SCOPE: QUAD SPST CMOS ANALOG SWITCHES

Device Type	Generic Number
01	DG201AA(x)/883B
02	DG202A(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
L	CDFP4-F16	16 LEAD FLATPACK	F16
K	GDIP1-T16 or CDIP2-T16	16 LEAD CERDIP	J16
Z	CQCC1-N20	20-Pin Ceramic LCC	L20

Absolute Maximum Ratings

Voltage Referenced to V-

V+ 44V
GND 25V
Digital Inputs, V_S, V_D (Note 1) ..... -2V to (V^+ +2V)or 20mA, whichever occurs first
Current, Any terminal except S or D 30mA
Continuous Current, S or D 20mA
(Pulsed at 1ms, 10% duty cycle max) 70mA
Lead Temperature (soldering, 10 seconds) ..... +300°C
Storage Temperature ..... -65°C to +150°C

Continuous Power Dissipation ..... T_A=+70°C
16 lead Flatpack (derate 6.1mW/°C above +70°C) 485mW
16 lead CERDIP(derate 10mW/°C above +70°C) 800mW
20-Pin LCC (derate 9.1mW/°C above +70°C) 727mW
Junction Temperature T_J ..... +150°C
Thermal Resistance, Junction to Case, ΘJC:
Case Outline 16 lead Flatpack ..... 65°C/W
Case Outline 16 lead CERDIP..... 50°C/W
Case Outline 20-Pin LCC ..... 20°C/W
Thermal Resistance, Junction to Ambient, ΘJA:
Case Outline 16 lead Flatpack ..... 165°C/W
Case Outline 16 lead CERDIP..... 100°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, and are also internally current limited to 25mA.

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 Min	Limits Max	Units
SWITCH							
Analog-Signal Range	V_{ANALOG}	VS=±15V	1,2,3	All	-15	15	V
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =1mA, V_D=10V, V_{IN}=0.8V	1,3 2	01		175 250	Ω
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =1mA, V_D=-10V, V_{IN}=0.8V	1,3 2	01		175 250	Ω
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =1mA, V_D=10V, V_{IN}=2.4V	1,3 2	02		175 250	Ω
Drain-Source ON Resistance	$r_{DS(ON)}$	I_S =1mA, V_D=-10V, V_{IN}=2.4V	1,3 2	02		175 250	Ω
Source OFF Leakage Current	$I_{S(OFF)}$	V_S =+/-14V, V_D=-/+14V, V_{IN}=2.4V	1 2,3	01	-1 -100	1 100	nA
Source OFF Leakage Current	$I_{S(OFF)}$	V_S =+/-14V, V_D=-/+14V, V_{IN}=0.8V	1 2,3	02	-1 -100	1 100	nA
Drain OFF Leakage Current	$I_{D(OFF)}$	V_S =+/-14V, V_D=-/-14V, V_{IN}=2.4V	1 2,3	01	-1 -100	1 100	nA
Drain OFF Leakage Current	$I_{D(OFF)}$	V_S =+/-14V, V_D=-/+14V, V_{IN}=0.8V	1 2,3	02	-1 -100	1 100	nA
Drain ON Leakage Current	$I_{D(ON)}$	V_D=V_S=±14V, V_{IN}=0.8V	1 2,3	01	-2 -200	2 200	nA
Drain ON Leakage Current	$I_{D(ON)}$	V_D=V_S=±14V, V_{IN}=2.4V	1 2,3	02	-2 -200	2 200	nA
INPUT							
Input Current/Voltage High	I_{INH}	V_{IN}= 2.4V	1,2,3	All	-1		µA
		V_{IN}=15V	1,3 2	All		1 10	
Input Current/Voltage Low	I_{INL}	V_{IN}=0V	1,3 2	All	-1 -10		µA
SUPPLY							
Positive Supply Current	I+	All channels on or off	1,2 3	All		0.5 1.0	mA
Negative Supply Current	I-	All channels on or off	1,3 2	All	-10 -100		µA
DYNAMIC							
Turn ON time	t_{ON}	Figure 1	9 10,11	All		600 1000	ns
Turn OFF time	t_{OFF}	Figure 1	9 10,11	All		450 650	ns

FIGURE 1: SWITCHING TIME TEST CIRCUIT: See Commercial Data Sheet

TRUTH TABLE **TERMINAL CONNECTION**

Device Type	Logic	Switch		TERMINAL NUMBER	DG201A & DG202	DG201A & DG202
01	0	ON			J16 & F16	L20
01	1	OFF		1	IN_1	NC
02	0	OFF		2	D_1	IN_1
02	1	ON		3	S_1	D_1
				4	V-	S_1
				5	GND	V-
				6	S_4	NC
				7	D_4	GND
ORDERING	**Information**			8	IN_4	S_4
01	DG201AAK	/883B		9	IN_3	D_4
01	DG201AAL	/883B		10	D_3	IN_4
01	DG201AAZ	/883B		11	S_3	NC
02	DG202AK	/883B		12	NC	IN_3
				13	V+	D_3
				14	S_2	S_3
				15	D_2	NC
				16	IN_2	NC
				17		V+
				18		S_2
				19		D_2
				20		IN_2

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.
** Subgroups 10 and 11, if not tested shall be guaranteed to the limits of Table 1.