

TEN 30-Single Series of Power Modules: DC/DC Converter

9 to 18 Vdc, 18 to 36 Vdc and 36 to 75 Vdc input, 1.5 to 15 Vdc Single Output 30Watts Output Power

Features

- ▶ RoHS compliant
- ▶ Single output up to 8.5A
- ▶ Six-sided continuous shield
- ▶ No minimum load required
- ▶ High power density
- ▶ High efficiency up to 91%
- ▶ Small size 2 x 1 x 0.4 inch (50.8 x 25.4 x 10.2 mm)
- ▶ Input to output isolation (1600VDC)
- ▶ 2:1 wide input voltage range
- ▶ Fixed switching frequency
- ▶ Input under-voltage protection
- ▶ Output over-voltage protection
- ▶ Over-current protection
- ▶ Output short circuit protection
- ▶ Remote on/off
- ▶ Case grounding

Options

- ▶ Negative logic Remote On/Off
- ▶ Heatsink



Applications

- ▶ Wireless Network
- ▶ Telecom / Datacom
- ▶ Industry Control System
- ▶ Measurement
- ▶ Semiconductor Equipment

General Description

The TEN 30 single output series offer 30 watts of output power from a 2 x 1.0 x 0.4 inch package. TEN30 single output series have 2:1 wide input voltage of 9-18VDC, 18-36VDC, 36-75VDC. The TEN 30 single output series features 1600VDC of isolation, short circuit protection, over-voltage protection, over-current protection and six sided shielding. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

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Absolute Maximum Rating					
Parameter	Model	Min	Max	Unit	
Input Voltage	TEN 30-121X TEN 30-241X TEN 30-481X			20	VDC
				40	
Transient (100ms)	TEN 30-121X TEN 30-241X TEN 30-481X			80	
				25	
				50	
Operating Ambient Temperature without derating	All			100	C
				50	
Operating Case Temperature	All			105	C
Storage Temperature	All	-55		105	C

Output Specification					
Parameter	Model	Min	Typ	Max	Unit
Output Voltage ($V_{in} = V_{in(nom)}$; Full Load ; $T_A=25C$)	TEN 30-XX07	1.485	1.5	1.515	VDC
	TEN 30-XX09	2.475	2.5	2.525	
	TEN 30-XX10	3.267	3.3	3.333	
	TEN 30-XX11	5.049	5.1	5.151	
	TEN 30-XX12	11.88	12	12.12	
	TEN 30-XX13	14.85	15	15.15	
Voltage adjustability (see page 45)	All	-10		+10	%
Output Regulation Line ($V_{in(min)}$ to $V_{in(max)}$ at Full Load) Load (0% to 100% of Full Load)	All			-0.2	% V_o
				-0.5	
Output Ripple & Noise (see page 42) Peak-to-Peak (5Hz to 20MHz bandwidth) (Measured with a 1 μ F/50V MLCC)	TEN 30-XX07			100	mVp-p
	TEN 30-XX09			100	
	TEN 30-XX10			100	
	TEN 30-XX11			100	
	TEN 30-XX12			150	
	TEN 30-XX13			150	
Temperature Coefficient	All	-0.02		+0.02	% V_o/C
Output Voltage Overshoot ($V_{in} = V_{in(min)}$ to $V_{in(max)}$; Full Load ; $T_A=25C$)	All		0	5	% V_o
Dynamic Load Response ($V_{in} = V_{in(nom)}$; $T_A=25C$) Load step change from 75% to 100% or 100 to 75% of Full Load Peak Deviation Setting Time (V_o/C 10% peak deviation)	All		300		mV
	All		250		μ s
Output Current	TEN 30-XX07	0		8500	mA
	TEN 30-XX09	0		8000	
	TEN 30-XX10	0		8000	
	TEN 30-XX11	0		6000	
	TEN 30-XX12	0		2500	
	TEN 30-XX13	0		2000	

Output Specification(Continued)					
Parameter	Model	Min	Typ	Max	Unit
Output Over Voltage Protection (Zener diode clamp)	TEN 30-XX07		2.0		VDC
	TEN 30-XX09		3.3		
	TEN 30-XX10		3.9		
	TEN 30-XX11		6.2		
	TEN 30-XX12		15		
	TEN 30-XX13		18		
Output Over Current Protection	All		150		% FL.
Output Short Circuit Protection	All	Hiccup, automatics recovery			

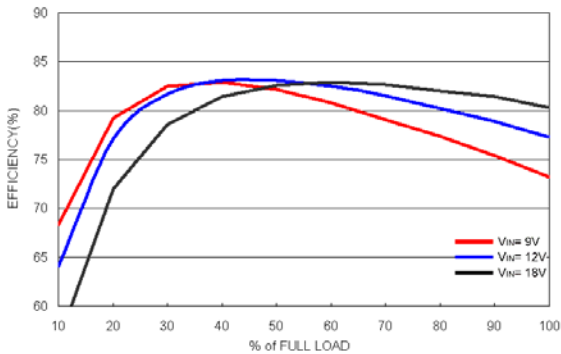
Input Specification					
Parameter	Model	Min	Typ	Max	Unit
Operating Input Voltage	TEN 30-121X	9	12	18	VDC
	TEN 30-241X	18	24	36	
	TEN 30-481X	36	48	75	
Input Current (Maximum value at Vin = Vin(nom); Full Load)	TEN 30-1207			1416	mA
	TEN 30-1209			2083	
	TEN 30-1210			2716	
	TEN 30-1211			3072	
	TEN 30-1212			2941	
	TEN 30-1213			2941	
	TEN 30-2407			700	
	TEN 30-2409			1028	
	TEN 30-2410			1325	
	TEN 30-2411			1482	
	TEN 30-2412			1437	
	TEN 30-2413			1437	
	TEN 30-4807			350	
	TEN 30-4809			514	
	TEN 30-4810			663	
TEN 30-4811			750		
TEN 30-4812			718		
TEN 30-4813			718		
Input Standby current (Typical value at Vin = Vin(nom); No Load)	TEN 30-1207		70		mA
	TEN 30-1209		100		
	TEN 30-1210		90		
	TEN 30-1211		130		
	TEN 30-1212		90		
	TEN 30-1213		80		
	TEN 30-2407		50		
	TEN 30-2409		50		
	TEN 30-2410		50		

Input Specification(Continuous)					
Parameter	Model	Min	Typ	Max	Unit
Input Standby current (Typical value at Vin = Vin(nom); No Load)	TEN 30-2411		75		mA
	TEN 30-2412		40		
	TEN 30-2413		30		
	TEN 30-4807		45		
	TEN 30-4809		45		
	TEN 30-4810		30		
	TEN 30-4811		45		
	TEN 30-4812		40		
	TEN 30-4813		40		
Under Voltage Lockout Turn-on Threshold	TEN 30-121X		9		VDC
	TEN 30-241X		18		
	TEN 30-481X		36		
Under Voltage Lockout Turn-off Threshold	TEN 30-121X		8		VDC
	TEN 30-241X		16		
	TEN 30-481X		32		
Input reflected ripple current (see page 42) (5 to 20MHz, 12μH source impedance)	All		20		mAp-p
Start Up Time (Vin = Vin(nom) and constant resistive load) Power up Remote ON/OFF	All				Ms
			30		
			30		
Remote ON/OFF Control (see page 48) (The On/Off pin voltage is referenced to -Vin) Positive logic On/Off pin High Voltage (Remote ON) On/Off pin Low Voltage (Remote OFF) Negative logic On/Off pin Low Voltage (Remote ON) On/Off pin High Voltage (Remote OFF)	All		3.0	12	VDC
			0	1.2	VDC
			0	1.2	VDC
			3.0	12	VDC
Remote Off Input Current	All		3		mA
Input Current of Remote Control Pin	All	-0.5		0.5	mA

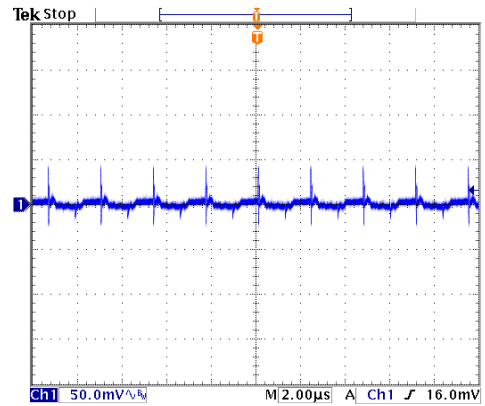
General Specification					
Parameter	Model	Min	Typ	Max	Unit
Efficiency (see page 42) (Vin = Vin(nom) ; Full Load ; TA=25C)	TEN 30-1207 TEN 30-1209 TEN 30-1210 TEN 30-1211 TEN 30-1212 TEN 30-1213 TEN 30-2407 TEN 30-2409 TEN 30-2410 TEN 30-2411 TEN 30-2412 TEN 30-2413 TEN 30-4807 TEN 30-4809 TEN 30-4810 TEN 30-4811 TEN 30-4812 TEN 30-4813		79 84 85 87 89 89 80 85 87 90 91 91 80 85 87 89 91 91		%
Case grounding	All	Connect case to -Vin with decoupling Y cap.			
Isolation voltage Input to Output Input to Case, Output to Case	All	1600 1600			VDC
Isolation resistance	All	1			GΩ
Isolation capacitance	All			1500	pF
Switching Frequency	All		430		KHz
Weight	All		30.5		g
MTBF Bellcore TR-NWT-000332, TC=40C MIL-STD-217F	All		3.17×10 ⁶ 5.55×10 ⁵		hours
Over temperature protection (see page 46)	All		115		C

Characteristic Curves

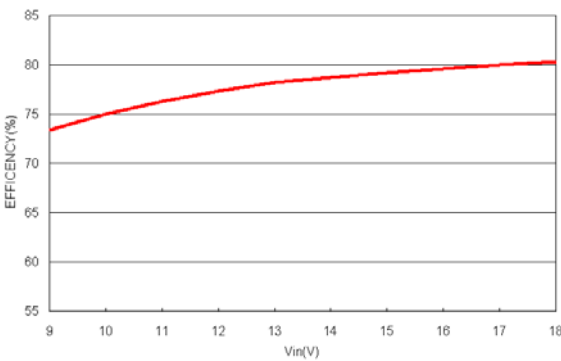
All test conditions are at 25°C. The figures are identical for TEN 30-1207



