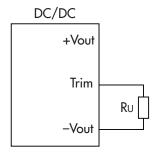


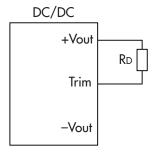
## **Output Voltage Adjustment**

This feature allows increasing and decreasing the output voltage of single output models. This is accomplished by connecting an external resistor between the Trim pin an either the +Vout or -Vout pin. The resulting external Trim resistor is specified in Ohm and needs to be at least 1/16 Watt of rated power.

#### Connection of trim up resistor



#### Connection of trim down resistor



#### Trim up equation

$$R_{U} = \frac{G \cdot L}{\left(U_{out,up} - L - K\right)} - H$$

#### Trim down equation

$$R_D = \frac{\left(U_{out,down} - L\right) \cdot G}{\left(U_{out,nom} - U_{out,down}\right)} - H$$

Trim constants				
Models	G	Н	K	L
THM xx-xx11(WI)	5110	2050	2.5	2.5
THM xx-xx12(WI)	10000	5110	9.5	2.5
THM xx-xx13(WI)	10000	5110	12.5	2.5
THM xx-xx15(WI)	56000	13000	21.5	2.5

For example: Trim up model THM 15-2411WI with  $\Delta U = 10$  % to output voltage of Uout,up = 5.5 V

$$R_U = \frac{G \cdot L}{\left(U_{out,up} - L - K\right)} - H = \frac{5110 \cdot 2.5}{\left(5.5 - 2.5 - 2.5\right)} - 2050 = 23500 \,\Omega$$

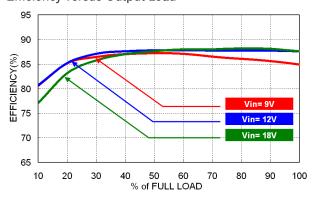
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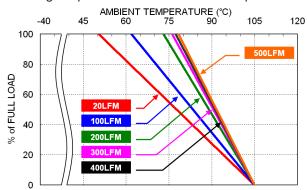
## **Characteristic Curves**

## THM 30-1211

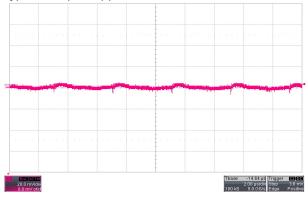
#### Efficiency versus Output Load



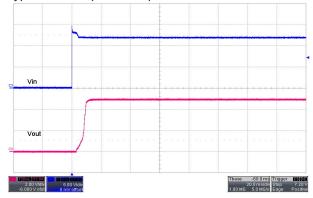
#### Derating Output Load versus Ambient Temperature



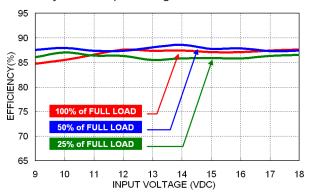
Typical Output Ripple and Noise



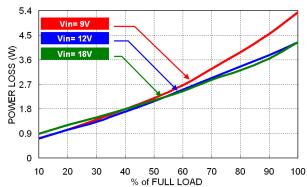
Typical Start-Up and Output Rise Characteristic



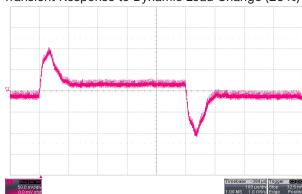
Efficiency versus Input Voltage



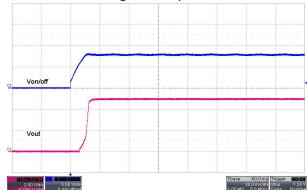
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



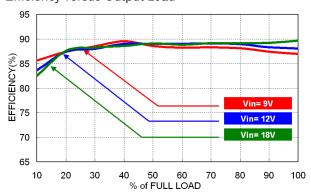
Remote on/off Voltage Start-Up Characteristic



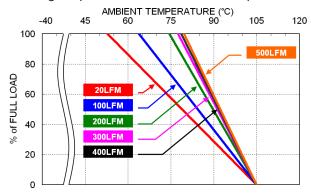
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#### THM 30-1212

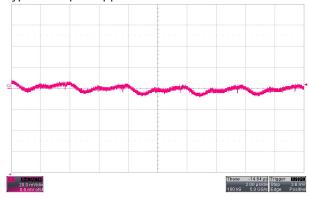
## Efficiency versus Output Load



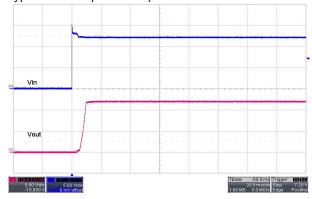
#### Derating Output Load versus Ambient Temperature



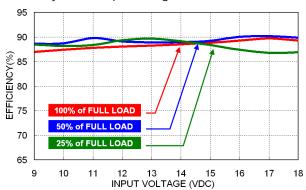
Typical Output Ripple and Noise



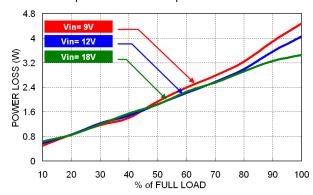
Typical Start-Up and Output Rise Characteristic



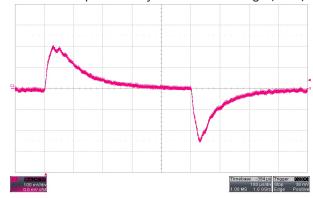
Efficiency versus Input Voltage



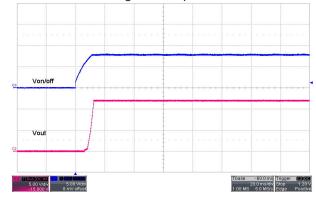
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

