

**Basic operation and functions**

W2530 series is single, dual and triple output DC/DC converters provide from 16.5 watts up to 30 watts of output power in an industry standard 2"x2" size package. The W2530 series features 2:1 input voltage range, high efficiency, fixed switching frequency 300KHz, continuous short circuit protection, six-side continuous shield and 500VDC isolation.

remote control options available, Positive logic and Negative logic. The remote must use the CMOS or open collector TTL to control on/off pin.

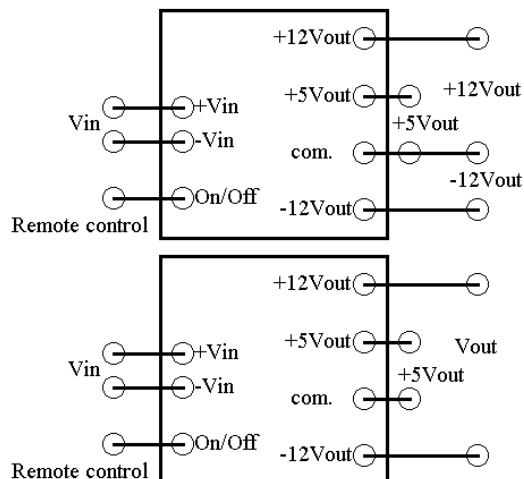
Logic compatibility	CMOS or open collector TTL
Ec-on	>+5.5Vdc or open circuit
Ec-off	<1.8Vdc
Shutdown idle current	10mA
Control common	Referenced to input minus

**Input (Vi+ , Vi-)**

Input power Vin+ must be connected to Positive input voltage(Vi+) ; Input power Vin- must be connected to Negative voltage(Vi-).

**Output (Vo+ , Vo- )**

Output power Vout+ must be connected to Positive output voltage (Vo+) ; Output power Vout- must be Negative output voltage (Vo-).



**On /Off**

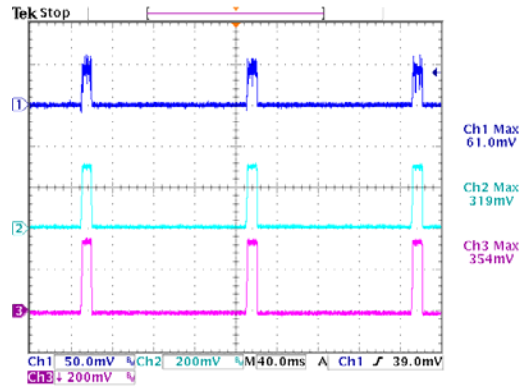
The output allows the user to switch the module on and off electronically by remote on/off feature. There are two

**Protection Features**

**Input under voltage lockout(UVLO)**

Input under voltage lockout(IUV) is standard with the W2530 unit. The unit will shut down when the input voltage drops below a threshold, and the unit will turn on when the input voltage goes to the upper threshold.

The hysteresis voltage of the unit voltage protection is 0.5V, normally from the 8V to 7.5V range.

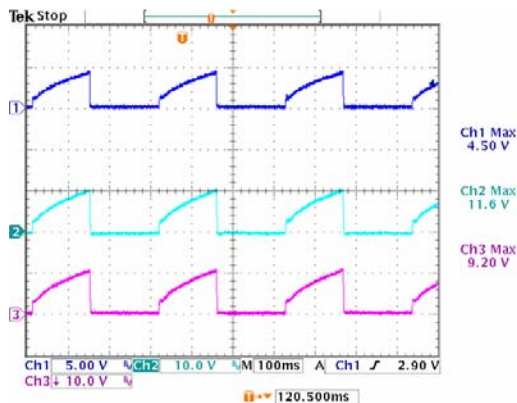


CH1:+5Vout/short Ch2:-12Vout/short  
 CH3:-12Vout/short

**Output over current protection(OCP)  
 and output short protection**

The unit will auto recovery current limit when the over current or short circuit condition exists.

Once the OCP happens, the unit has auto recovery current limit. The attempted restart will continue indefinitely until the over current or short circuit condition is removed. When OCP happens, the output voltage drops below 0V.



CH1:+5Vout/OCP Ch2:-12Vout/OCP  
 CH3:-12Vout/OCP

**Characterization**

**General information**

The W2530 unit has many operational characterized aspects, including efficiency, start up , overshoot, output ripple & noise, dynamic response to load and input ripple current.

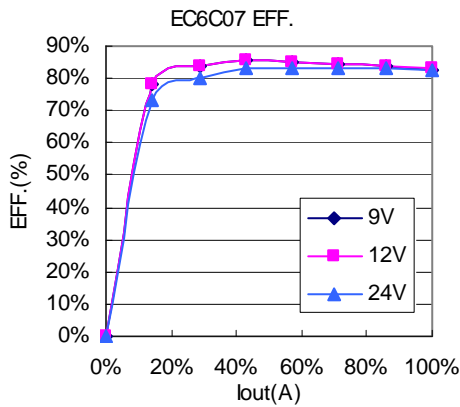
The following pages contain specific plots or waveforms associated with the unit. Additional comments for specific data are provided below.