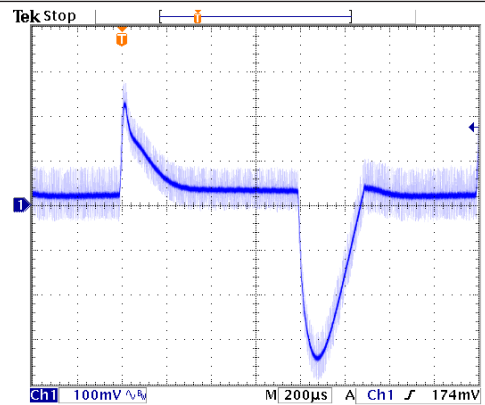
Efficiency Versus Output Current



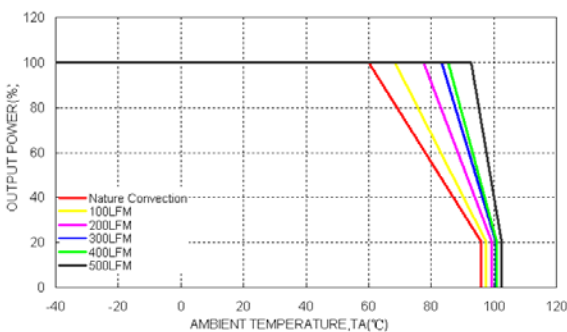
Typical Output Ripple and Noise.
 $V_{in} = V_{in}(nom)$, Full Load



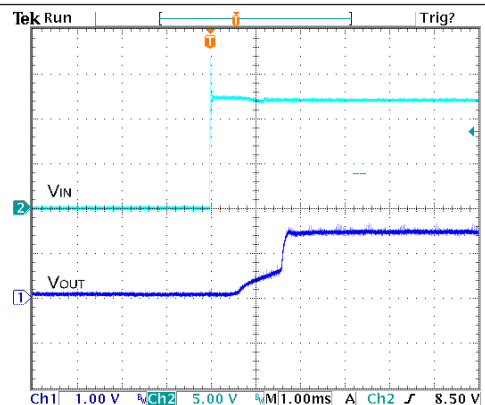
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in} = V_{in}(nom)$



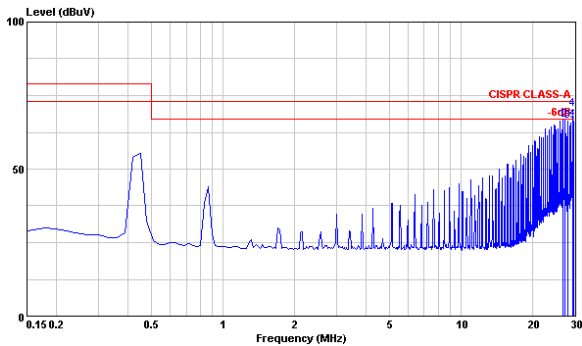
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$



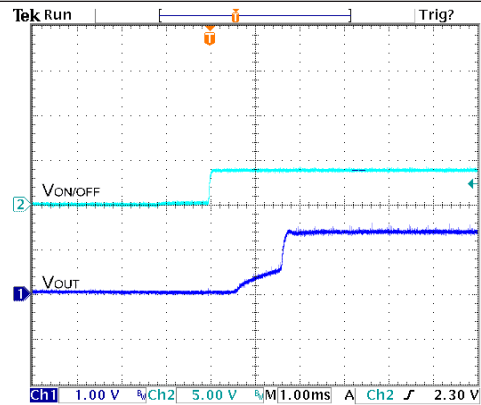
Typical Input Start-Up and Output Rise Characteristic
 $V_{in} = V_{in}(nom)$, Full Load

Characteristic Curves

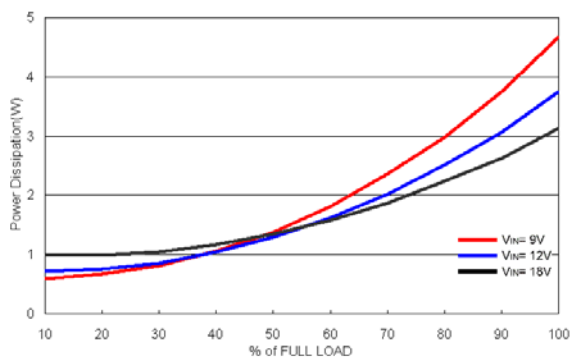
All test conditions are at 25°C. The figures are identical for TEN 30-1207 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



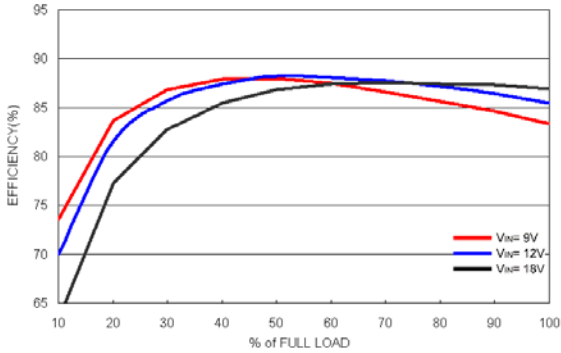
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



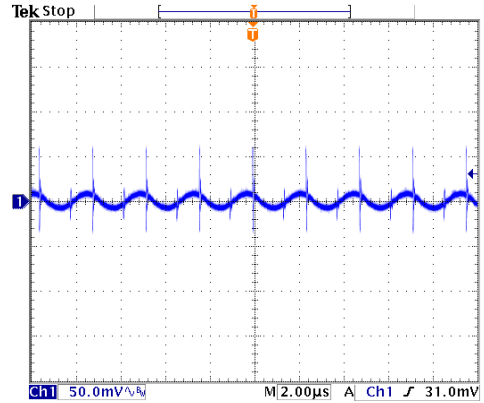
Power Dissipation Versus Output Current

Characteristic Curves

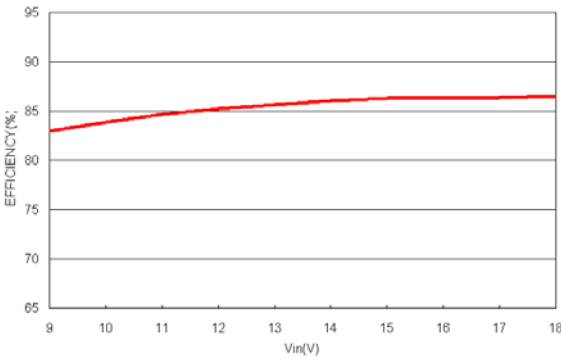
All test conditions are at 25°C. The figures are identical for TEN 30-1210



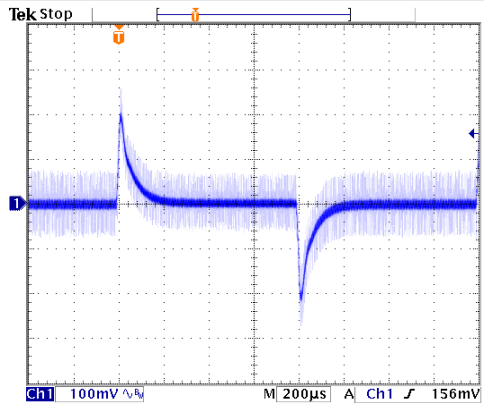
Efficiency Versus Output Current



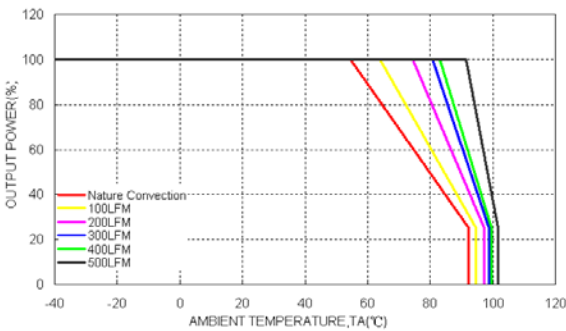
Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load



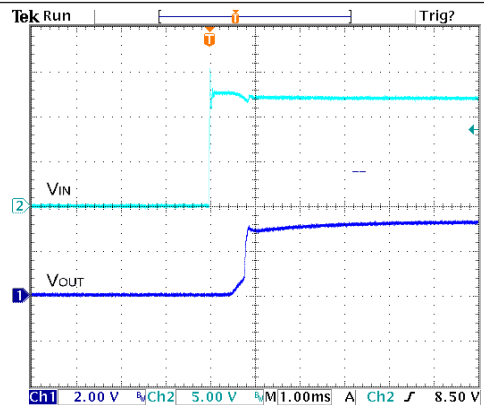
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$



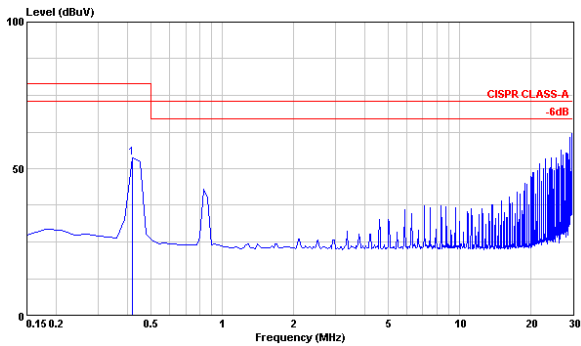
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$



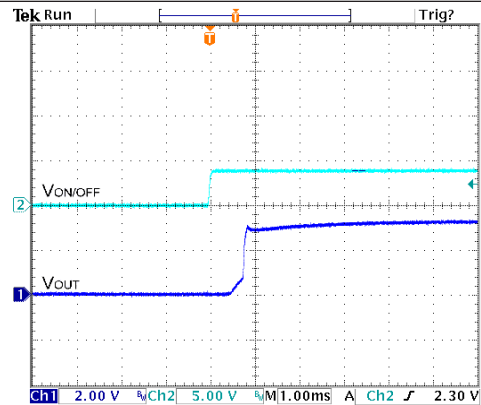
Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load

