+SCOPE: **TTL COMPATIBLE CMOS ANALOG SWITCHES**

Device Type	Generic Number
01	DG300A(x)/883B
02	DG301A(x)/883B
03	DG302A(x)/883B
04	DG303A(x)/883B

Case Outline(s). The case outlines shall be designated in Mil-Std-1835 and as follows:

Outline Letter	Mil-Std-1835	Case Outline	Package Code
AA	MACY1-X10	10 LEAD CAN	10 TO 100
AK	GDIP1-T14 or CDIP2-T14	14 LEAD CERDIP	J14
AZ	CQCC1-N20	20-Pin Ceramic LCC	L20

Absolute Maximum Ratings

Voltage Referenced to V-

V+ 44V
GND 25V
V_L ..... (GND -0.3V) to (V+)+0.3V
Digital Inputs, V_S, V_D (Note 1) ..... -4V to (V_+ +4V)or 30mA, whichever occurs first
Current, Any terminal except S or D 30mA
Continuous Current, S or D 30mA
(Pulsed at 1ms, 10% duty cycle max) 100mA
Lead Temperature (soldering, 10 seconds) ..... +300°C
Storage Temperature ..... -65°C to +150°C

Continuous Power Dissipation ..... T_A=+70°C
10 lead Can (derate 6.67mW/°C above +70°C) 533mW
14 lead CERDIP(derate 9.09mW/°C above +70°C) 727mW
20-Pin LCC (derate 9.09mW/°C above +70°C) 727mW
Junction Temperature T_J ..... +150°C
Thermal Resistance, Junction to Case, ΘJC:
Case Outline 10 lead Can ..... 45°C/W
Case Outline 14 lead CERDIP..... 55°C/W
Case Outline 20-Pin LCC ..... 20°C/W
Thermal Resistance, Junction to Ambient, ΘJA:
Case Outline 10 lead Can ..... 150°C/W
Case Outline 14 lead CERDIP..... 110°C/W
Case Outline 20-Pin LCC ..... 110°C/W

Recommended Operating Conditions.

Ambient Operating Range (T_A) ..... -55°C to +125°C

NOTE 1: Signals on S_X, D_X, or IN_X exceeding V+ or V- are clamped by internal diodes. Limit diode forward current to maximum current ratings.

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.

TABLE 1 ELECTRICAL TESTS

TEST	Symbol	CONDITIONS -55 °C <=T_A<= +125°C V+=+15V, V-=-15V, GND=0V Unless otherwise specified	Group A Subgroup	Device type	Limits 2/ Min	Limits Max	Units
SWITCH							
Analog-Signal Range	V_{ANALOG}	I_S=10mA, V_{IN}=0.8V or 4.0V	1,2,3	All	-15	15	V
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =-10mA, V_D=10V, V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All		50 75	Ω
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =10mA, V_D=-10V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All		50 75	Ω
Source OFF Leakage Current	$I_{S(OFF)}$	V_S =14V, V_D=-14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All		1 100	nA
Source OFF Leakage Current	$I_{S(OFF)}$	V_S =-14V, V_D=14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All	-1 -100		nA
Drain OFF Leakage Current	$I_{D(OFF)}$	V_S =-14V, V_D=14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All		1 100	nA
Drain OFF Leakage Current	$I_{D(OFF)}$	V_S =14V, V_D=-14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All	-1 -100		nA
Drain ON Leakage Current	$I_{D(ON)}$	V_D=V_S=14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All		2 200	nA
Drain ON Leakage Current	$I_{D(ON)}$	V_D=V_S=-14V V_{IN}=4.0V or V_{IN}=0.8V	1 2,3	All	-2 -200		nA
INPUT							
Input Current/Voltage High	I_{INH}	V_{IN}= 5.0V V_{IN}=15V	1,2,3	All	-1	 1	µA
Input Current/Voltage Low	I_{INL}	V_{IN}=0V	1,2,3	All	-1		µA
SUPPLY							
Positive Supply Current	I+	V_{IN}=4V (One Input) (All others =0)	1 2,3	All		0.5 1.0	mA
Negative Supply Current	I-	V_{IN}=4V (One Input) (All others =0)	1 2,3	All	-10 -100		µA
Positive Supply Current	I+	V_{IN}=0.8V (All Inputs)	1 2,3	All		10 100	µA
Negative Supply Current	I-	V_{IN}=0.8V (All Inputs)	1 2,3	All	-10 -100		µA
DYNAMIC							
Turn ON time	t_{ON}	Figure 3	9 10,11	All		300 500	ns
Turn OFF time	t_{OFF}	Figure 3	9 10,11	All		250 450	ns

NOTE 2: The algebraic convention, where the most negative value is a minimum and the most positive value a maximum, is used on this data sheet.

