	-	-	-	-		

After

SPECIFICATIONS ^a (Single Supply 3 V)										
PARAMETER	SYMBOL	TEST CONDITIONS UNLESS OTHERWISE SPECIFIED V ₊ = 3 V, V ₋ = 0 V V _L = 3 V, V _{IN} = 0.4 V, 2.0 V ^f	TEMP. ^b	TYP. ^c	A SUFFIX LIMITS -55 °C to +125 °C		D SUFFIX LIMITS -40 °C to +85 °C		UNIT	
					MIN. ^d	MAX. ^d	MIN. ^d	MAX. ^d		
Analog Switch										
Analog signal range ^e	V _{ANALOG}		Full	-	0	3	0	3	V	
Drain-source on-resistance	R _{DS(on)}	V ₊ = 3.0 V, V ₋ = 0 V, I _S = 5 mA, V _D = 0.5, 2.2 V	Room	71	52	90	52	90	Ω	
			Full	-	-	110	-	102		
Switch off leakage current ^g	I _{S(off)}	V ₊ = 3.3, V ₋ = 0 V, V _D = 1, 2 V, V _S = 2, 1 V	Room	-	-1	1	-1	1	nA	
			Full	-	-15	15	-10	10		
	I _{D(off)}		Room	-	-1	1	-1	1		
			Full	-	-15	15	-10	10		
Channel on leakage current ^g	I _{D(on)}	V ₊ = 3.3 V, V ₋ = 0 V, V _S = V _D = 1, 2 V	Room	-	-1	1	-1	1	nA	
			Full	-	-15	15	-10	10		
Digital Control										
Input current, V _{IN} low	I _{IL}	V _{IN} under test = 0.4 V	Full	0.005	-1.5	1.5	-1	1	μA	
Input current, V _{IN} high	I _{IH}	V _{IN} under test = 2.4 V	Full	0.005	-1.5	1.5	-1	1		
Dynamic Characteristics										
Turn-on time	t _{ON}	R _L = 300 Ω, C _L = 35 pF, V _S = 1.5 V, see figure 2	Room	57	-	85	-	85	ns	
			Full	-	-	150	-	110		
Turn-off time	t _{OFF}		Room	25	-	60	-	60		
			Full	-	-	100	-	85		
Break-before-make time delay	t _D	DG413L only, V _S = 1.5 V, R _L = 300 Ω, C _L = 35 pF	Room	24	-	-	-	-	pC	
Charge injection ^e	Q	V _g = 0 V, R _g = 0 Ω, C _L = 10 nF	Room	2	-	-	-	-		
Off isolation ^e	OIRR	R _L = 50 Ω, C _L = 5 pF, f = 1 MHz	Room	68	-	-	-	-	dB	
Channel-to-channel crosstalk ^e	X _{TALK}		Room	107	-	-	-	-		
Source off capacitance ^e	C _{S(off)}		f = 1 MHz	Room	6	-	-	-	-	pF
Drain off capacitance ^e	C _{D(off)}			Room	7	-	-	-	-	
Channel on capacitance ^e	C _{D(on)}	Room		15	-	-	-	-		