Characteristic Curves

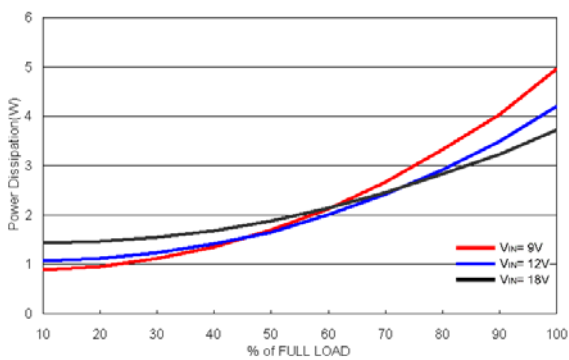
All test conditions are at 25°C. The figures are identical for TEN 30-1210 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



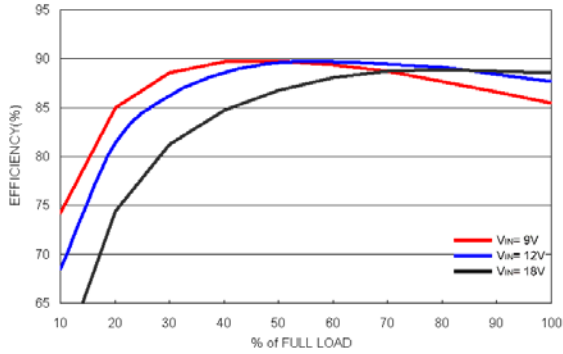
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



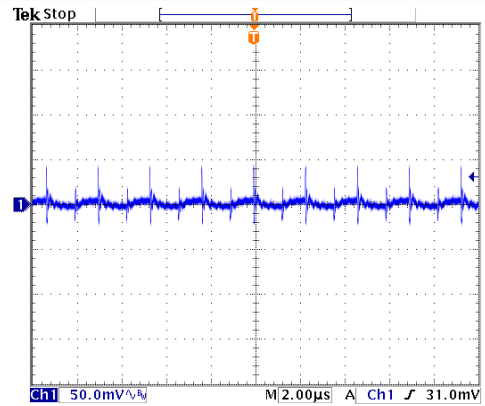
Power Dissipation Versus Output Current

Characteristic Curves

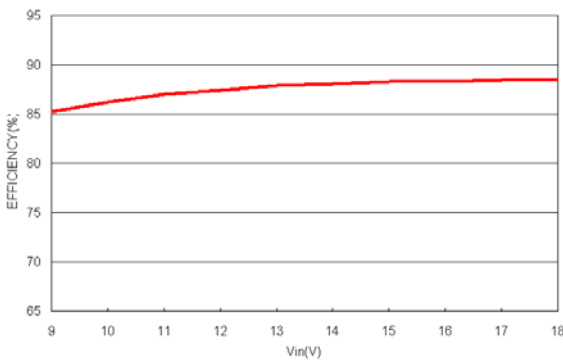
All test conditions are at 25C. The figures are identical for TEN 30-1211



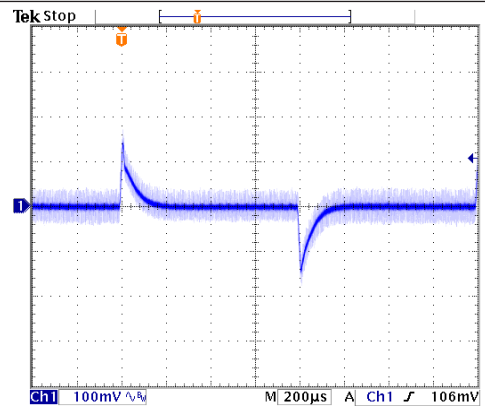
Efficiency Versus Output Current



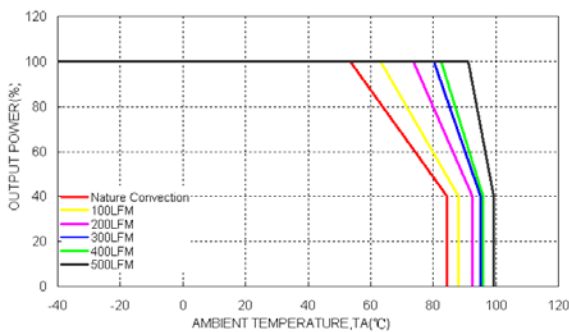
Typical Output Ripple and Noise.
 $V_{in} = V_{in}(nom)$, Full Load



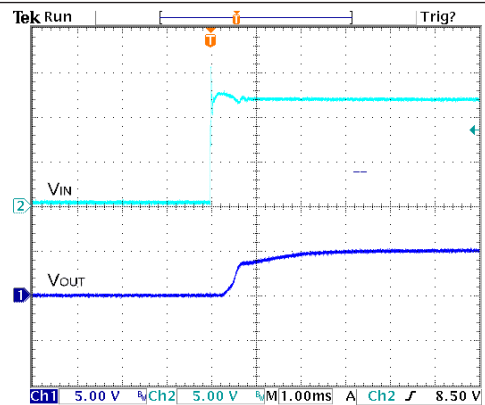
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in} = V_{in}(nom)$



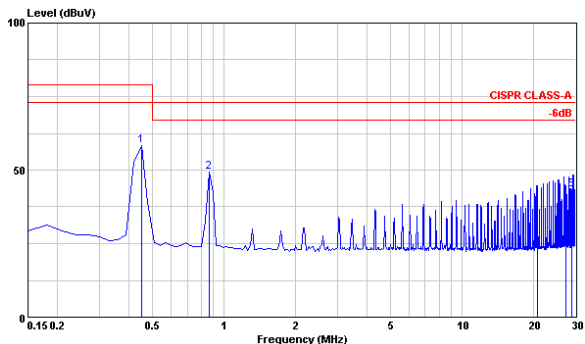
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$



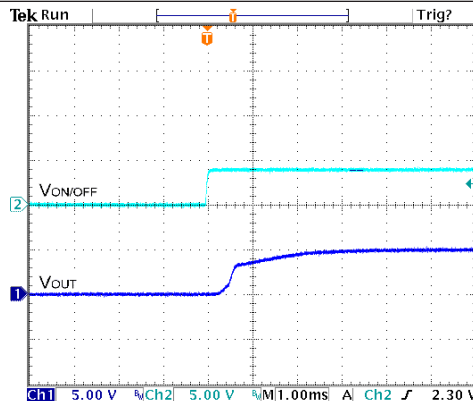
Typical Input Start-Up and Output Rise Characteristic
 $V_{in} = V_{in}(nom)$, Full Load

Characteristic Curves

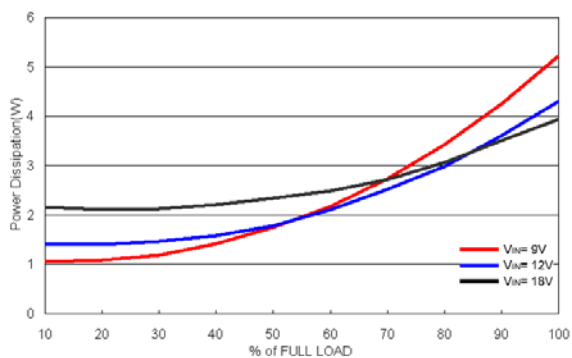
All test conditions are at 25°C. The figures are identical for TEN 30-1211 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



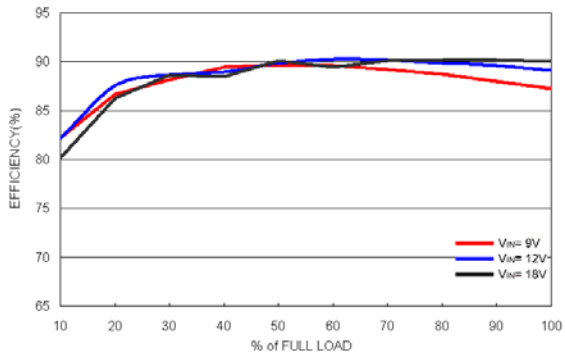
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



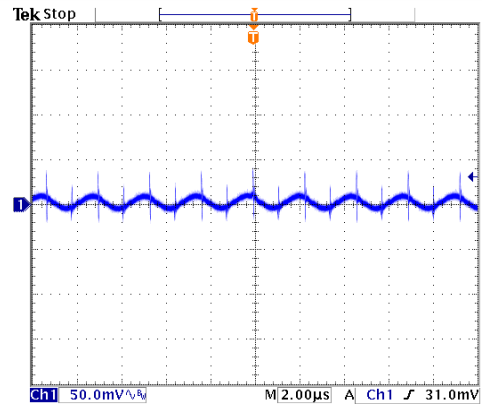
Power Dissipation Versus Output Current

Characteristic Curves

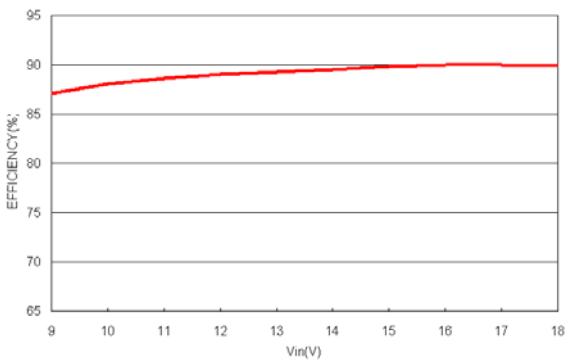
All test conditions are at 25°C. The figures are identical for TEN 30-1212



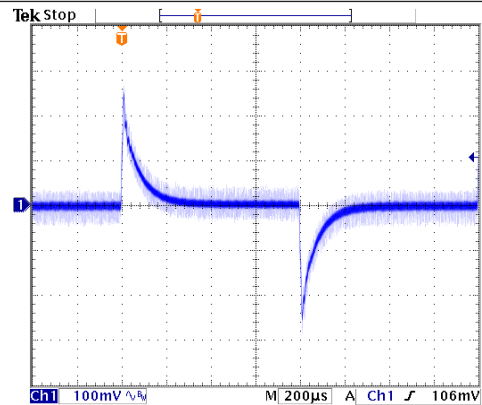
Efficiency Versus Output Current



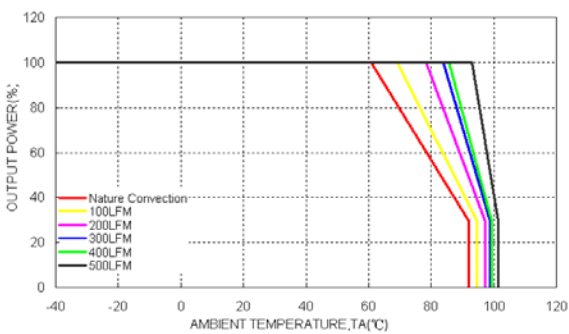
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