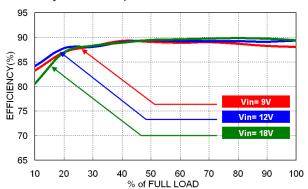


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

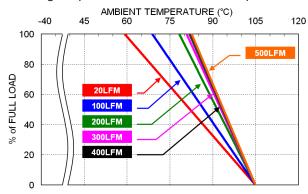
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## THM 30-1213

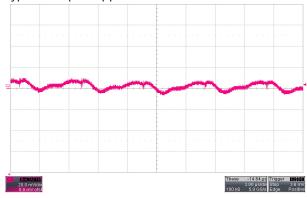




#### Derating Output Load versus Ambient Temperature



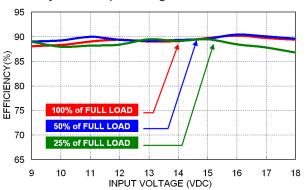
Typical Output Ripple and Noise



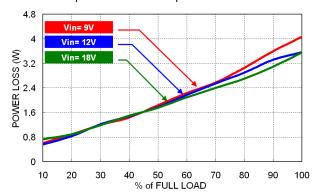
Typical Start-Up and Output Rise Characteristic



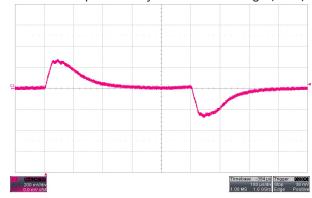
Efficiency versus Input Voltage



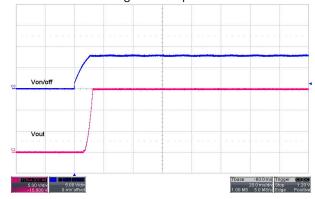
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

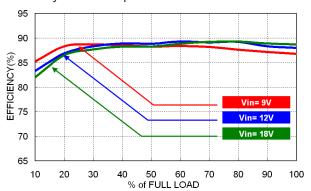


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

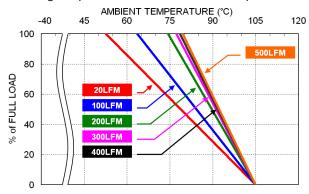
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## THM 30-1215

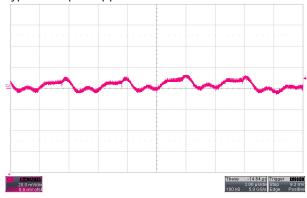
#### Efficiency versus Output Load



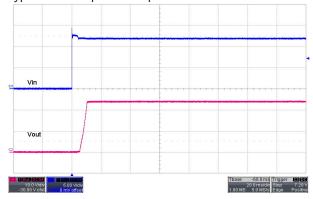
#### Derating Output Load versus Ambient Temperature



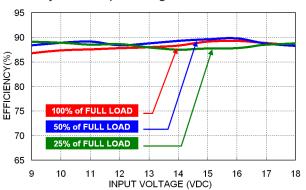
Typical Output Ripple and Noise



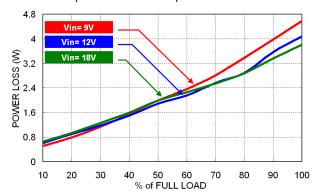
Typical Start-Up and Output Rise Characteristic



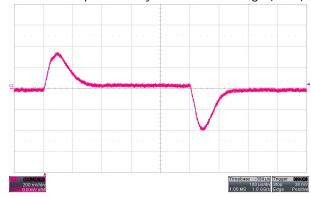
Efficiency versus Input Voltage



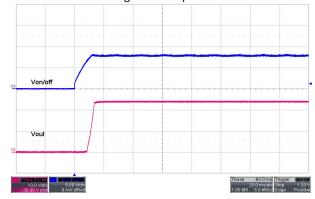
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

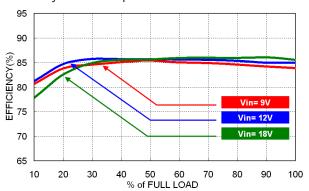


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

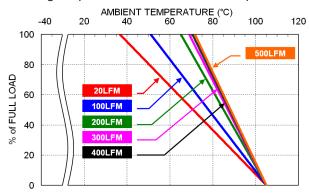
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#### THM 30-1221

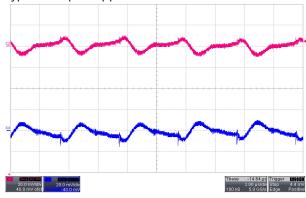
#### Efficiency versus Output Load



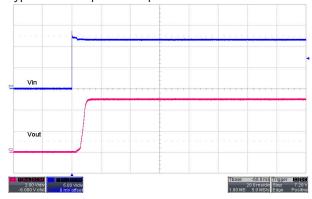
#### Derating Output Load versus Ambient Temperature



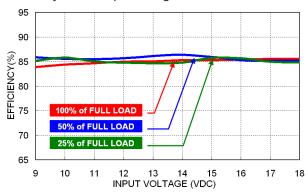
Typical Output Ripple and Noise



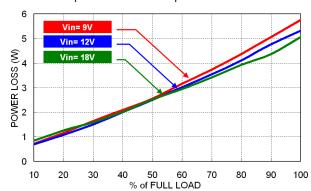
Typical Start-Up and Output Rise Characteristic



