

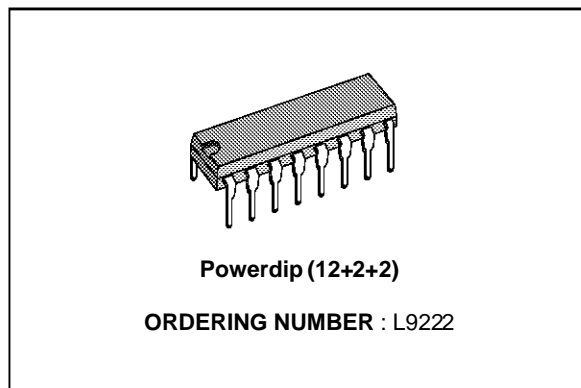
QUAD INVERTING TRANSISTOR SWITCH

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

DESCRIPTION

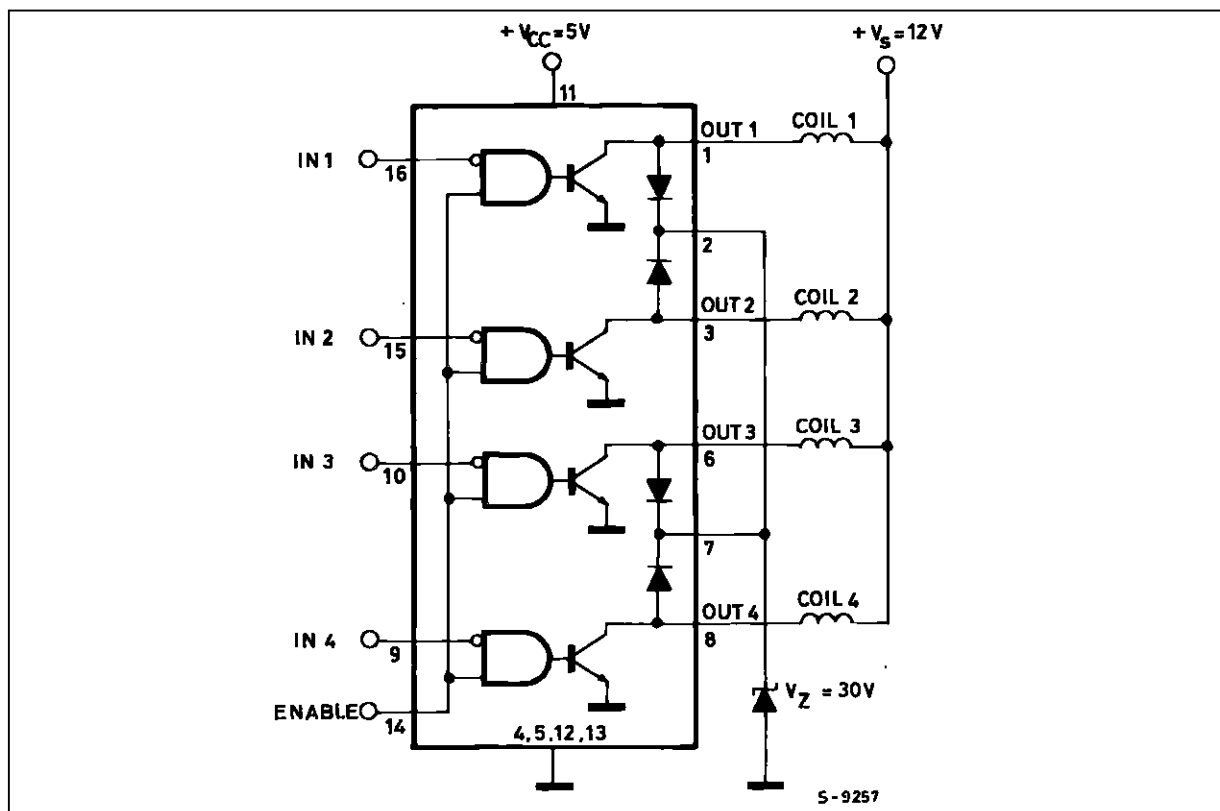
The L9222 monolithic quad transistor switch is designed for high current, high voltage switching applications.

