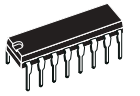
L9222

QUAD INVERTING TRANSISTOR SWITCH

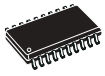
1 FEATURES

- OUTPUT VOLTAGE TO 50V
- OUTPUT CURRENT TO 1.2A
- VERY LOW SATURATION VOLTAGE
- TTL COMPATIBLE INPUTS
- INTEGRAL SUPPRESSION DIODE

Figure 1. Packages



Powerdip (12+2+2)



SO20L

Table 1. Order Codes

Part Number	Package
L9222	(PDIP12+2+2)
L9222 D	(SO20L)

2 DESCRIPTION

The L9222 monolithic quad transistor switch is designed for high current, high voltage switching applications.

Each of the four switches is controlled by a logic input and all four are controlled by a common enable input. All inputs are TTL-compatible for direct connection to logic circuits. Each switch consists of an open-collector transistor plus a clamp diode for applications with inductive loads.

The emitters of the four switches are connected together to GND. The switches of the same device may be paralled. The device is intended to drive coils such as relays, solenoids, unipolar stepper motors, LED etc.

Figure 2. BLOCK DIAGRAM

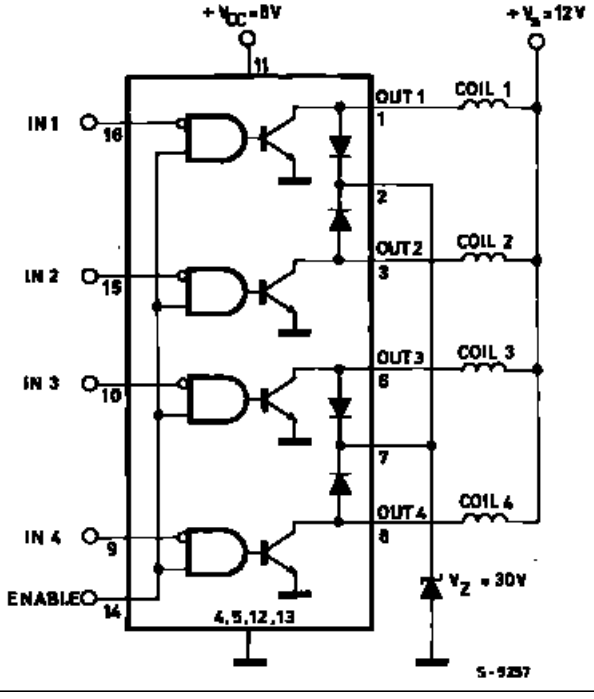
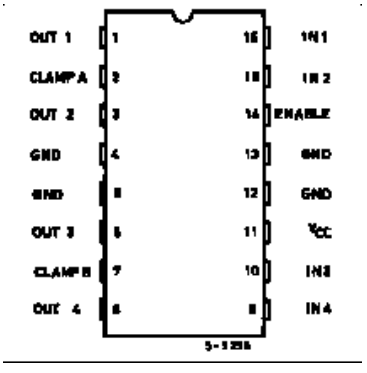


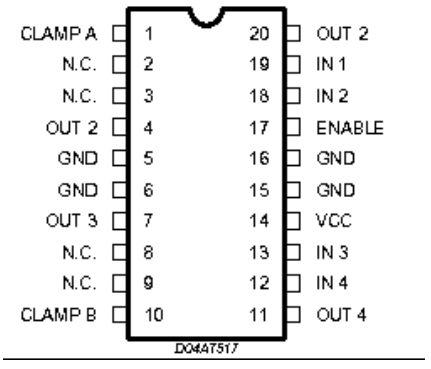
Table 2. ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{OUT}	Output Voltage	– 0.7 to 50	V
V_{CC}	Logic Supply Voltage	7	V
V_i	Input Voltage	– 0.7 to V_{CC} + 0.3	V
T_j, T_{ST}	Junction and Storage Temperature Range	– 55 to 150	°C

Figure 3. PIN CONNECTION (Top view)



DIP16



SO20L

Table 3. TRUTH TABLE

Enable	Input	Power Out
H	L	ON
H	H	OFF
L	X	OFF

For each input :
H= High level
L= Low level
X = Don't care

Table 4. THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction to ambient	Max	90	°C/W
$R_{th\text{-}J\text{-}case}$	Thermal Resistance Junction to case	Max	14	°C/W