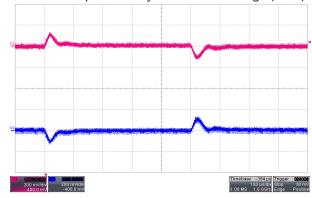
Efficiency versus Input Voltage



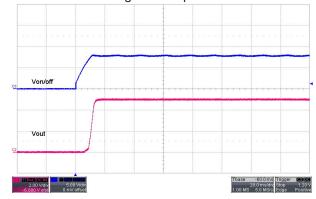
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

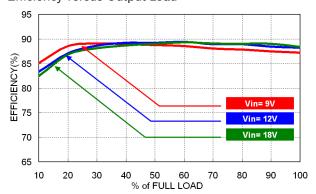


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

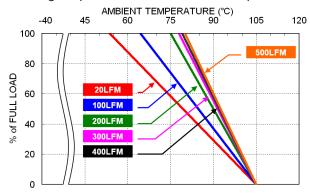
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#### THM 30-1222

## Efficiency versus Output Load



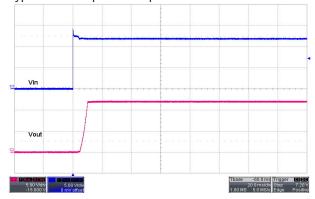
#### Derating Output Load versus Ambient Temperature



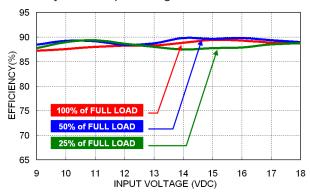
Typical Output Ripple and Noise



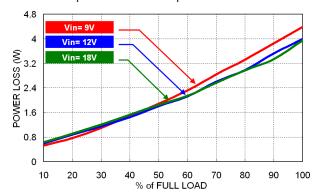
Typical Start-Up and Output Rise Characteristic



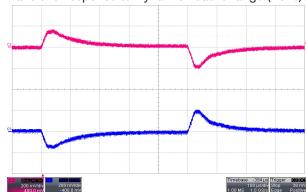
Efficiency versus Input Voltage



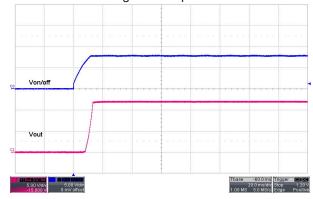
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

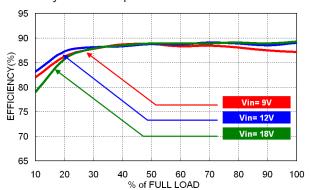


All specifications valid at nominal input voltage, full load and  $\pm 25^{\circ}\text{C}$  after warm-up time unless otherwise stated.

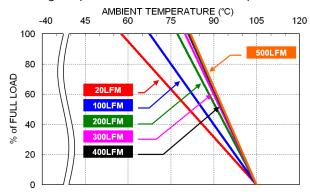
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## THM 30-1223

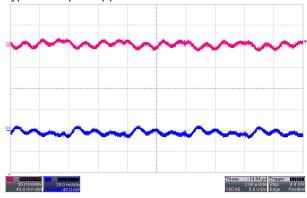
#### Efficiency versus Output Load



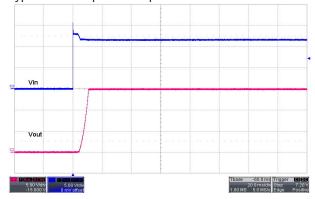
#### Derating Output Load versus Ambient Temperature



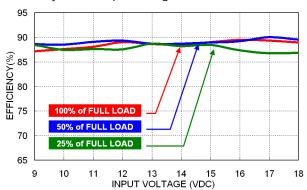
Typical Output Ripple and Noise



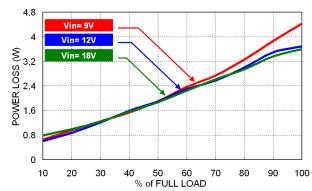
Typical Start-Up and Output Rise Characteristic



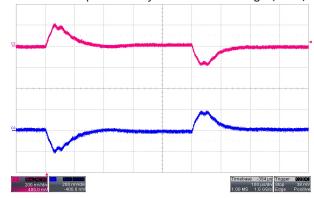
Efficiency versus Input Voltage



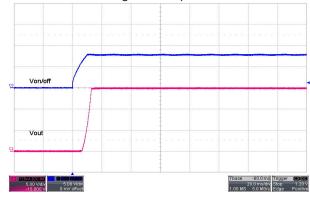
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

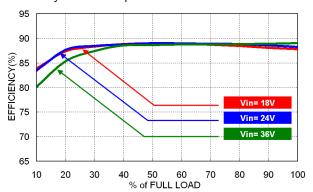


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

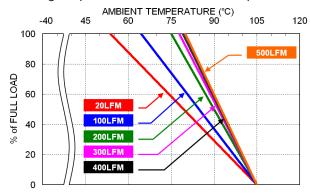
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#### THM 30-2411

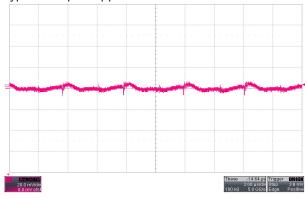
#### Efficiency versus Output Load



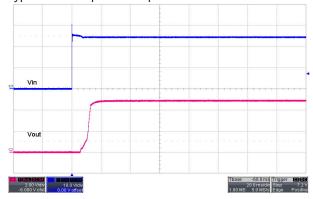
#### Derating Output Load versus Ambient Temperature