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 paralleled. The device is intended to drive coils such as relays, solenoids, unipolar stepper motors, LED etc.

BLOCK DIAGRAM

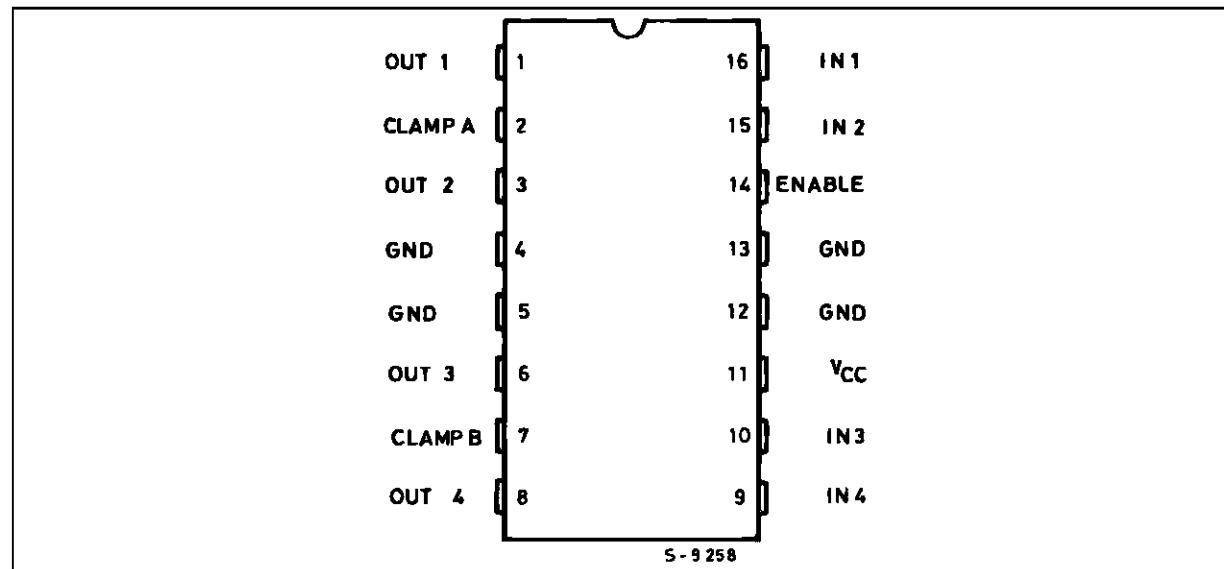


L9222

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 |

PIN CONNECTION (top view)



