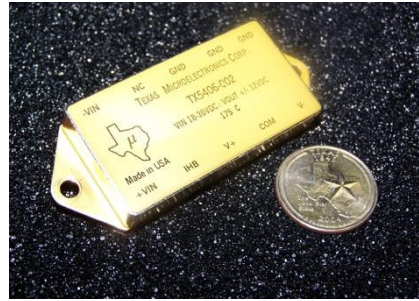




TX5406 Isolated, Dual Output Specifications

BENEFITS

- 175°C Case Temp Operation
- Foldback linear regulator
- Low Output ripple
- Shutdown Control
- Linear regulators provide excellent line and load regulation



APPLICATIONS

- High temperature applications
- Down-hole applications: Reservoir monitoring, LWD, MWD, Logging tools.
- Avionics

The TX5406 is a 4 to 12 watt isolated power supply designed to operate at case temperatures to 175 °C. It features a unique combination of isolated switcher and dual low dropout linear output regulators. The TX5406 output regulators provide superior regulation, low output noise and well-behaved short circuit performance.

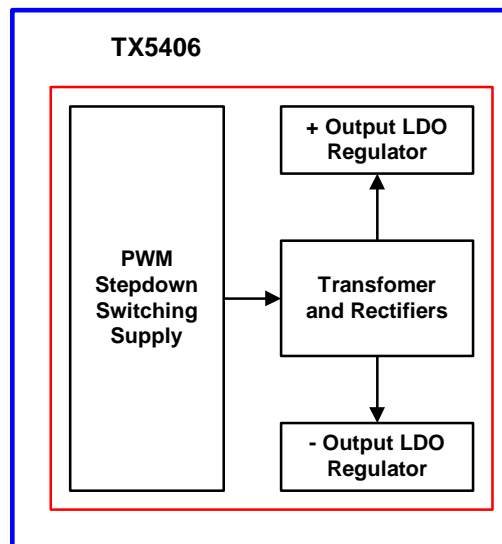
These devices may be operated with any load from 1% to 100% and will sustain a continuous short circuit on either output since the linear regulators fold back to a very small current.

The TX5406 contains internal bypass capacitors on both the input and outputs. However, some applications may require additional external bypass capacitors on the input and outputs.

The TX5406 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:

TX5406-1 ± 5 Volts at 500 mA per output

TX5406-2 ± 12 Volts at 500 mA per output



TX5406 Block Diagram – Fig1

TX5406 Isolated, Dual Output 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. Isolation of 500 VDC from any input pin to any output pin as well as 500 VDC isolation from any input pin or output pin to case.
Operating Temperature (T _{case}) *	175°C	
Storage Temperature	200°C	

Note: Proper thermal management must be conducted to ensure Tc_{ase} stays at or below 175DegC.

Electrical Characteristics	25 – 175 DegC	Units
Input Voltage	20 to 36	V
Input Current Inhibited	< 10	mA
Output Ripple	24	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:

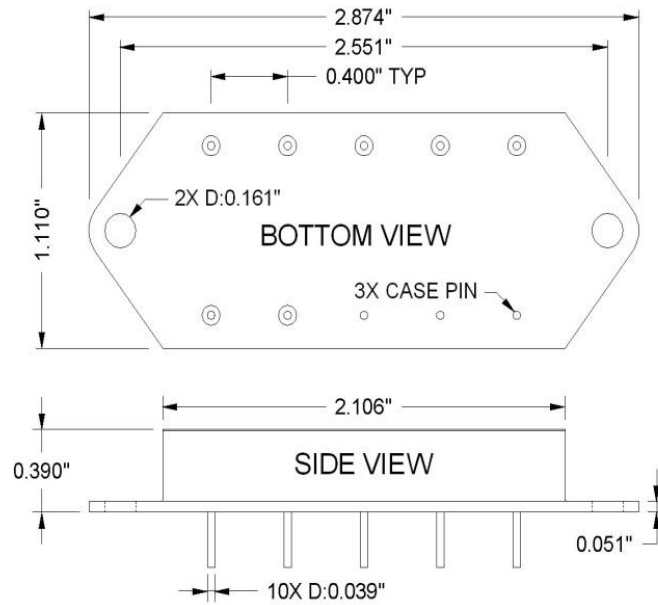
- Maximum output ripple is dependent on the size and quality of external bulk capacitance on each output leg.
- Electrical Characteristics at 28 VDC V_{IN}, ±400mA load, unless otherwise specified

Part Number →	TX5406-001	TX5406-002	Units
Output Voltage ± VDC Room Temperature	± 5V ± 5%	± 12V ± 5%	V
Output Voltage ± VDC High Temperature	± 5V ± 5%	± 12V ± 5%	V
Output Current Max	± 500	± 500	mA
Power Max	5	12	W
Max Efficiency*	> 50	> 50	%

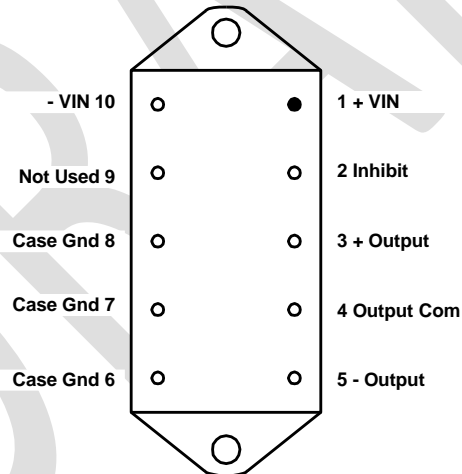
Notes:

- Max Efficiency measured at 100% load, 175DegC Case Temperature

TX5406, Isolated, Dual Output Specifications



Mechanical Package - Fig. 2



Package Bottom View - Fig. 3

MATERIALS:

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