Table 5. ELECTRICAL CHARACTERISTICS

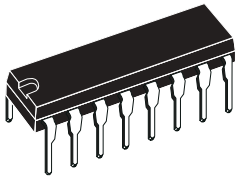
V_{CC} = 5Vdc ± 5% V_{EN} = 5V – 40 ≤ T_j ≤ 125°C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$V_{CE(sus)}$	Output Sustaining Voltage	V_{IN} = 2V V_{EN}= 2V, I_{OUT} = 100mA	46			V
I_{CEX}	Output Leakage Current	V_{CE} = 50V V_{IN} = 2V, V_{EN} = 0.8V			1	mA
$V_{CE(sat)}$	Collector Emitter Saturation	V_{IN} ≥ 0.8V I_{OUT} = 0.1A I_{OUT} = 0.3A I_{OUT} = 0.6A; – 40 + 105 °C			 0.3 0.5 0.8	 V V V
V_{IL}	Input Low Voltage				0.8	V
I_{IL}	Input Low Current	V_{IN} = 0.4V	– 15			µA
V_{IH}	Input High Voltage		2.0			V
I_{IH}	Input High Current	V_{IN} ≥ 2.0V	– 15			µA
I_S	Logic Supply Current	All Outputs ON I_{OUT} = 06A		50	90	mA
		All Outputs OFF		10	20	mA
I_R	Clamp Diode Leakage Current	V_R = 50V Diode Reverse Voltage			100	µA
V_F	Clamp Diode Forward Voltage	I_F = 0.6A			1.8	V
		I_F = 1.2A			2.0	V
I_{OUT}	Output Current	V_{IN} = 0.4V, R = 10Ω , V_S = 13V	0.9	1.2		A
T_{PHL}	Propagation Delay Time (high to low transition)	T_j = 25°C I_L = 600mA			20	µs
T_{PHL}	Propagation Delay Time (low to high transition)	I_L = 600mA T_j = 25°C			20	µs
V_{ENL}	Low Enable Voltage				0.8	V
I_{ENL}	Low Enable Current	V_{EN} = 0.4V	– 15			µA
V_{ENH}	High Enable Voltage		2.0			V
I_{ENH}	High Enable Voltage	V_{EN} ≥ 2.0V	– 15		15	µA

Figure 4. Powerdip (12+2+2 0Mechanical Data & Package Dimensions

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a1	0.51			0.020		
B	0.85		1.40	0.033		0.055
b		0.50			0.020	
b1	0.38		0.50	0.015		0.020
D			20.0			0.787
E		8.80			0.346	
e		2.54			0.100	
e3		17.78			0.700	
F			7.10			0.280
I			5.10			0.201
L		3.30			0.130	
Z			1.27			0.050

OUTLINE AND MECHANICAL DATA



Powerdip 16

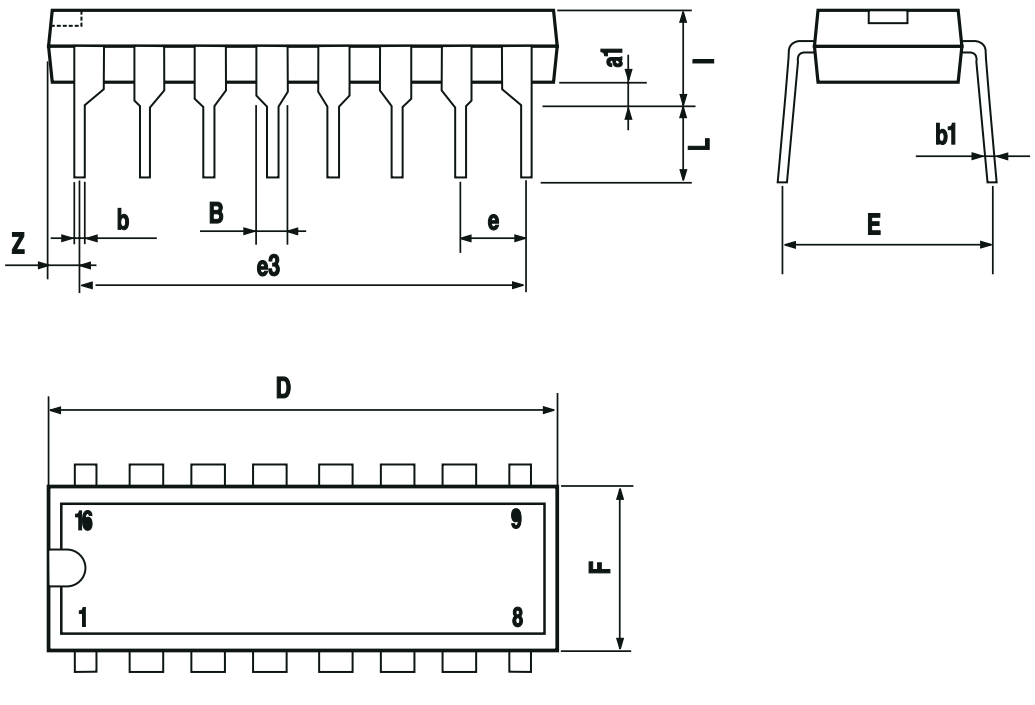
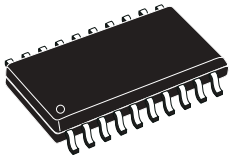