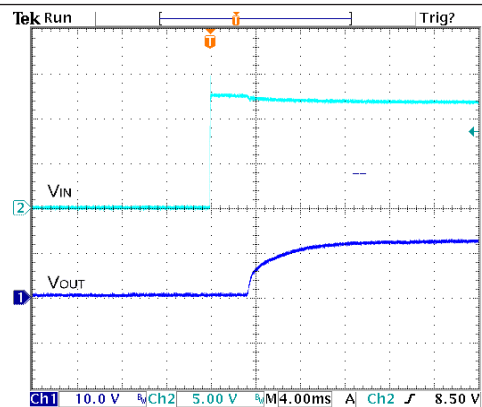
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



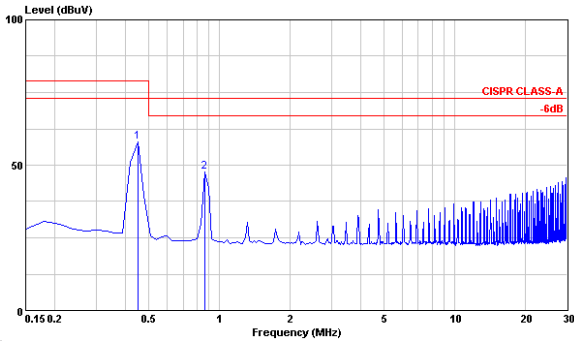
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)



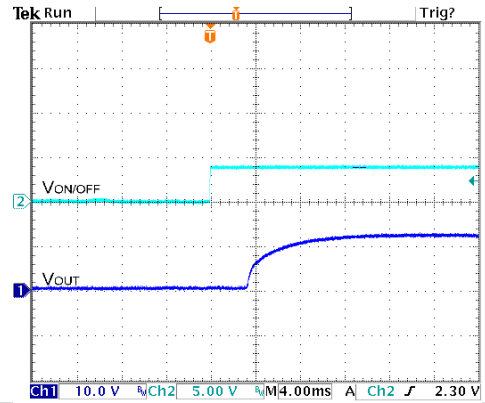
Typical Input Start-Up and Output Rise Characteristic
Vin=Vin(nom), Full Load

Characteristic Curves

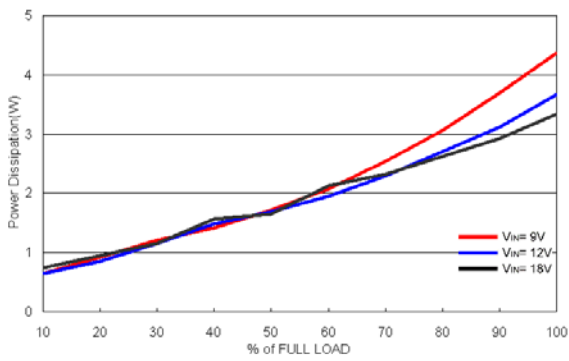
All test conditions are at 25°C. The figures are identical for TEN 30-12S12 (Continued)



**Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load**



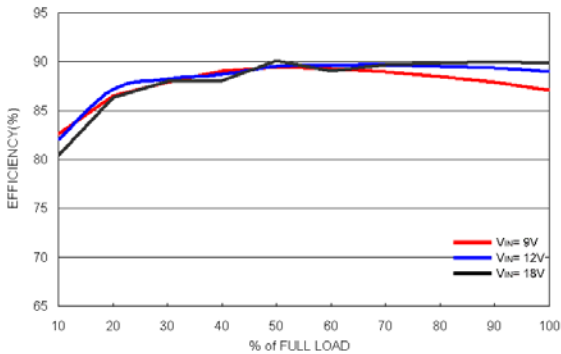
**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load**



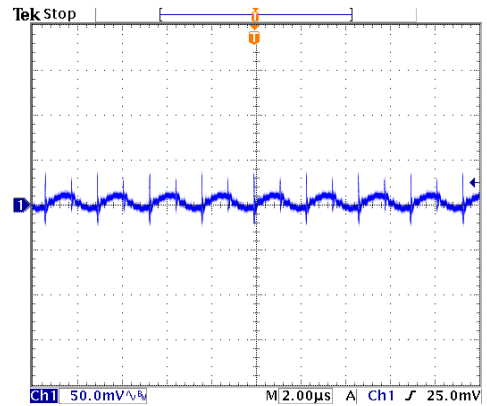
Power Dissipation Versus Output Current

Characteristic Curves

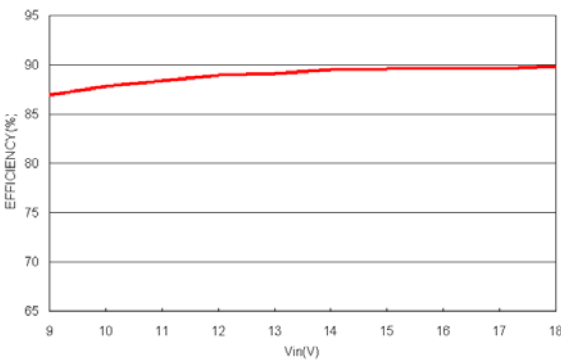
All test conditions are at 25°C. The figures are identical for TEN 30-1213



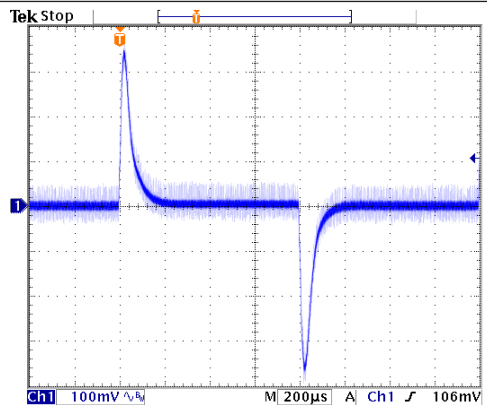
Efficiency Versus Output Current



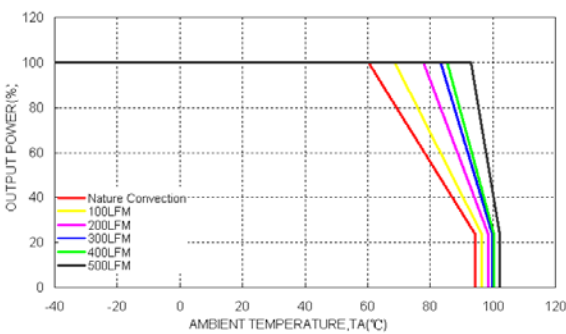
Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load



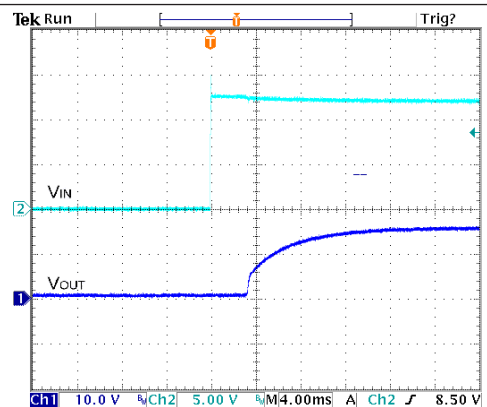
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$



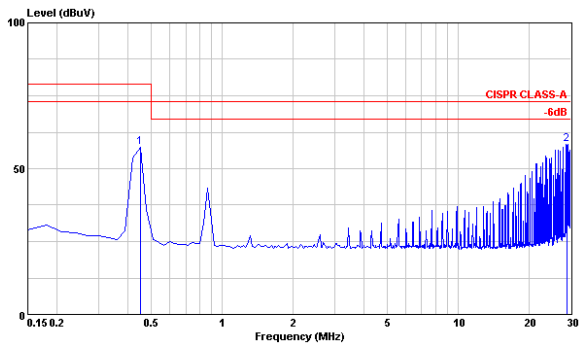
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$



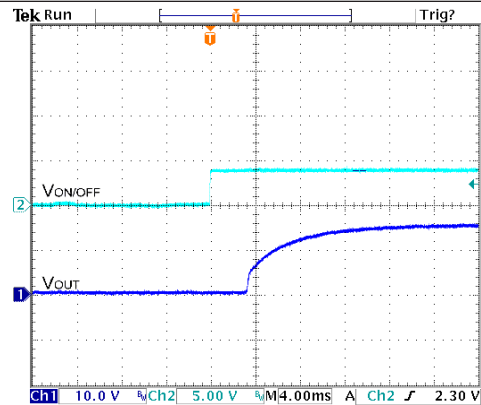
Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load

Characteristic Curves

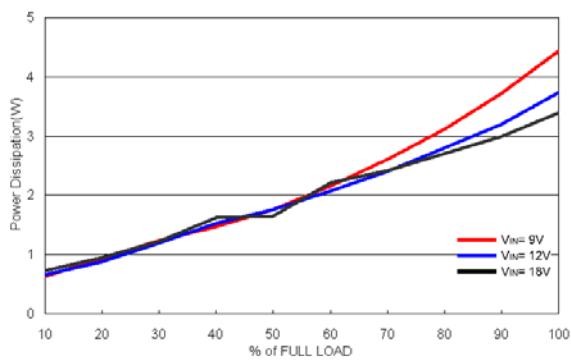
All test conditions are at 25°C. The figures are identical for TEN 30-1213 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



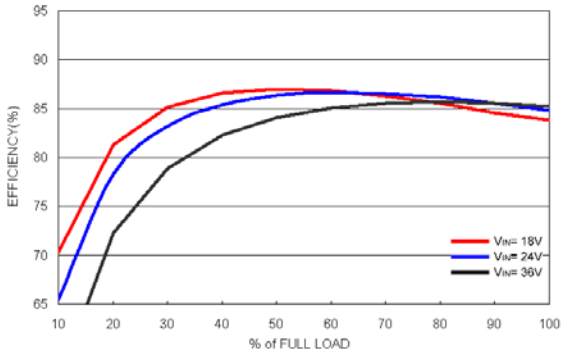
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