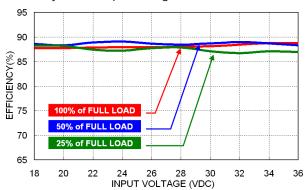
Typical Output Ripple and Noise



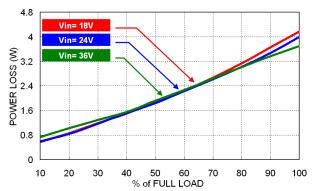
Typical Start-Up and Output Rise Characteristic



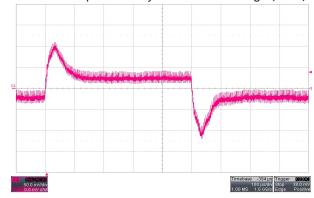
Efficiency versus Input Voltage



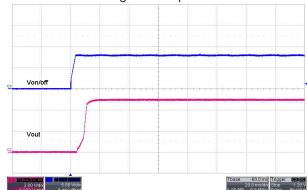
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

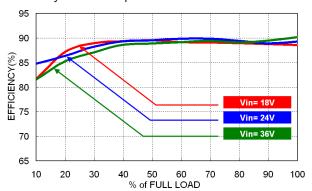


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

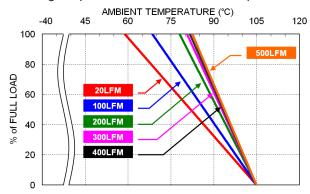
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#### THM 30-2412

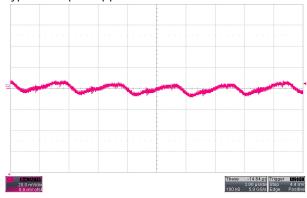
#### Efficiency versus Output Load



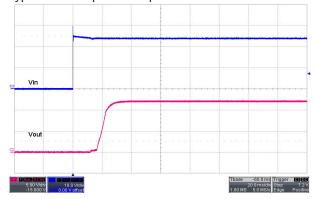
#### Derating Output Load versus Ambient Temperature



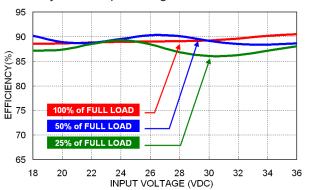
Typical Output Ripple and Noise



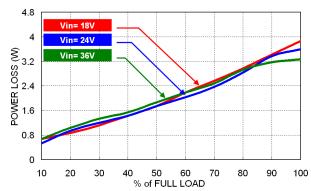
Typical Start-Up and Output Rise Characteristic



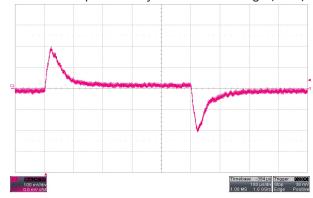
Efficiency versus Input Voltage



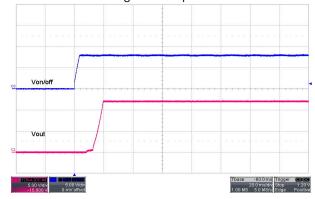
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

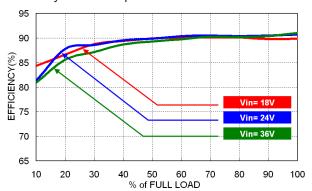


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

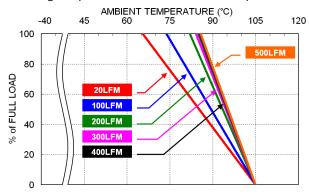
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## THM 30-2413

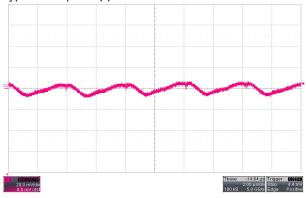
#### Efficiency versus Output Load



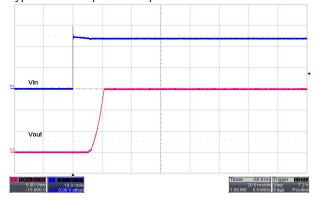
#### Derating Output Load versus Ambient Temperature



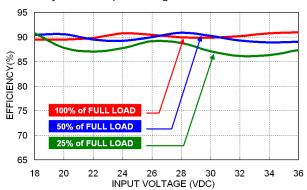
Typical Output Ripple and Noise



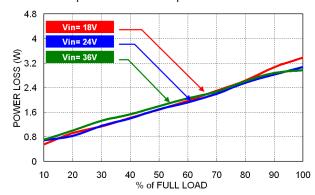
Typical Start-Up and Output Rise Characteristic



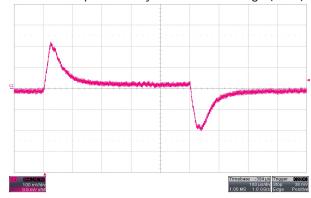
Efficiency versus Input Voltage



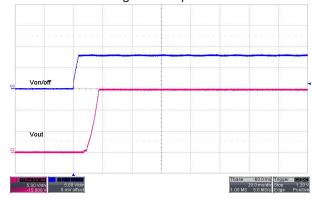
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

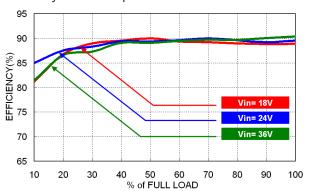


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

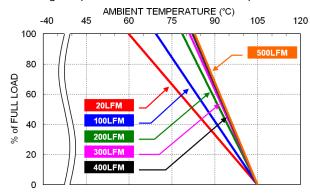
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## THM 30-2415