Figure 5. SO20L Mechanical Data & Package Dimensions

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.35		2.65	0.093		0.104
A1	0.10		0.30	0.004		0.012
B	0.33		0.51	0.013		0.200
C	0.23		0.32	0.009		0.013
D (1)	12.60		13.00	0.496		0.512
E	7.40		7.60	0.291		0.299
e		1.27			0.050	
H	10.0		10.65	0.394		0.419
h	0.25		0.75	0.010		0.030
L	0.40		1.27	0.016		0.050
k	0° (min.), 8° (max.)					
ddd			0.10			0.004

(1) "D" dimension does not include mold flash, protusions or gate burrs. Mold flash, protusions or gate burrs shall not exceed 0.15mm per side.

OUTLINE AND MECHANICAL DATA



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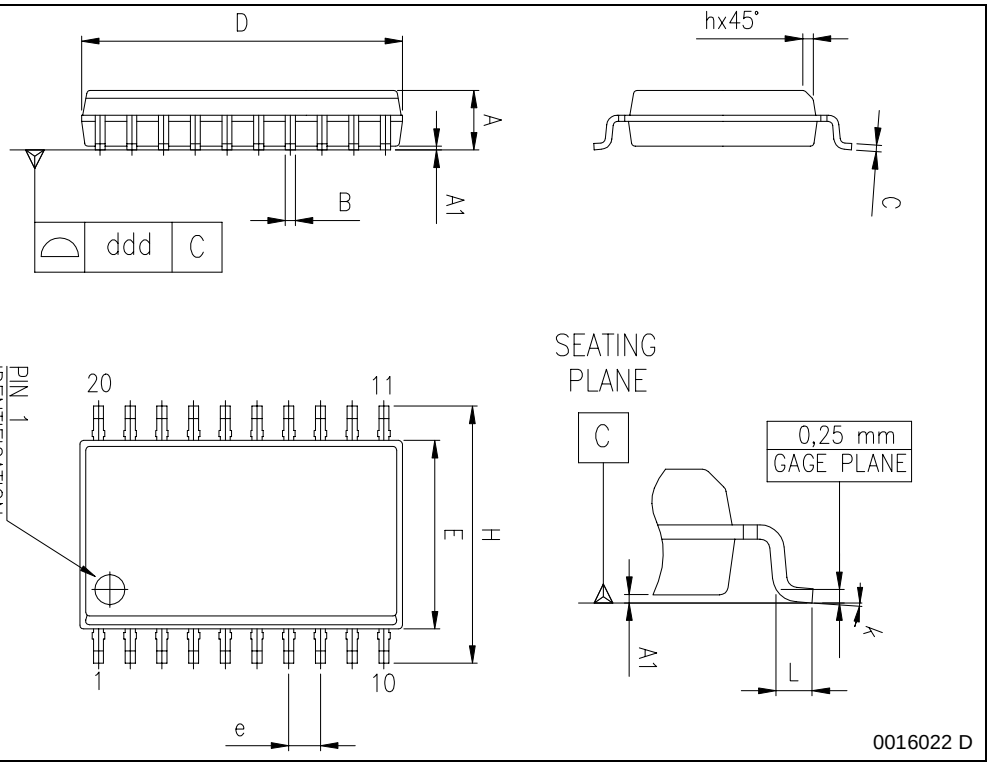

Table 6. Revision History

Date	Revision	Description of Changes
March 2004	2	Second Issue
May 2004	3	Stylesheet update. No content change