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

THERMAL DATA

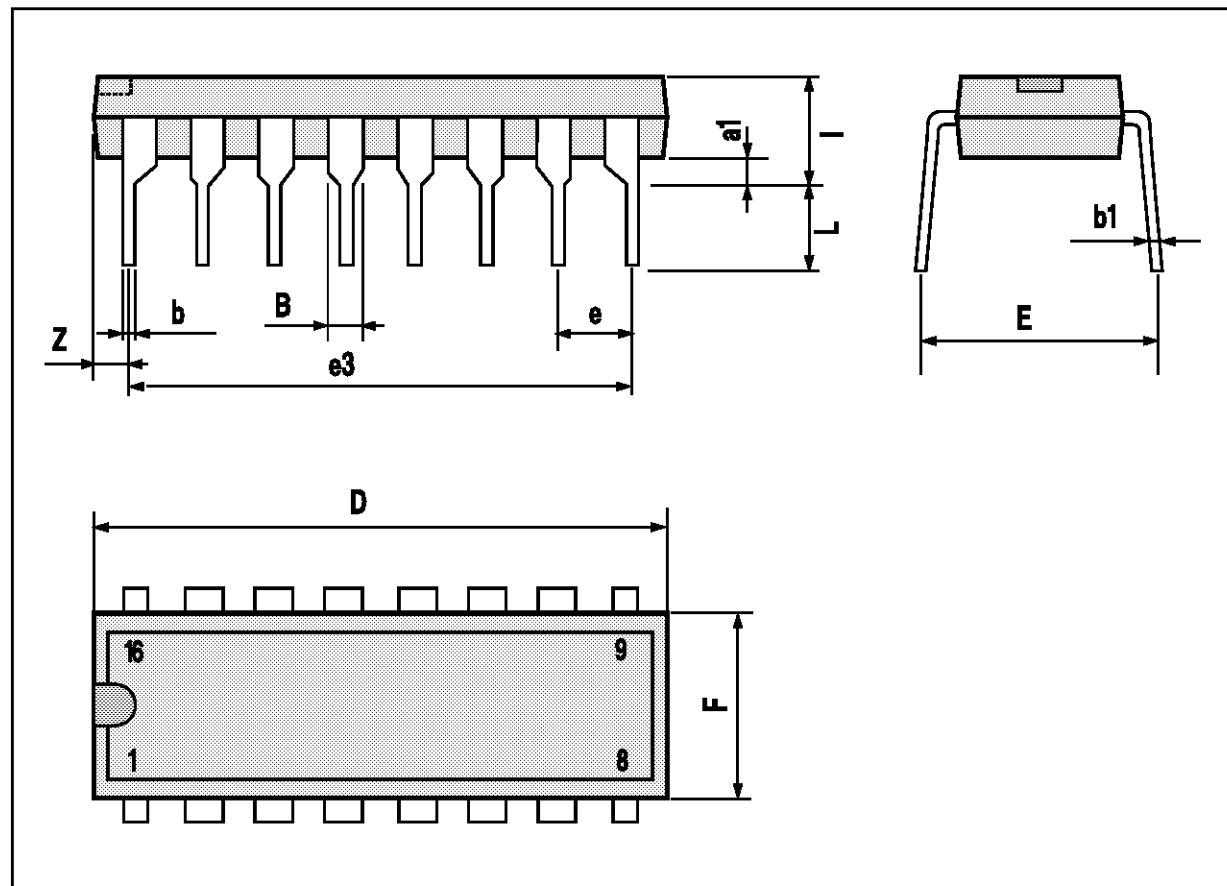
| Symbol | Parameter | Value | Unit |
|------------------|-------------------------------------|--------|------|
| $R_{th\ j-amb}$ | Thermal Resistance Junction-ambient | Max 90 | °C/W |
| $R_{th\ J-case}$ | Thermal Resistance Junction-case | Max 14 | °C/W |

ELECTRICAL CHARACTERISTICS ($V_{CC} = 5V_{dc} \pm 5\%$ $V_{EN} = 5V - 40 \leq T_j \leq 125^\circ C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | 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 | $V_{IN} \geq 0.8V$ $I_{OUT} = 0.1A$ $I_{OUT} = 0.3A$ $I_{OUT} = 0.6A$; $-40 + 105^\circ C$ | | | 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 | $V_{IN} \geq 2.0V$ | - 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 | $V_{IN} = 0.4V$, $R = 10\Omega$, $V_S = 13V$ | 0.9 | 1.2 | | A |
| T_{PHL} | Propagation Delay Time (high to low transition) | $T_j = 25^\circ C$ $I_L = 600mA$ | | | 20 | μs |
| T_{PHL} | Propagation Delay Time (low to high transition) | $I_L = 600mA$ $T_j = 25^\circ C$ | | | 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 Current | $V_{EN} \geq 2.0V$ | - 15 | | 15 | μA |

POWERDIP16 PACKAGE MECHANICAL DATA

| 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 |
| l | | | 5.10 | | | 0.201 |
| L | | 3.30 | | | 0.130 | |
| Z | | | 1.27 | | | 0.050 |



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