#### Efficiency versus Output Load



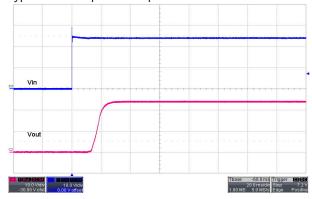
#### Derating Output Load versus Ambient Temperature



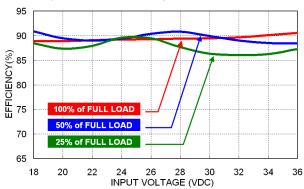
Typical Output Ripple and Noise



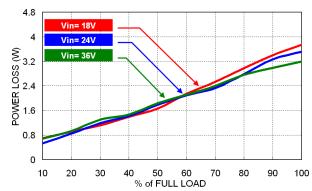
Typical Start-Up and Output Rise Characteristic



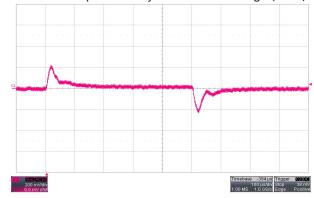
Efficiency versus Input Voltage



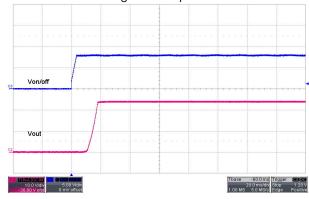
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

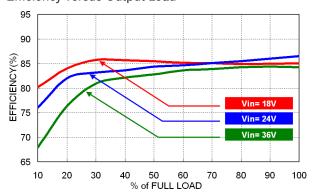


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

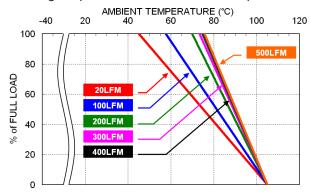
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## THM 30-2421

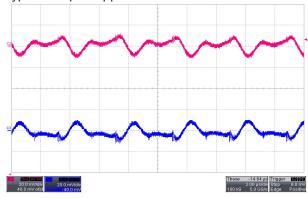
## Efficiency versus Output Load



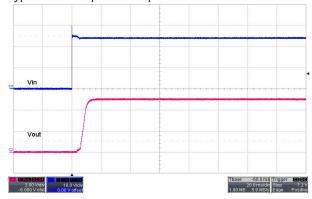
#### Derating Output Load versus Ambient Temperature



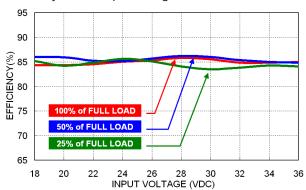
Typical Output Ripple and Noise



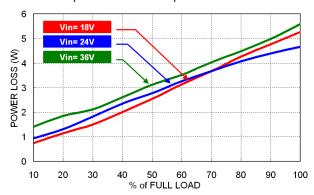
Typical Start-Up and Output Rise Characteristic



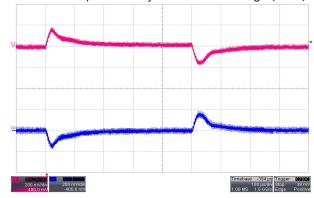
Efficiency versus Input Voltage



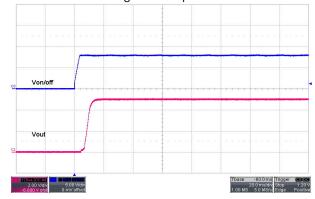
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

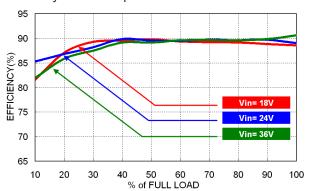


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

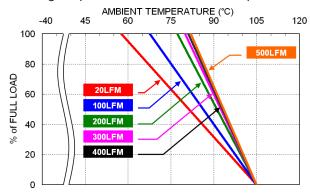
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#### THM 30-2422

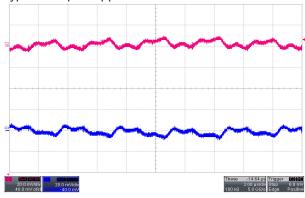
#### Efficiency versus Output Load



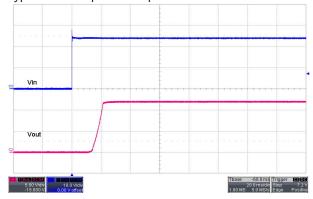
#### Derating Output Load versus Ambient Temperature



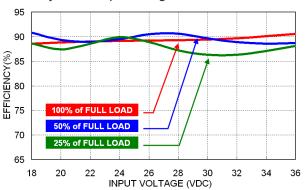
Typical Output Ripple and Noise



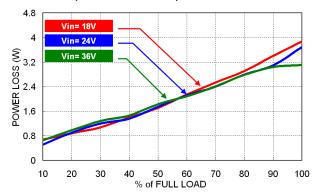
Typical Start-Up and Output Rise Characteristic



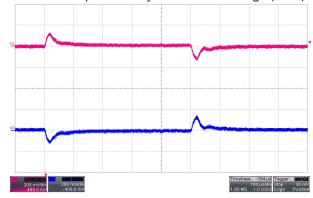
Efficiency versus Input Voltage



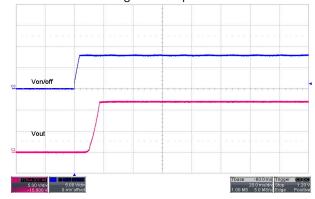
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

