

Full-Bridge Drivers Deliver 4.5 kW For DC Motors And Thermoelectric Coolers

From VSHolding LLC, Electronic Design & Research, the H7GvvDcc/v/T high-power full bridge drivers are guaranteed to deliver 4.5 kW continually (30 kW pulse). Assembled in a 1.95 in. (W) x 3.95 in. (L) x 1.2 in.(H) panel mounting enclosure, the drivers require two power supplies; a 5-Vdc or 12-Vdc supply for the internal logic, and (depending on the model), a 20-V to 1,500-V supply for the load (Fig. 1.)

These drivers were developed for automotive applications and are usable in many industrial applications like solenoid drivers, dc motors, and thermoelectric cooler (Peltier) elements (TECs) (Fig. 2.) EDR's drivers offer low-cost motion control of dc motors and are a proven and reliable option for a wide variety of applications such as robots, office automation products, industrial X-Y tables, and medical equipment.

Because of the low $R_{DS(ON)}$ of the H-Bridge MOSFETs and intelligent gate-drive design, the efficiency of these drivers can be extremely high in comparison with drivers based on IGBTs, bipolar transistors and Triacs. For example, the 60-V, 24-A rated H7G60D24/12/T has an $R_{DS(ON)}$ of approximately 1.2 m Ω , resulting in a I^2R loss of about 0.7 W. In contrast, an H-bridge driver constructed with IGBTs, bipolar transistors and Triacs would exhibit a power loss ($1xV_{SAT}$) of 24 A x 3 V= 72 W.

Consequently, use of the H7GvvDcc/v/T can eliminate the need for a heat sink and makes these drivers good candidates for energy-efficient applications. Meanwhile, the drivers' PWM capabilities support enhanced design flexibility and precision control.

Driver cost depends on the model. For example, the H7G60D22/12/T, which is rated for 60-Vdc and 22-A operation is priced at \$194.00 ea/50. A datasheet for the H7GvvDcc/v/T is available [online](#). For more information, contact info@vsholding.com



Fig. 1. Assembled in a 1.95-in. (W) x 3.95-in. (L) x 1.2-in.(H) panel mounting enclosure, the H7GvvDcc/v/T high-power full bridge drivers are guaranteed to deliver 4.5 kW continually (30 kW pulse).

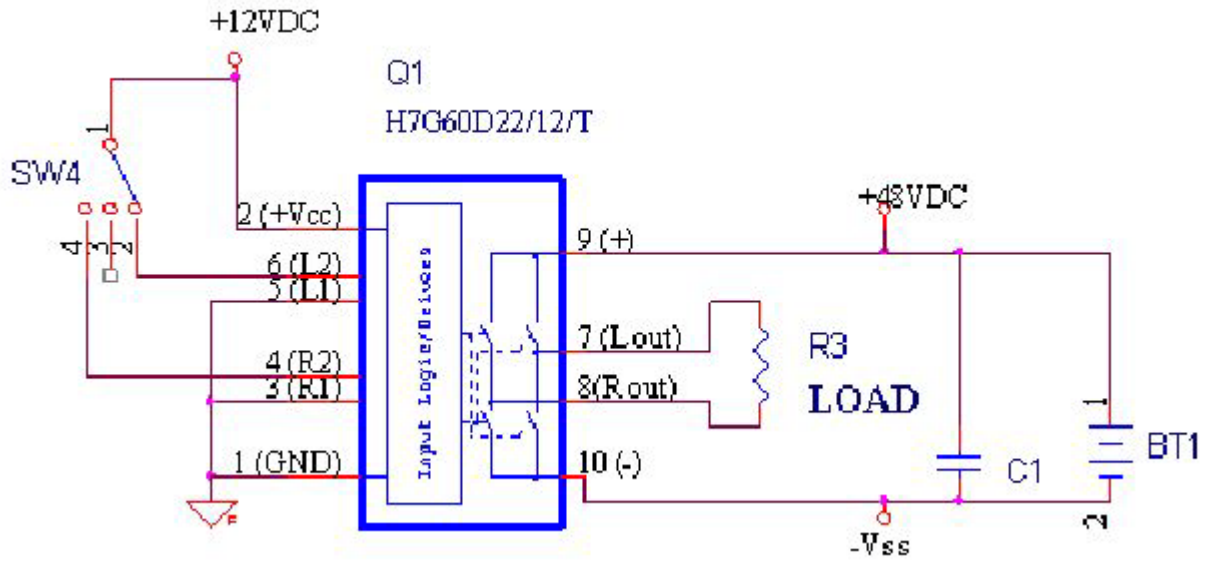


Fig.2 DC motor application circuit. The H7GvDcc/v/T driver is enabled by applying control voltages to either input.