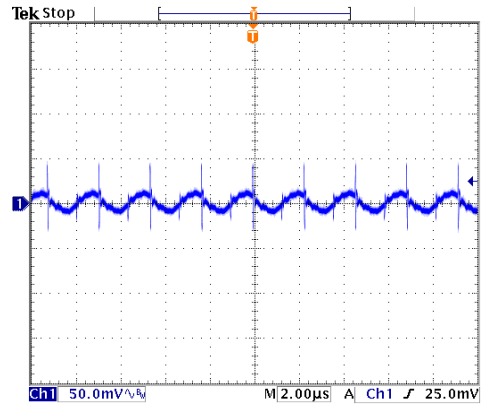
Power Dissipation Versus Output Current

Characteristic Curves

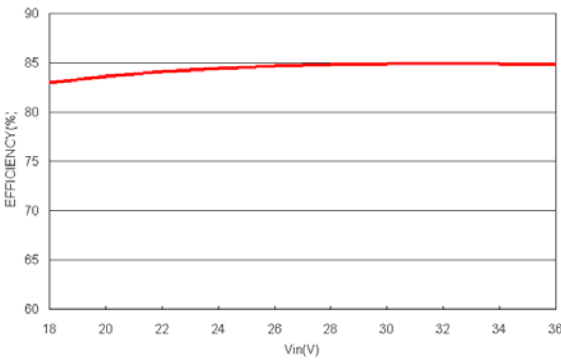
All test conditions are at 25C. The figures are identical for TEN 30-2409



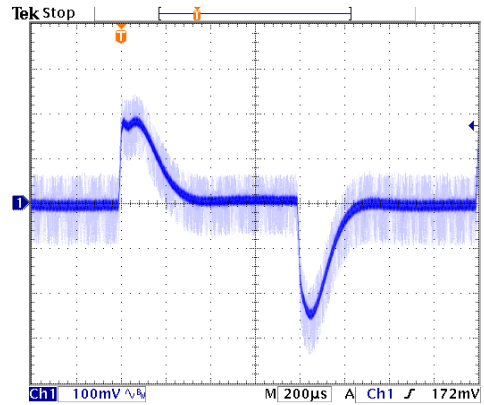
Efficiency Versus Output Current



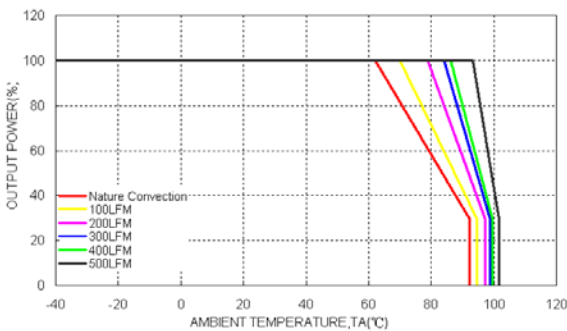
**Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load**



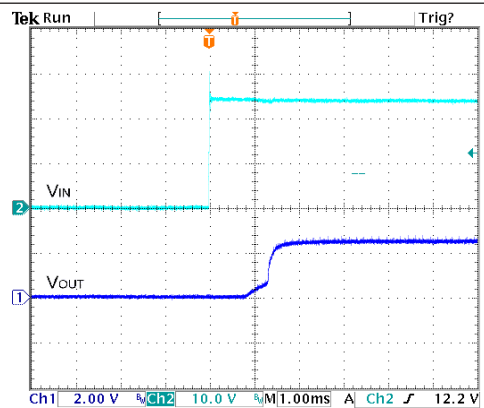
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$**



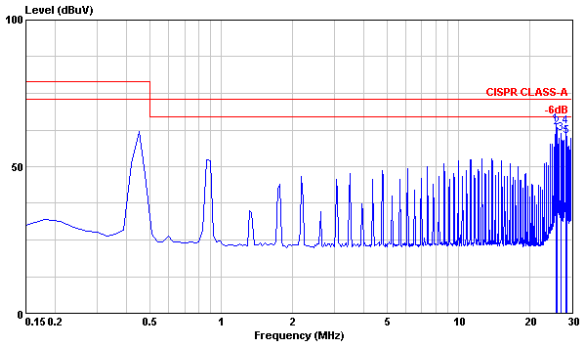
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$**



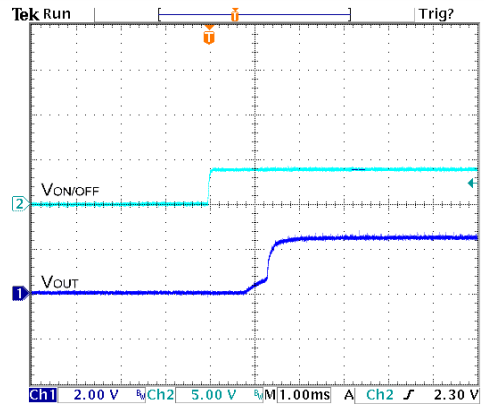
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load**

Characteristic Curves

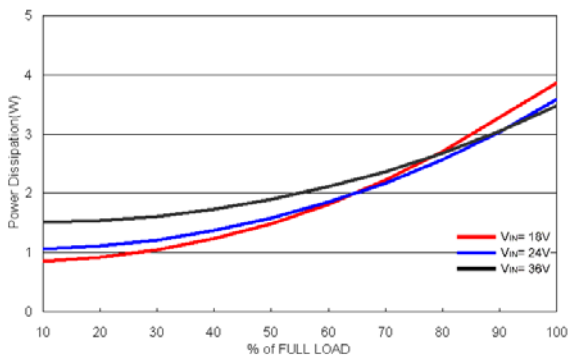
All test conditions are at 25°C. The figures are identical for TEN 30-2409 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



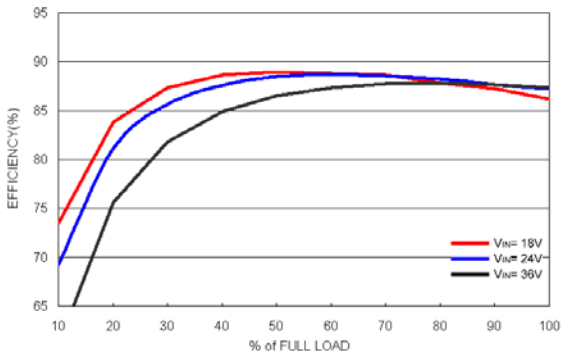
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



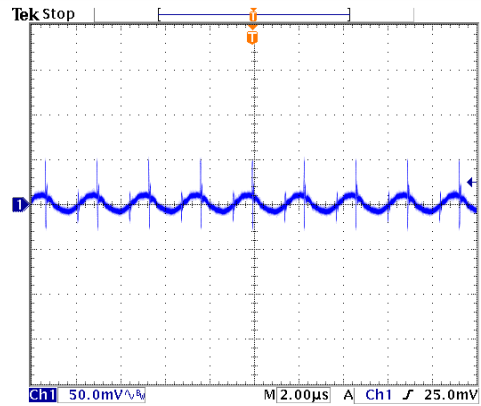
Power Dissipation Versus Output Current

Characteristic Curves

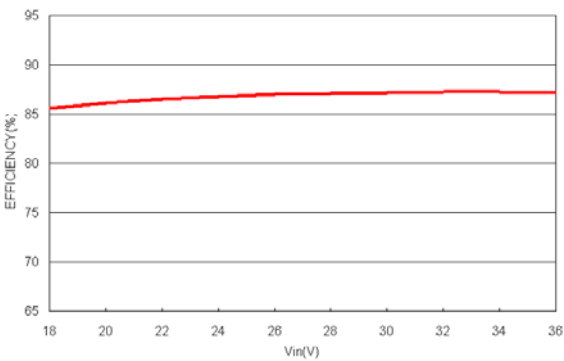
All test conditions are at 25°C. The figures are identical for TEN 30-2410



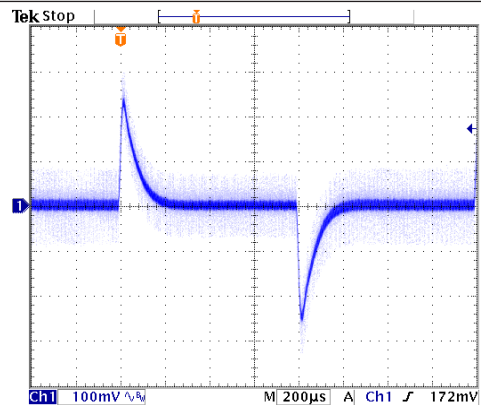
Efficiency Versus Output Current



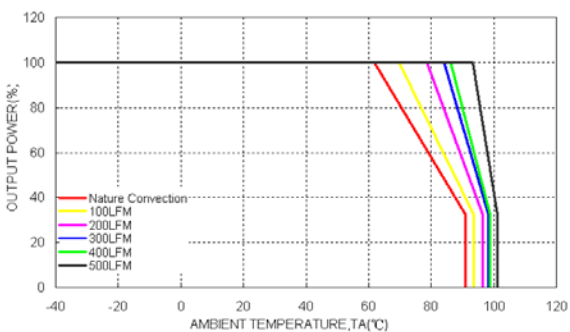
Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load



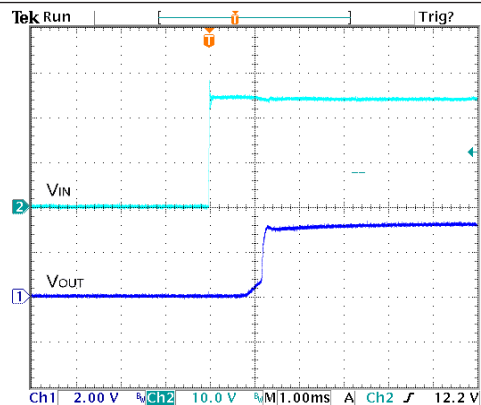
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$



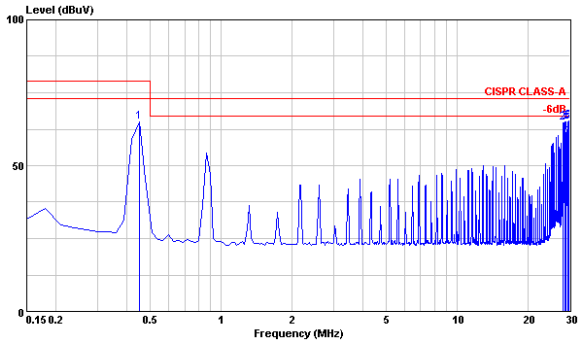
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$