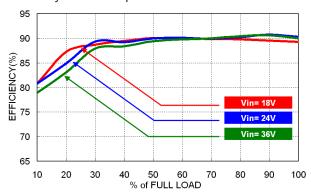


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

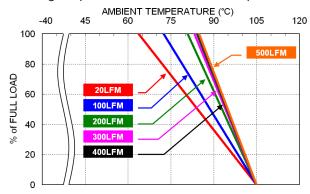
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## THM 30-2423

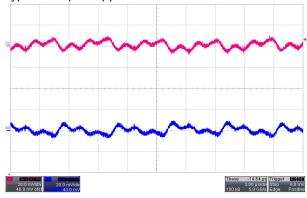
#### Efficiency versus Output Load



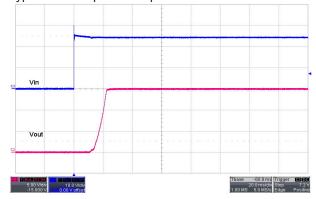
#### Derating Output Load versus Ambient Temperature



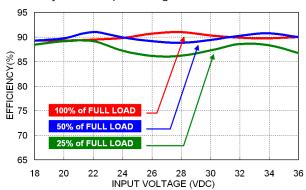
Typical Output Ripple and Noise



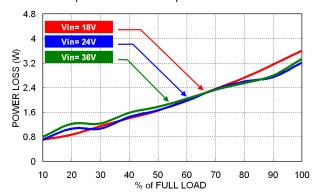
Typical Start-Up and Output Rise Characteristic



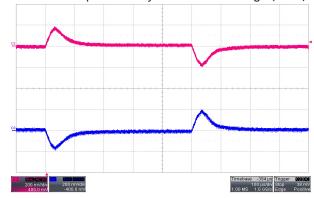
Efficiency versus Input Voltage



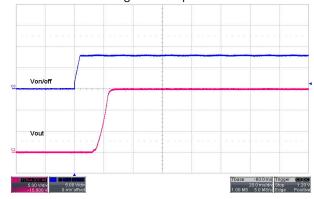
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



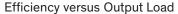
Remote on/off Voltage Start-Up Characteristic

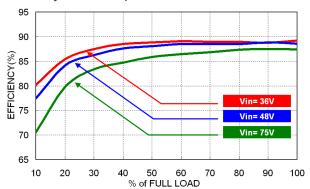


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

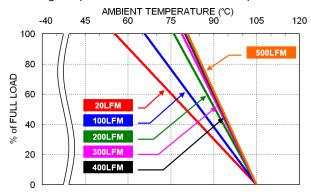
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#### THM 30-4811

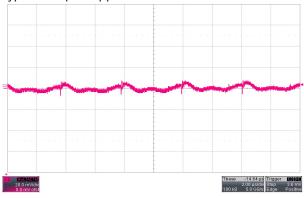




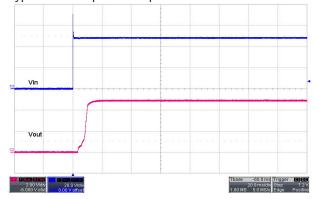
#### Derating Output Load versus Ambient Temperature



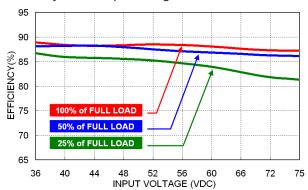
Typical Output Ripple and Noise



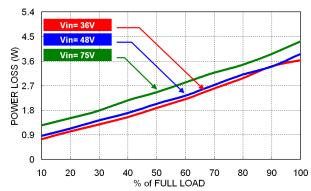
Typical Start-Up and Output Rise Characteristic



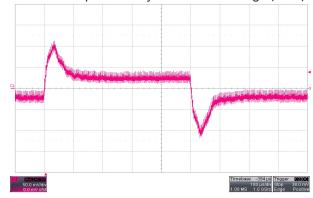
Efficiency versus Input Voltage



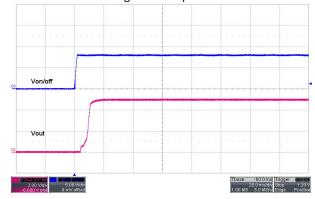
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic



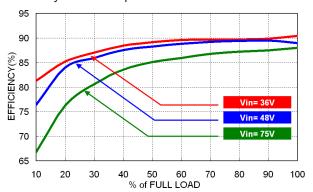
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

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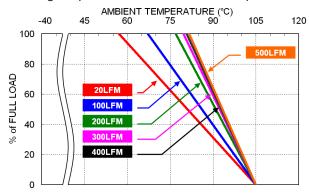


#### THM 30-4812

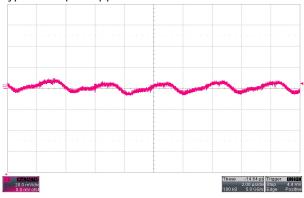
#### Efficiency versus Output Load



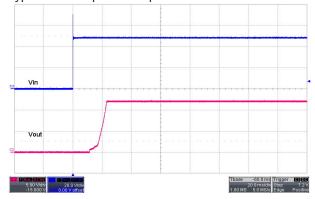
#### Derating Output Load versus Ambient Temperature



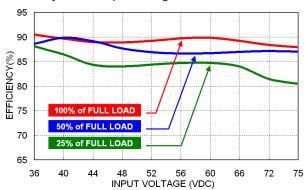
Typical Output Ripple and Noise



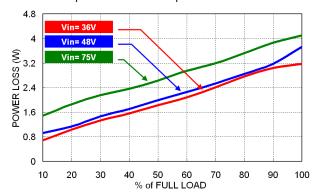
Typical Start-Up and Output Rise Characteristic