**Efficiency**

Efficiency vs load current is given below.

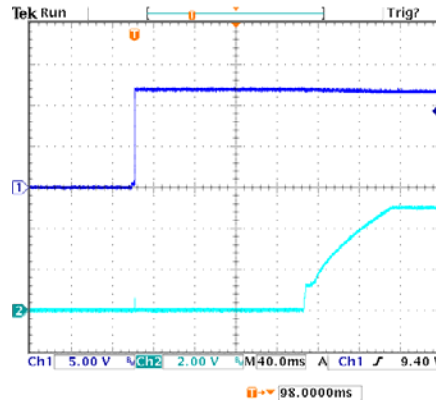
The ambient temperature is 25°C,

airflow is 20LFM(0.1m/s), and the input voltage is 9V, 24V and 36V conditions.

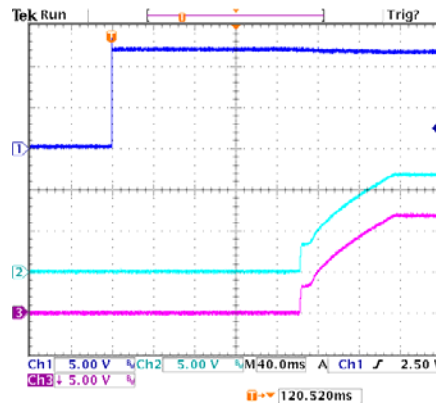


**Start up**

The input start-up from power supply.



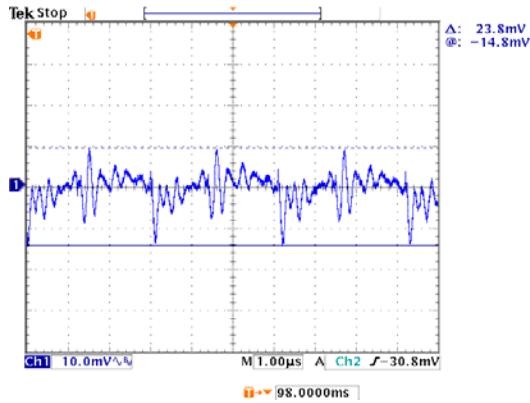
CH1:12Vin CH2:5Vout/FL  
 Start up delay time:235ms



CH1:12Vin CH2:+12Vout/FL  
 CH3:-12Vout/FL  
 Start up delay time:235ms

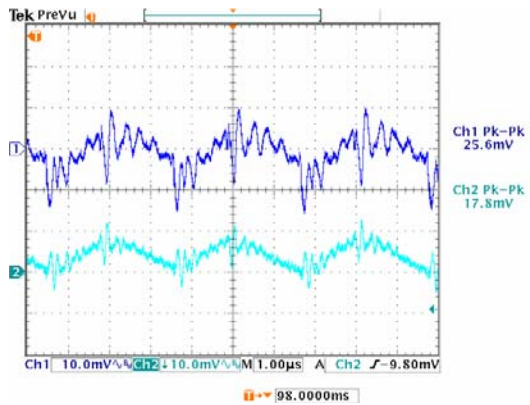
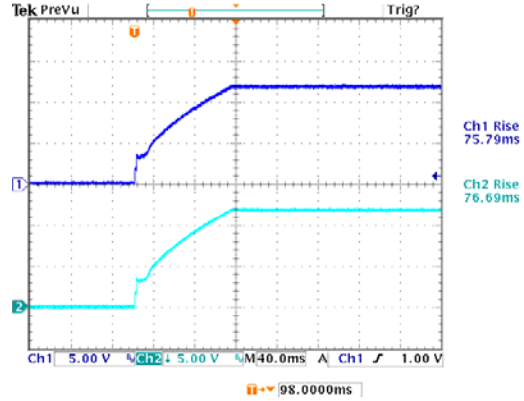
**Output Ripple and Noise**

The output voltage waveform measured at minimum load and full load current, with a 0.1uF ceramic capacitor across to close unit.



