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DIH-143 Power MOSFET SPST Photovoltaic DC N/O Relay

Features:

- Low Level Logic Compatibility
- Thermal Protection With Hysteresis
- Optical Isolation to 500VDC
- Low On Resistance, Low Offset Voltage
- Meet 28V DC System Surge and Spike Requirements of Mil STD-704.
- Space Efficient 6 Mini Pin DIP Hermetic Package.
- Current Limiting
- Designed To Meet MIL-R-28750
- Y-Level MIL Screening Available

Applications:

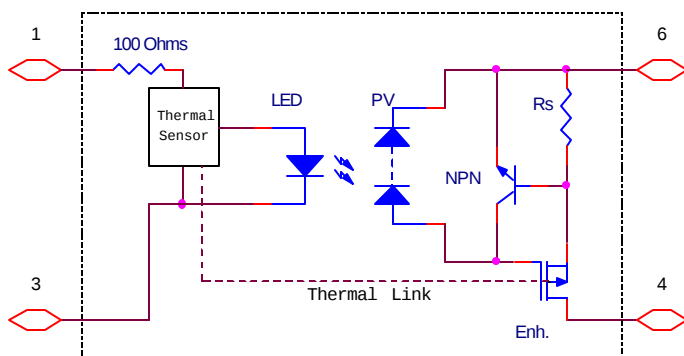
- 28V DC Aircraft Power Control & Distribution
- Motor Control & Power Control
- Aircraft Flight Control Systems
- A.T.E. (Automatic Test Equipment)
- Load Control From Processor I/O Ports
- High-side DC Power Switching
- Power Supply Circuits
- Medical Electronics

Description:

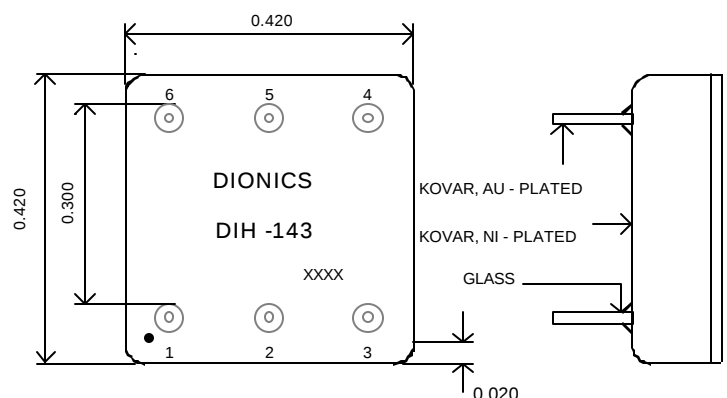
DIH-143 is State of the Art Solid State Relay designed for 28V DC aircraft power applications where speed, efficiency, current overload protection and immunity to transient voltages are critical.

DIH-143 is Normally Opened (N/O) relay capable of continuous current of 1.5A. DIH-143 contains current limiting networks and thermally sensitive integrated circuits that disable the outputs, if the output MOSFET approaches an unsafe operating temperature. Because the thermally sensitive integrated circuits have built-in hysteresis, the output MOSFET is automatically restarted when a safe temperature is reached. This auto restart feature eliminates the need for system restart signals. If the overload condition continues to exist, the cycle is repeated; If the overload condition is removed, the relay returns to normal operation.

* DIH-143 Schematic

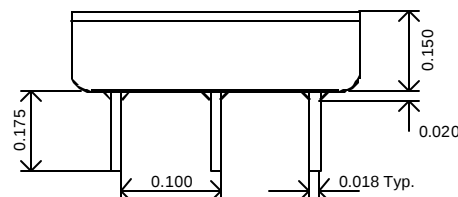


* Package Lay out:



❖ Pin Designation

Pin number	Function
1	Input +
2	Not Connected
3	Input -
4	Output Drain +
5	Not Connected
6	Output Source -



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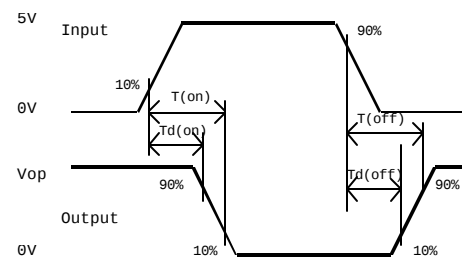
Electrical Characteristics (@ 25 °C unless otherwise specified):

❖ Input Characteristics			
Parameter	Conditions	Value	Unit
Control Voltage	—	4 to 6	V
Control Current	—	18 Max.	mA
	-40 °C ≤ T _a ≤ 85 °C	30 Max.	mA
Reverse Voltage	—	10 Max.	V

❖ Output Characteristics					
Parameter	Conditions	Min.	Max	Unit	
Peak Current	1% Duty Cycle, 50 ms Pulse	—	2.5	A	
Constant Current	T _a = 25 °C	—	1.5	A	
	T _a = 85 °C	—	0.6	A	
On- Resistance	T _a = 25 °C	—	0.50	W	
	-40 °C ≤ T _a ≤ 85 °C	—	0.85	W	
Operating Voltage		—	32.5	V	
Breakdown Voltage	Output = Open	100	—	V	
Leakage Current	V _{out} = 80V	—	100	mA	
Turn-On Time		150	350	ms	
Turn-Off Time		—	50	ms	
Short Circuit Protection		—	3.4	A	
Thermal Resistance		—	100	°C/W	
Thermal Tripping Temp. Junction		—	130	°C	
Thermal Recovery Temp. Junction		—	100	°C	
Thermal Hysteresis		—	30	°C	

❖ Environmental Conditions:

Operating Temp. :	-20 to 75 °C (Comm.)
(Y-Level Mil.)	-55 to 125 °C
Storage Temp. :	-20 to 85 °C (Comm.)
(Y-Level Mil.)	-55 to 125 °C
Shock: (Y-Level Mil.)	50 G, MIL-STD-202 Method 202
Hermeticity:	Gross Leak (Comm.)
(Y-Level Mil.)	10 ⁻⁵ atm cc/sec Fine Leak 5x10 ⁻⁸ atm cc/sec
Vibration: (Y-Level Mil.)	20G, 10 to 2000 Hz
Acceleration: (Y-Level Mil.)	100 G
Weight:	1.5 Grams



❖ General Characteristics:

Minimum Input/Output Isolation:	500 VDC
Minimum Input/Output Resistance:	10 ⁸ Ohms
Typical Input/Output capacitance:	10pF
Min. Transient Protection Capability (dv /dt):	100V/μs
Maximum Power Dissipation @ 25 °C:	1W