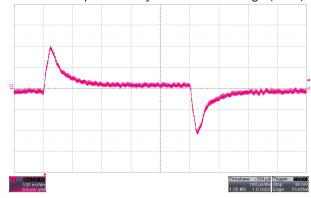
Efficiency versus Input Voltage



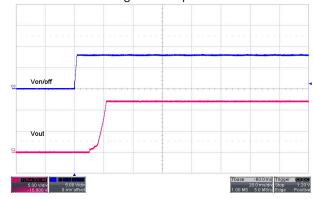
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

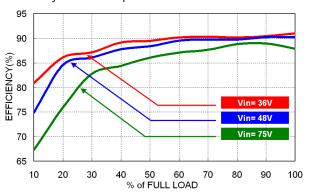


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

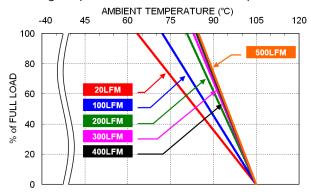
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#### THM 30-4813

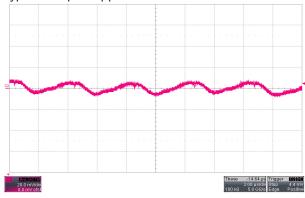
#### Efficiency versus Output Load



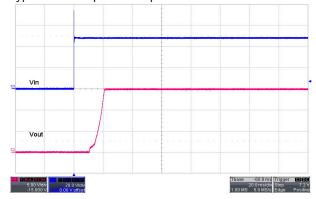
#### Derating Output Load versus Ambient Temperature



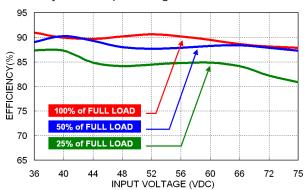
Typical Output Ripple and Noise



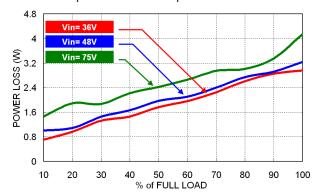
Typical Start-Up and Output Rise Characteristic



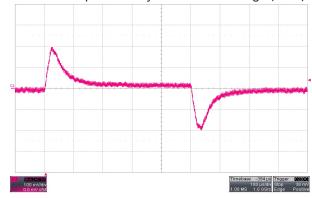
Efficiency versus Input Voltage



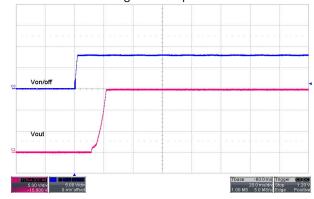
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

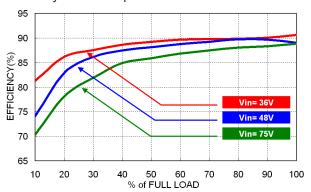


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

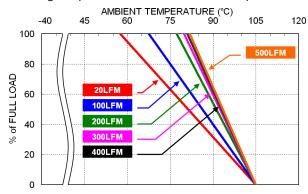
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#### THM 30-4815

#### Efficiency versus Output Load



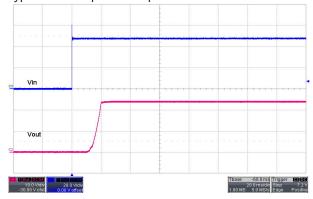
#### Derating Output Load versus Ambient Temperature



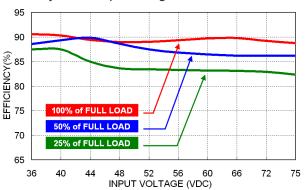
Typical Output Ripple and Noise



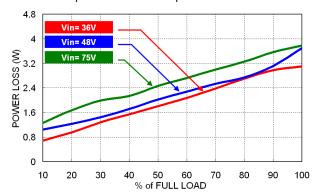
Typical Start-Up and Output Rise Characteristic



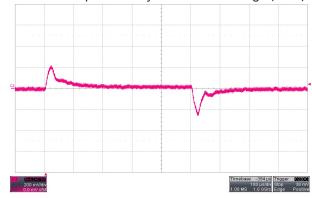
Efficiency versus Input Voltage



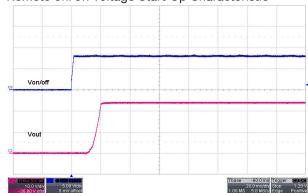
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



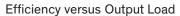
Remote on/off Voltage Start-Up Characteristic

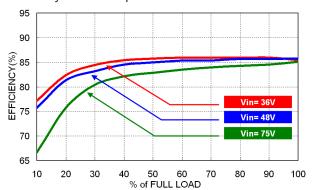


All specifications valid at nominal input voltage, full load and  $\pm 25^{\circ}\text{C}$  after warm-up time unless otherwise stated.