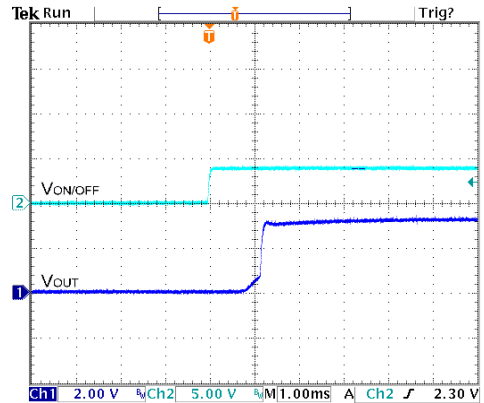
Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load

Characteristic Curves

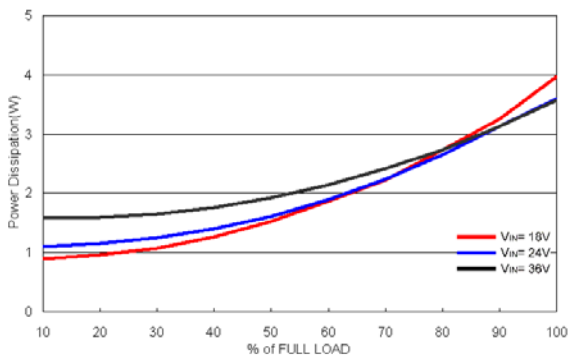
All test conditions are at 25°C. The figures are identical for TEN 30-2410 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



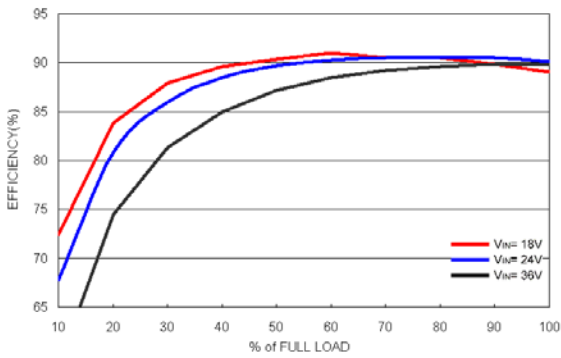
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



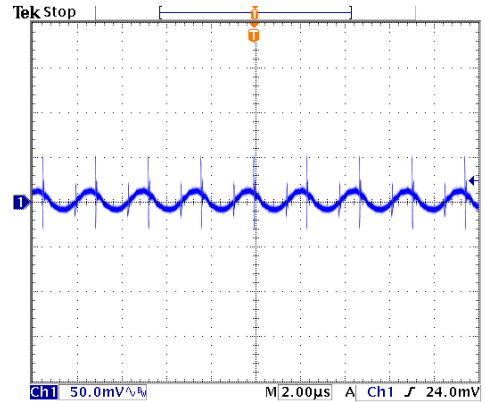
Power Dissipation Versus Output Current

Characteristic Curves

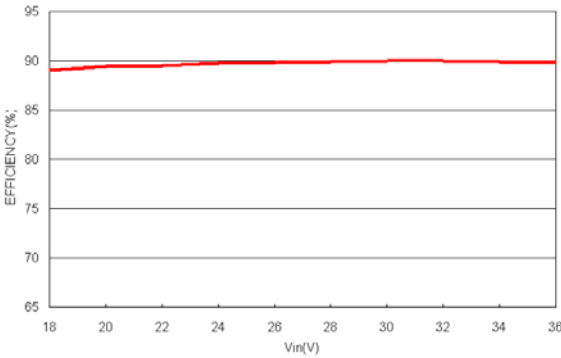
All test conditions are at 25°C. The figures are identical for TEN 30-2411



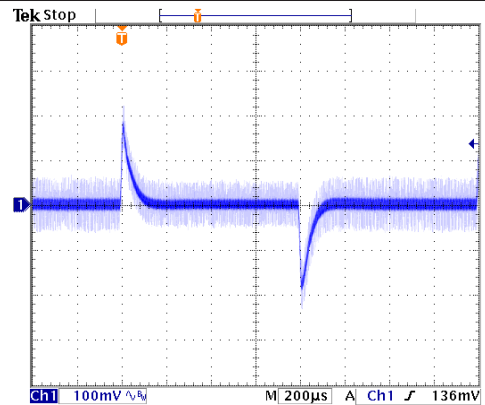
Efficiency Versus Output Current



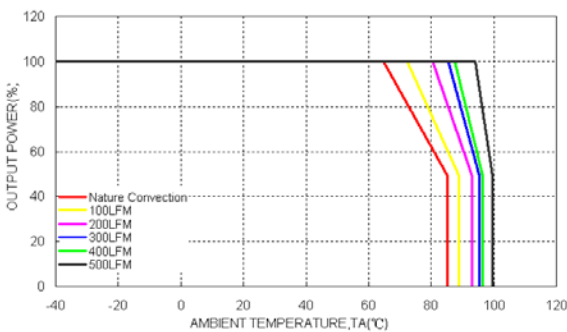
**Typical Output Ripple and Noise.
 $V_{in} = V_{in}(nom)$, Full Load**



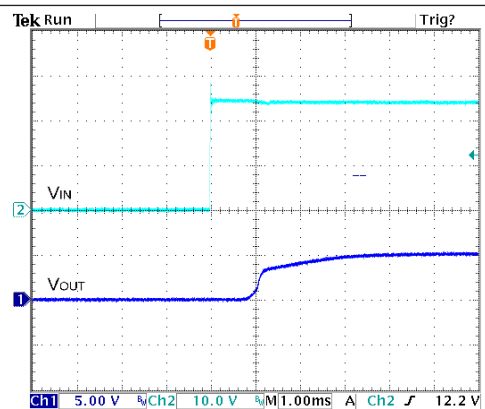
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in} = V_{in}(nom)$**



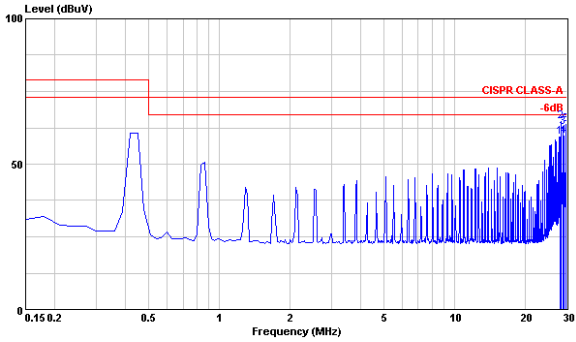
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$**



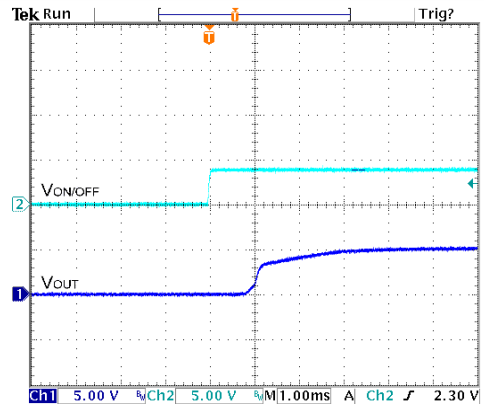
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in} = V_{in}(nom)$, Full Load**

Characteristic Curves

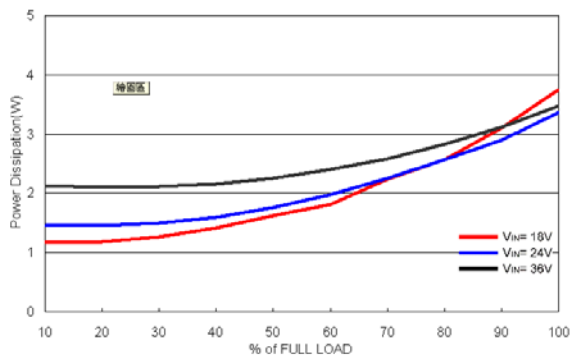
All test conditions are at 25°C. The figures are identical for TEN 30-2411 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



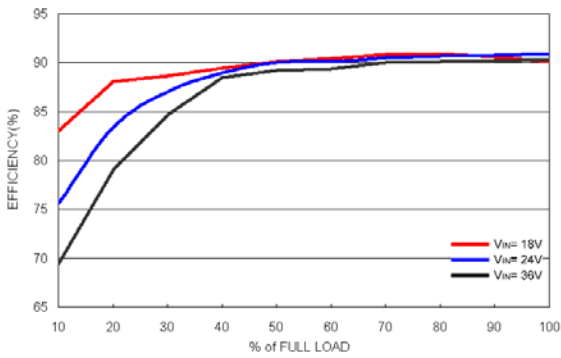
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



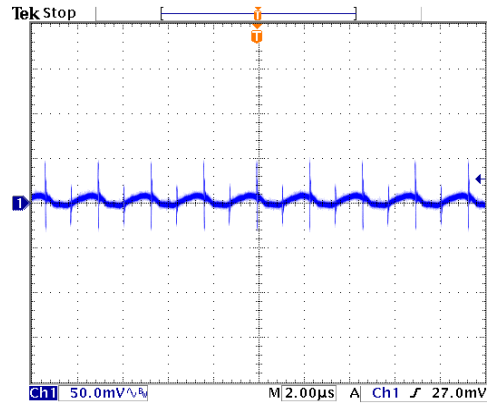
Power Dissipation Versus Output Current

Characteristic Curves

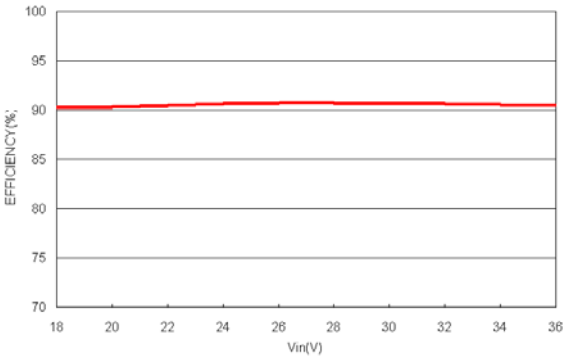
All test conditions are at 25°C. The figures are identical for TEN 30-2412



