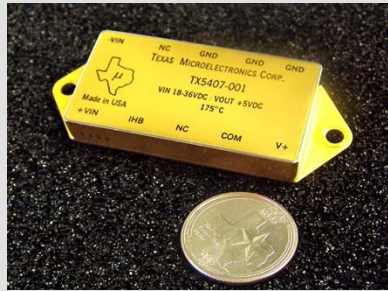




## 28 Volt Input – Single Voltage Output – Isolated 5 Watt Switching DC/DC Converter with Low Drop Out Linear Output Regulator

### FEATURES

- 175 °C operation
- Foldback linear regulator
- Low output ripple
- Shutdown control
- Linear regulators provide excellent line and load regulation



### APPLICATIONS

- High temperature applications
- Petroleum reservoir monitoring
- Petroleum logging tools
- Petroleum LWD and MWD tools
- Avionics

The TX5407 is a 5-watt isolated power supply designed to operate at case temperatures to 175 °C. It features a unique combination of isolated switcher and low dropout linear output regulator. The TX5407 output regulator provides superior regulation, low output noise and well-behaved short circuit performance.

These devices may be operated with any load from 1% to 100% and will sustain a continuous short circuit on the output since the linear regulator folds back to a very small current.

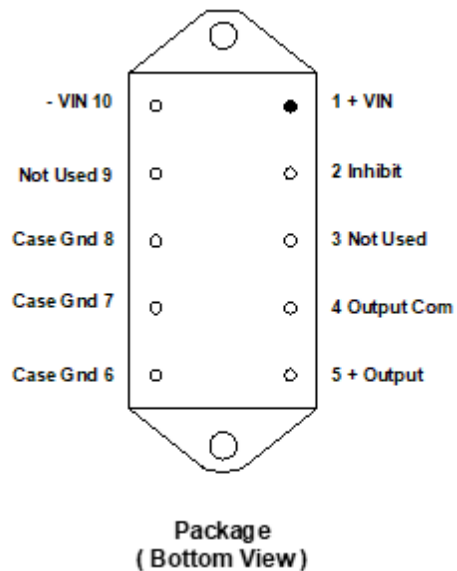
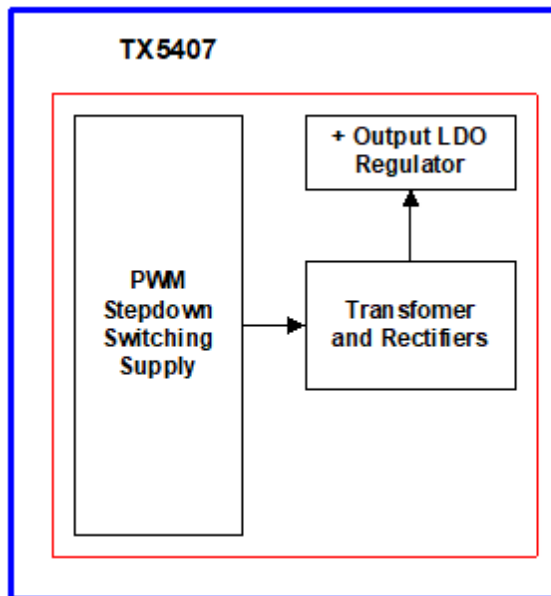
The TX5407 contains internal bypass capacitors on both the input and output. However, some applications may require additional external bypass capacitors on the input and output.

The TX5407 is housed in a 10-pin hermetic power package with pin spacing of 0.4" and row spacing of 0.8". Free air thermal resistance is approximately 35°C per watt. Part numbers are:

**TX5407-1 + 5.0 Volts at 1000 mA**

**TX5407-2 + 3.3 Volts at 1500 mA**

### TX5407 Block Diagram



## TX5407 Specifications

Absolute Maximum Ratings		Shutdown	Isolation
Input voltage range	20 – 36VDC	Shutdown is affected by pulling the Inhibit pin to -Vin with an open drain / collector circuit. Normal operation will occur when the Inhibit pin is left open.	<ul style="list-style-type: none"> <li>500 VDC isolation from any input pin to any output pin.</li> <li>500 VDC isolation from any input pin or output pin to case.</li> </ul>
Operating temperature (T <sub>case</sub> )	175°C		
Storage temperature	200°C		

Note: Proper thermal management must be conducted to ensure T<sub>case</sub> stays at or below 175°C.

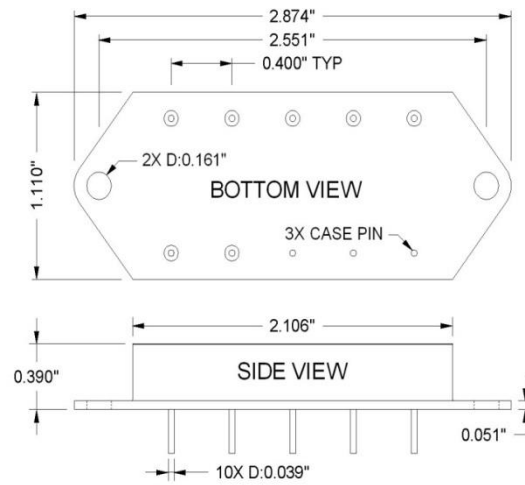
Electrical Characteristic	Value (25°C – 175°C)	Units
Input Voltage	20 – 36	V
Input Current Inhibited	< 10	mA
Output Ripple	24mV	mV rms
Inhibit Pin Voltage	0.2	VDC
Switching Frequency	260 – 310	kHz
Startup Delay	50	Ms
Startup Overshoot Max	120	mV

#### Electrical Characteristics Notes:

- Maximum output ripple is dependent on the size and quality of external bulk capacitance on each output leg.
- Electrical Characteristics at 28VDCIN @ 400mA load, unless otherwise specified.

Part Number ->	TX5407-001	TX5407-002	Units
Output Voltage at room temperature	5V ± 5%	3.3V ± 5%	V
Output Voltage at 175°C	5V ± 5%	3.3V ± 5%	V
Output Current Max	±1000	±1500	mA
Power Max	5	4.95	W
Max Efficiency*	>50	>50	%

## TX5407 Specifications



### MATERIALS:

- Body (frame and base) and leads: ASTM F-15 alloy
- Lid: Kovar
- Glass: 7052 or equivalent