

# DG9408E, DG9409E

## Enhanced Performance Products



### Enhanced Performance

- Extended operation to 16 V single power supply and  $\pm$  8 V dual power supplies
- Reduced charge injection from 29 pF to 4.5 pF
- Parasitic on-capacitance reduced by 35 %
- Enhanced ESD / HBM from 2 kV to 2.5 kV
- Enhanced latch-up capability from 200 mA to 400 mA

### Applications

- Automatic test equipment
- Data acquisition systems
- Meters and instruments
- Medical and healthcare systems
- Communication systems
- Audio and video signal routing
- Portable Meters

New products are pin-compatible with current DG9408, DG9409 series:

PACKAGE	EXISTING PART NUMBER	NEW ENHANCED PART NUMBER	EXISTING PART NUMBER	NEW ENHANCED PART NUMBER
QFN16	DG9408DN-T1-E4	<b>DG9408EDN-T1-GE4</b>	DG9409DN-T1-E4	<b>DG9409EDN-T1-GE4</b>

### Specification Comparison Table (Single 12 V):

Parameter	Temperature °C	DG9408, DG9409			DG9408E, DG9409E			Unit
		Typ	Min	Max	Typ	Min	Max	
<b>Analog Switch</b>								
Analog Signal Range	-40 to +85		0	12		0	12	V
Drain-Source On-Resistance	Room	4		7	3.2		7	Ω
	-40 to +85			7.5			7.5	
$R_{DS(on)}$ Matching Between Channels	Room			3.6			3.6	Ω
On-Resistance Flatness	Room			8			8	Ω
Switch Off Leakage Current $I_{S(off)}$	Room		-2	2		-2	2	nA
	-40 to +85		-15	15		-15	15	
Switch Off Leakage Current $I_{D(off)}$	Room		-2	2		-2	2	nA
	-40 to +85		-15	15		-15	15	
Channel On Leakage Current $I_{D(on)}$	Room		-2	2		-2	2	nA
	-40 to +85		-15	15		-15	15	
<b>Digital Control</b>								
Logic High Input Voltage	-40 to +85		2.4			2.4		V
Logic Low Input Voltage	-40 to +85			0.8			0.8	V
Input Current	-40 to +85		-1	1		-1	1	uA
<b>Dynamic Characteristics</b>								
Transition Time	Room	42		71	40		71	ns
	-40 to +85			75			75	
Break-Before-Make Time	Room	24	2		20	2		ns
	-40 to +85							
Enable Turn-On Time	Room	42		70	36		70	ns
	-40 to +85			75			75	
Enable Turn-Off Time	Room	24		44	24		44	ns
	-40 to +85			46			46	
Charge Injection	Room	29			4.5			pC
Off Isolation	Room	-80			-83			dB
Crosstalk	Room	-85			-89			dB
Source Off Capacitance (DG9408)	Room	21		17				pF
Source Off Capacitance (DG9409)	Room	23		16				
Drain Off Capacitance (DG9408)	Room	211		134				pF
Drain Off Capacitance (DG9409)	Room	112		67				
Drain On Capacitance (DG9408)	Room	238		154				pF
Drain On Capacitance (DG9409)	Room	137		86				
<b>Power Supplies</b>								
I+ Supply Current	Room			1			1	uA
I- Supply current	Room		-1			-1		uA
<b>ESD/Latch-Up</b>								
ESD-HBM	Room	2			2.5			kV
ESD-MM	Room				100			V
Latch-Up I-injection	Room	200			400			mA

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