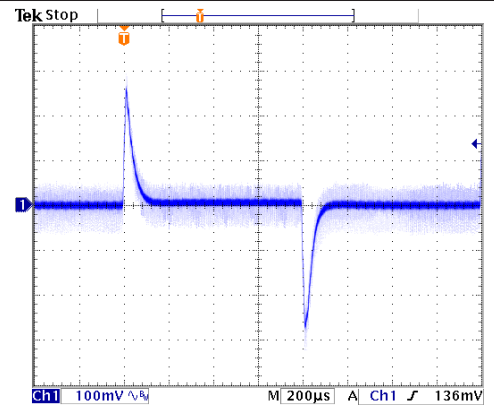
Efficiency Versus Output Current



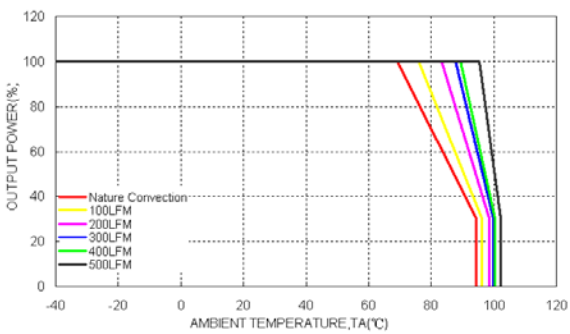
**Typical Output Ripple and Noise.
 $V_{in} = V_{in}(nom)$, Full Load**



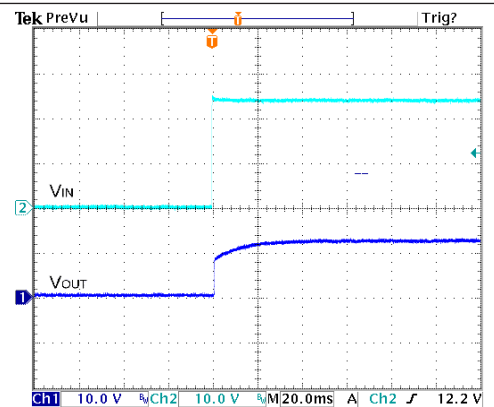
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in} = V_{in}(nom)$**



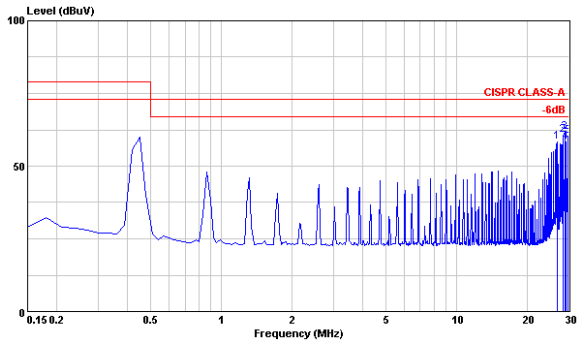
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$**



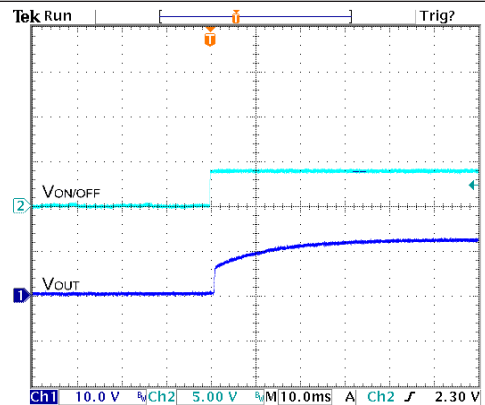
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in} = V_{in}(nom)$, Full Load**

Characteristic Curves

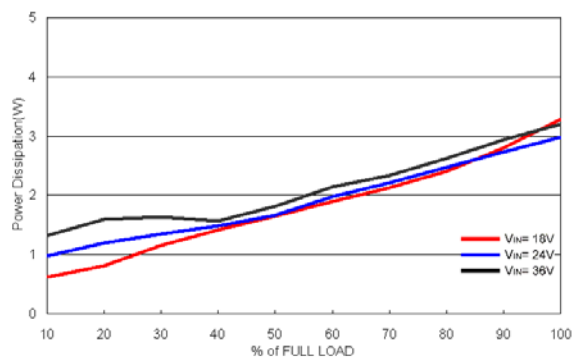
All test conditions are at 25°C. The figures are identical for TEN 30-2412 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



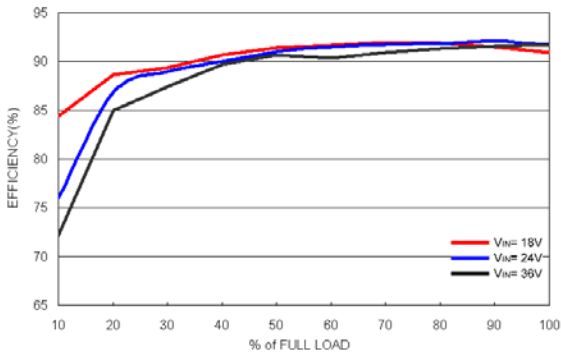
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



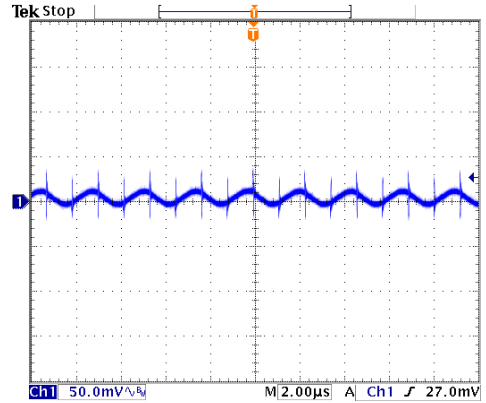
Power Dissipation Versus Output Current

Characteristic Curves

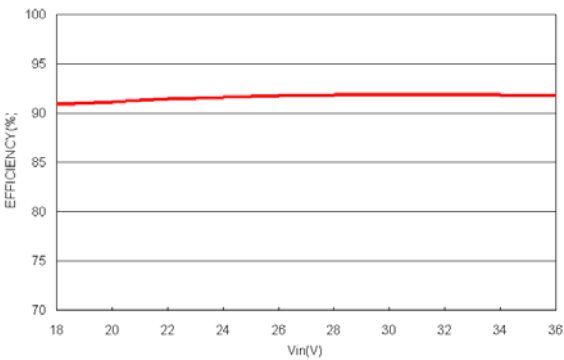
All test conditions are at 25°C. The figures are identical for TEN 30-2413



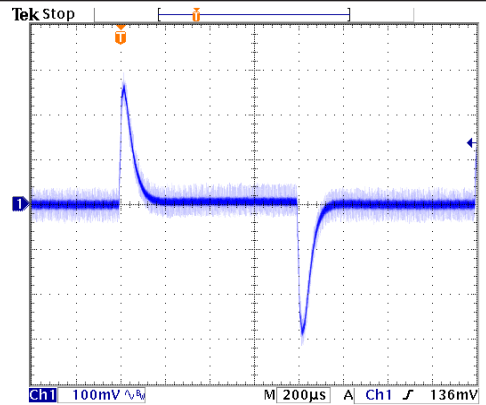
Efficiency Versus Output Current



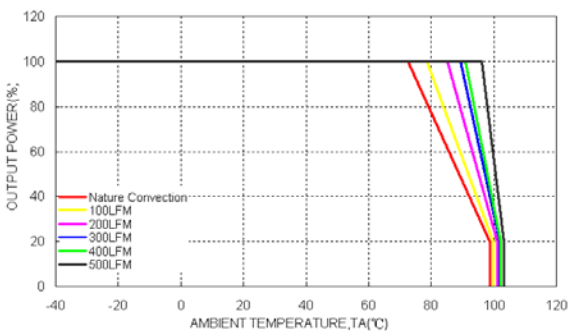
**Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load**



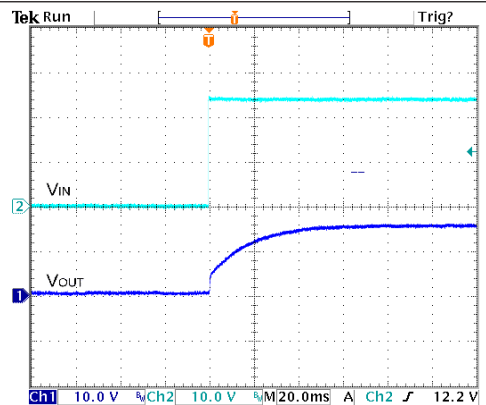
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$**



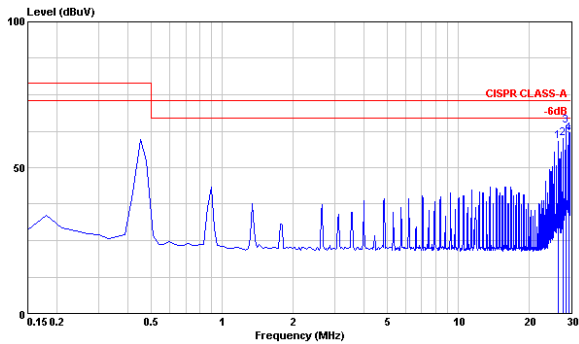
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$**



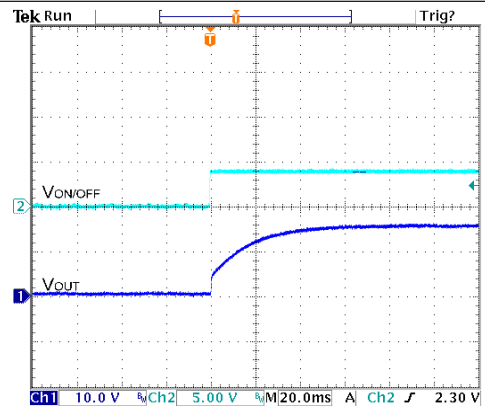
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load**

Characteristic Curves

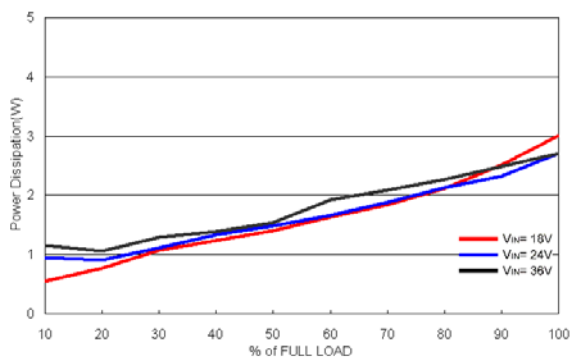
All test conditions are at 25°C. The figures are identical for TEN 30-2413 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