CH1:+5Vout/FL  
 Ripple:23.8mVp-p

CH1:+5Vout/FL  
 Overshoot:zero %  
 Rise time:79.72ms

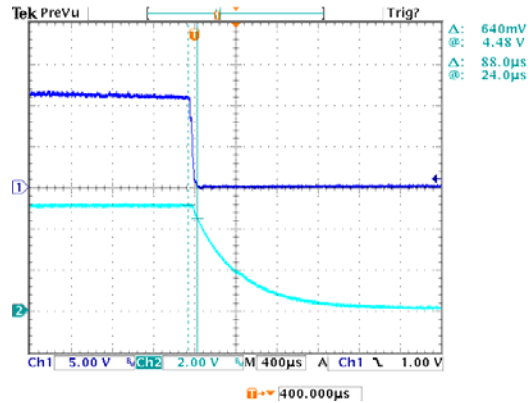


CH1:+12Vout/FL CH2:-12Vout/FL  
 Ripple:25.6mVp-p / 17.8mVp-p

CH1:+12Vout/FL Ch2:-12Vout/FL  
 Overshoot:zero %  
 Rise time:75.79ms / 76.69ms

**Hold time**

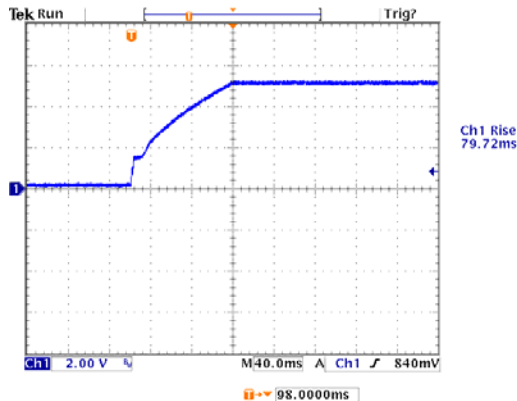
The hold time is measure from the power supply end or on/off pin is off to when Vout drop down to 90% output.

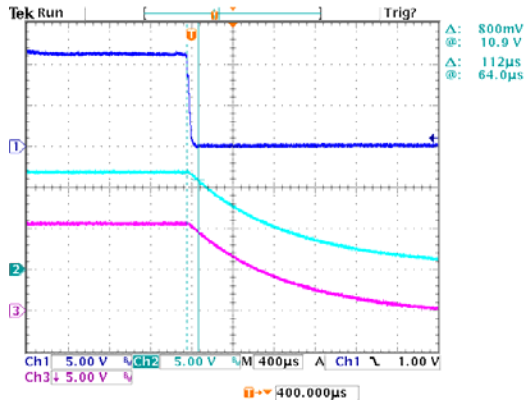


**Overshoot and rise time**

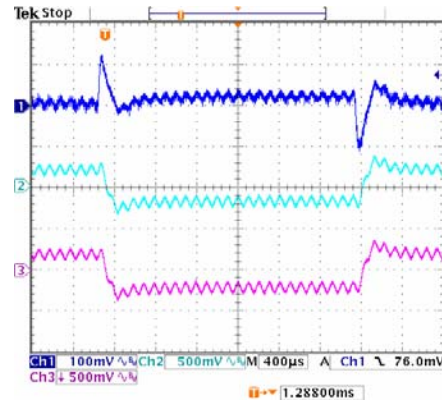
The input start-up from power supply.  
 The output voltage waveform measured at minimum load and full load current.

CH1:Vin Ch2:+5Vout/FL  
 Hold time:88.0us





CH1:Vin CH2:+12Vout/FL  
 Ch3:-12Vout/FL  
 Hold time:64.0us

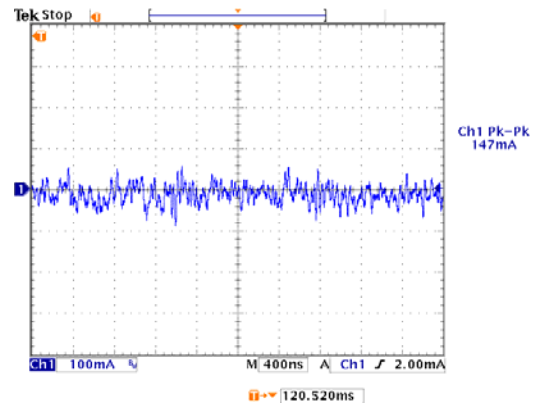


CH1:+5Vout Ch2:+12Vout  
 CH3:-12Vout Iout:0.1A/us  
 Load change 25%-75%-25%

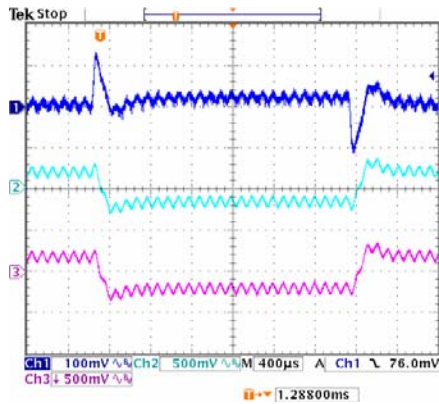
**Dynamic response**

Output voltage dynamic response at 12Vin and different load condition. Output with a 0.1uF ceramic capacitor.

**Input ripple current**



input ripple current:147mA<sub>p-p</sub>



CH1:+5Vout Ch2:+12Vout  
 CH3:-12Vout Iout:0.1A/us  
 Load change 50%-100%-50%