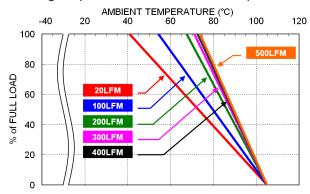
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#### THM 30-4821

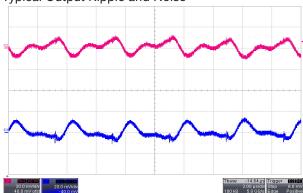




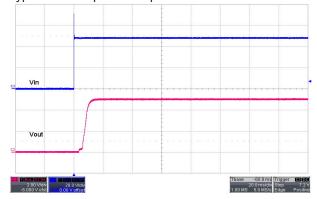
#### Derating Output Load versus Ambient Temperature



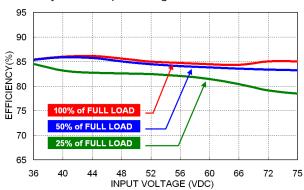
Typical Output Ripple and Noise



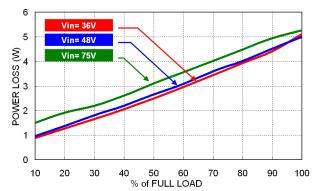
Typical Start-Up and Output Rise Characteristic



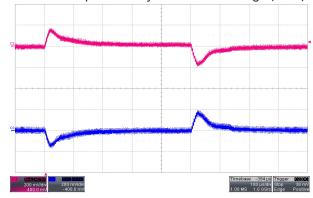
Efficiency versus Input Voltage



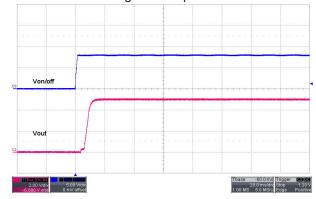
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

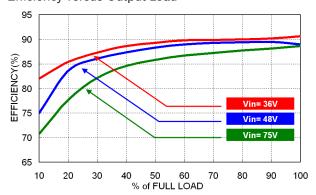


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

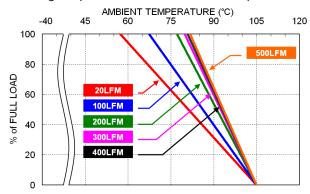
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#### THM 30-4822

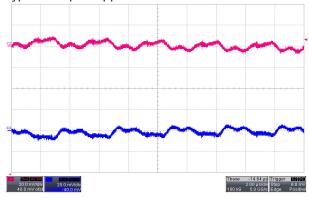
#### Efficiency versus Output Load



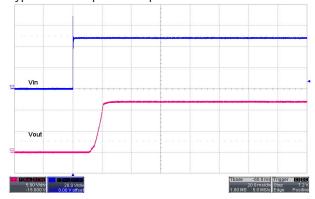
#### Derating Output Load versus Ambient Temperature



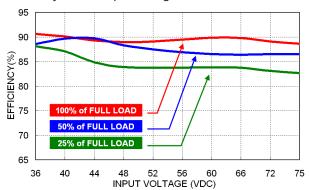
Typical Output Ripple and Noise



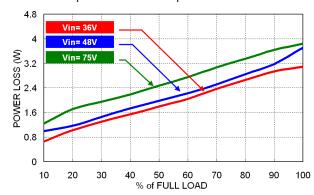
Typical Start-Up and Output Rise Characteristic



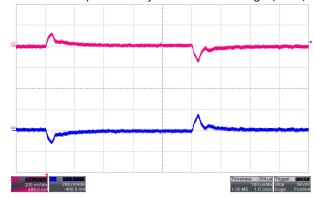
Efficiency versus Input Voltage



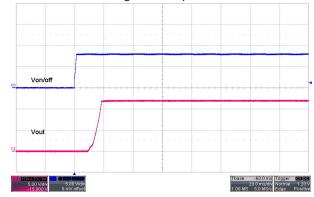
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic

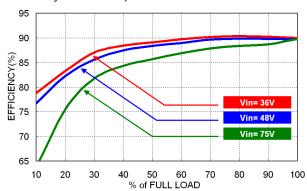


All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

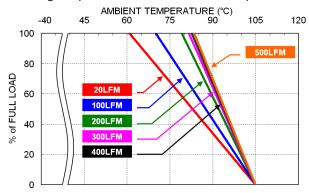
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## THM 30-4823

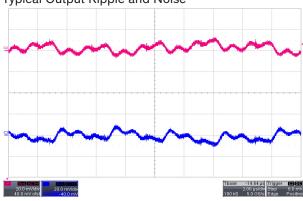
#### Efficiency versus Output Load



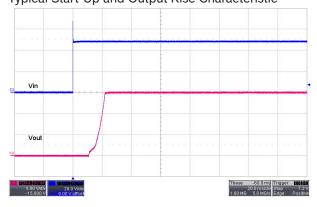
#### Derating Output Load versus Ambient Temperature



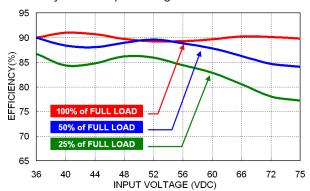
Typical Output Ripple and Noise



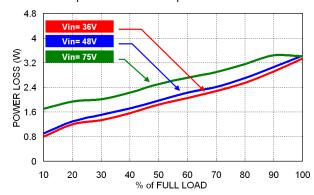
Typical Start-Up and Output Rise Characteristic



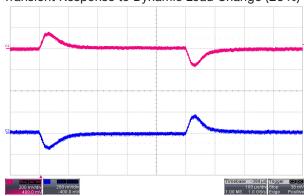
Efficiency versus Input Voltage



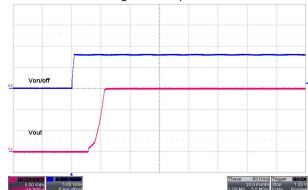
Power Dissipation versus Output Load



Transient Response to Dynamic Load Change (25%)



Remote on/off Voltage Start-Up Characteristic



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