TABLE 2: **TYPICAL** ELECTRICAL CHARACTERISTICS (**NOTE 3**)

TEST	Symbol	CONDITIONS -55 °C <=T_A<= +125°C V+=+15V, V-=-15V, GND=0V Unless otherwise specified	Group A Subgroup	Device type	**TYPICAL** Limits **3/**	Units
Break-Before-Make Interval	t_{ON}-t_{OFF}	See Break-Before-Make Time Test Circuit DG301A, DG303A only		02, 04	50	ns
Charge Injection	Q	C_L=10nF, R_{gen}=0Ω , V_{gen}=0V		All	12	pC
Source OFF Capacitance	$C_{S(off)}$	f=1MHz, V_{IN}=0.8V or 4.0V, V_S and V_D = 0V		All	14	pF
Drain OFF Capacitance	$C_{D(off)}$	f=1MHz, V_{IN}=0.8V or 4.0V, V_S and V_D = 0V		All	14	pF
Channel ON Capacitance	$C_{D(on)}$+ $C_{S(on)}$	f=1MHz, V_{IN}=0.8V or 4.0V, V_S + V_D = 0V		All	40	pF
Input Capacitance	C_{IN}	f=1MHz, V_{IN}=0V		All	6	pF
Input Capacitance	C_{IN}	f=1MHz, V_{IN}=15V		All	7	pF
Off Isolation 4/		V_{IN}=0V, R_L=1kΩ, V_S=1V_{RMS}, f=500kHz		All	62	dB
Crosstalk (Channel to Channel)		V_{IN}=0V, R_L=1kΩ, V_S=1V_{RMS}, f=500kHz		All	74	dB

NOTE 3: Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
NOTE 4: OFF Isolation=20 log V_S/V_D, V_S= input to OFF switch, V_D= Output.

TERMINAL CONNECTION DEVICE TYPES 01, 02, 03, 04

TERMINAL NUMBER	DG300A 10 Lead CAN	DG300A 14 Lead CERDIP	DG301A 10 Lead CAN	DG301A 14 Lead CERDIP	DG302A 14 Lead CERDIP	DG302A 20 Pin LCC	DG303A 14 Lead CERDIP	DG303A 20 Pin LCC
1	D_1	NC	D_1	NC	NC	NC	NC	NC
2	S_1	D_1	S_1	D_1	S_3	NC	S_3	NC
3	IN	NC	IN	NC	D_3	S_3	D_3	S_3
4	NC	S_1	NC	S_1	D_1	D_3	D_1	D_3
5	GND	NC	GND	NC	S_1	NC	S_1	NC
6	V-	IN_1	V-	IN	IN_1	D_1	IN_1	D_1
7	IN_2	GND	NC	GND	GND	NC	GND	NC
8	S_2	V-	S_2	V-	V-	S_1	V-	S_1
9	D_2	IN_2	D_2	NC	IN_2	IN_1	IN_2	IN_1
10		NC		NC	S_2	GND	S_2	GND
11		S_2		S_2	D_2	NC	D_2	NC
12		NC		NC	D_4	V-	D_4	V-
13		D_2		D_2	S_4	IN_2	S_4	IN_2
14		V+		V+	V+	S_2	V+	S_2
15						NC		NC
16						D_2		D_2
17						NC		NC
18						D_4		D_4
19						S_4		S_4
20						V+		V+

TRUTH TABLES

	DG300/302	DG301	DG301	DG303	DG303
SWITCH		1	2	1,3	2,4
LOGIC					
0	OFF	OFF	ON	OFF	ON
1	ON	ON	OFF	ON	OFF

FIGURE 2: BREAK-BEFORE-MAKE TIME TEST CIRCUIT: See Commercial Data Sheet
FIGURE 3: SWITCHING TIME TEST CIRCUIT: See Commercial Data Sheet

ORDERING INFORMATION.		PKG.Code
01	DG300AAA/883B	10 TO 100
01	DG300AAK/883B	J14
02	DG301AAA/883B	10 TO 100
02	DG301AAK/883B	J14
02	DG301AAZ/883B	L20
03	DG302AAK/883B	J14
04	DG303AAK/883B	J14
04	DG303AAZ/883B	L20

QUALITY ASSURANCE

Sampling and inspection procedures shall be in accordance with MIL-Prf-38535, Appendix A as specified in Mil-Std-883.

Screening shall be in accordance with Method 5004 of Mil-Std-883. Burn-in test Method 1015:

1. Test Condition, A, B, C, or D.
2. TA = +125°C minimum.
3. Interim and final electrical test requirements shall be specified in Table 2.

Quality conformance inspection shall be in accordance with Method 5005 of Mil-Std-883, including Groups A, B, C, and D inspection.

Group A inspection:

1. Tests as specified in Table 2.
2. Selected subgroups in Table 1, Method 5005 of Mil-Std-883 shall be omitted.

Group C and D inspections:

a. End-point electrical parameters shall be specified in Table 1.
b. Steady-state life test, Method 1005 of Mil-Std-883:
   1. Test condition A, B, C, D.
   2. TA = +125°C, minimum.
   3. Test duration, 1000 hours, except as permitted by Method 1005 of Mil-Std-883.

TABLE 2. ELECTRICAL TEST REQUIREMENTS

Mil-Std-883 Test Requirements	Subgroups per Method 5005, Table 1
Interim Electric Parameters Method 5004	1
Final Electrical Parameters Method 5005	1*, 2, 3, 9
Group A Test Requirements Method 5005	1, 2, 3, 9,10,11
Group C and D End-Point Electrical Parameters Method 5005	1

* PDA applies to Subgroup 1 only.

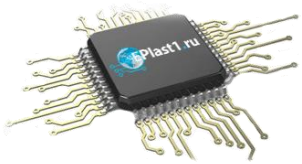
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.