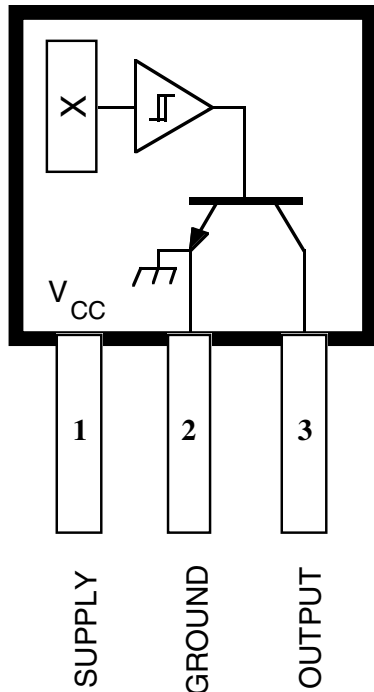


SENSITIVE HALL-EFFECT SWITCHES FOR HIGH-TEMPERATURE OPERATION



Dwg. PH-003A

Pinning is shown viewed from branded side.

ABSOLUTE MAXIMUM RATINGS at $T_A = +25^\circ\text{C}$

Supply Voltage, V_{CC}	28 V
Reverse Battery Voltage, V_{RCC}	-35 V
Magnetic Flux Density, B	Unlimited
Output OFF Voltage, V_{OUT}	28 V
Reverse Output Voltage, V_{OUT}	-0.5 V
Continuous Output Current, I_{OUT}	25 mA
Operating Temperature Range, T_A	
Suffix 'E-'	-40°C to +85°C
Suffix 'L-'	-40°C to +150°C
Storage Temperature Range, T_S	-65°C to +170°C

These Hall-effect switches are monolithic integrated circuits with tighter magnetic specifications, designed to operate continuously over extended temperatures to $+150^\circ\text{C}$, and are more stable with both temperature and supply voltage changes. The unipolar switching characteristic makes these devices ideal for use with a simple bar or rod magnet. The four basic devices (3141, 3142, 3143, and 3144) are identical except for magnetic switch points.

Each device includes a voltage regulator for operation with supply voltages of 4.5 to 24 volts, reverse battery protection diode, quadratic Hall-voltage generator, temperature compensation circuitry, small-signal amplifier, Schmitt trigger, and an open-collector output to sink up to 25 mA. With suitable output pull up, they can be used with bipolar or CMOS logic circuits. The A3141- and A3142- are improved replacements for the UGN/UGS3140-; the A3144- is the improved replacement for the UGN/UGS3120-.

The first character of the part number suffix determines the device operating temperature range. Suffix 'E-' is for the automotive and industrial temperature range of -40°C to $+85^\circ\text{C}$. Suffix 'L-' is for the automotive and military temperature range of -40°C to $+150^\circ\text{C}$. Three package styles provide a magnetically optimized package for most applications. Suffix '-LT' is a miniature SOT-89/TO-243AA transistor package for surface-mount applications; suffix '-U' is a three-lead plastic mini-SIP, while suffix '-UA' is a three-lead ultra-mini-SIP.

FEATURES and BENEFITS

- Superior Temp. Stability for Automotive or Industrial Applications
- 4.5 V to 24 V Operation ... Needs Only An Unregulated Supply
- Open-Collector 25 mA Output ... Compatible with Digital Logic
- Reverse Battery Protection
- Activate with Small, Commercially Available Permanent Magnets
- Solid-State Reliability
- Small Size
- Resistant to Physical Stress

Always order by complete part number, e.g., **A3141ELT**.