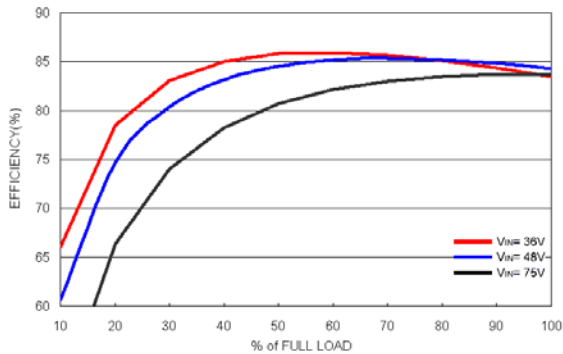
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



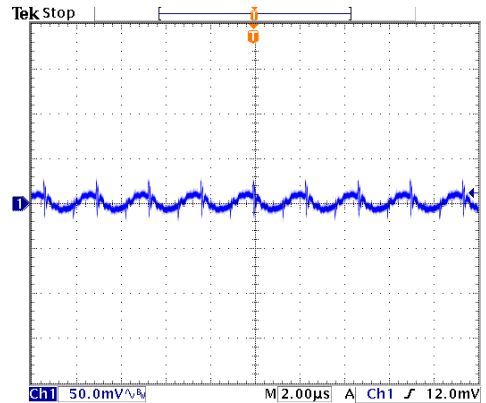
Power Dissipation Versus Output Current

Characteristic Curves

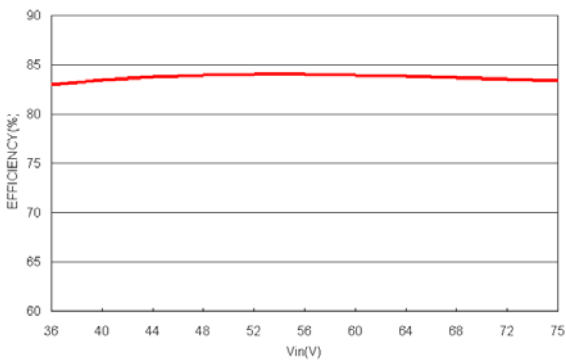
All test conditions are at 25C. The figures are identical for TEN 30-4809



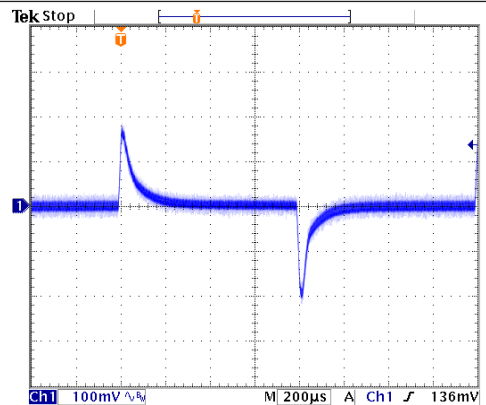
Efficiency Versus Output Current



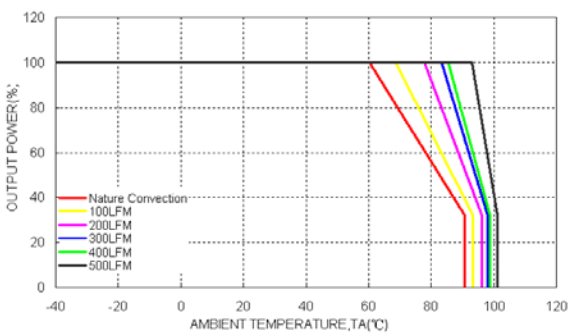
**Typical Output Ripple and Noise.
 $V_{in} = V_{in}(nom)$, Full Load**



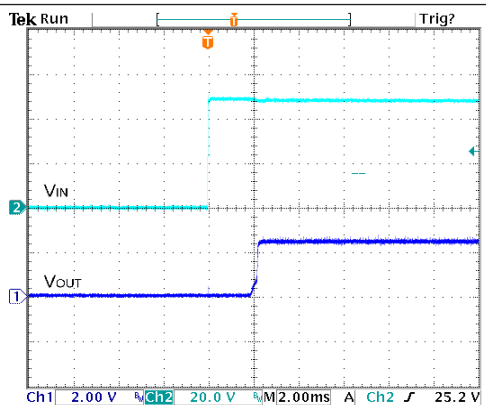
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in} = V_{in}(nom)$**



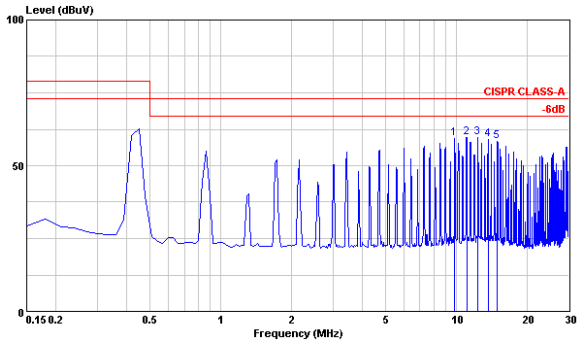
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$**



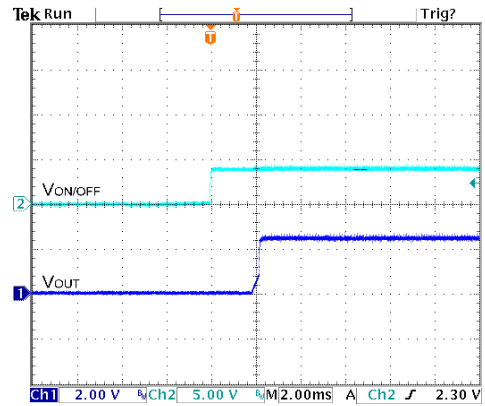
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in} = V_{in}(nom)$, Full Load**

Characteristic Curves

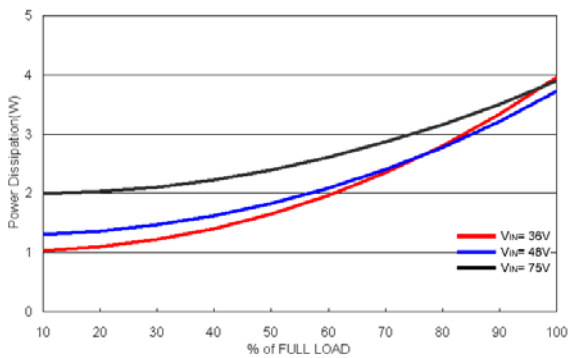
All test conditions are at 25°C. The figures are identical for TEN 30-4809 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



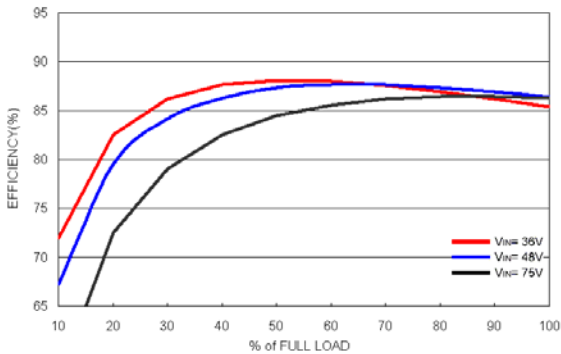
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



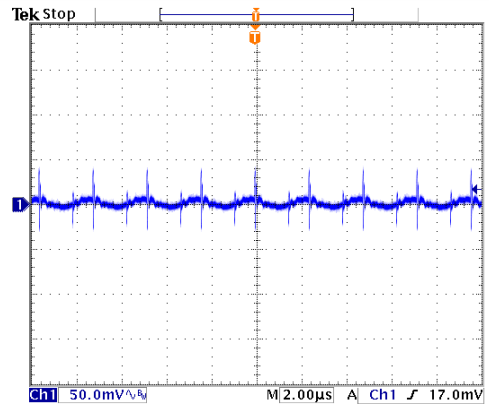
Power Dissipation Versus Output Current

Characteristic Curves

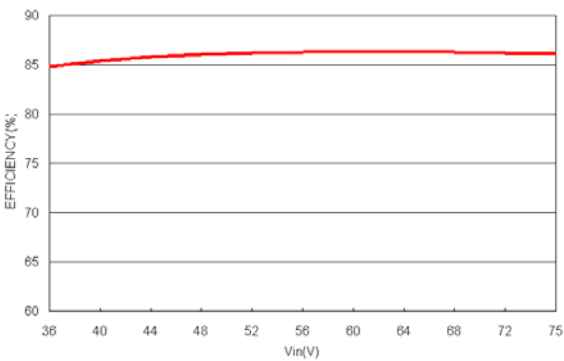
All test conditions are at 25°C. The figures are identical for TEN 30-4810



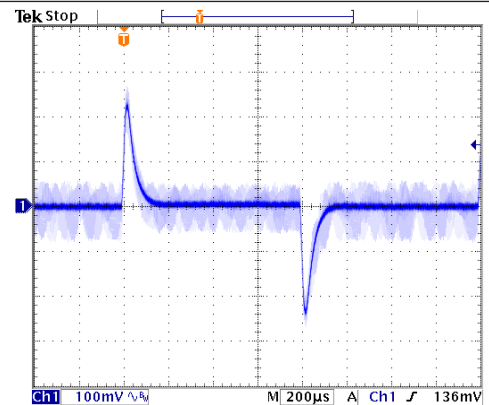
Efficiency Versus Output Current



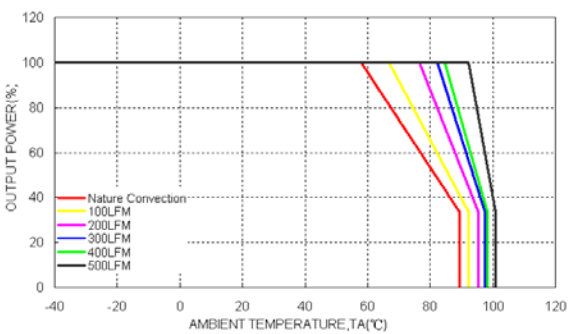
Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load



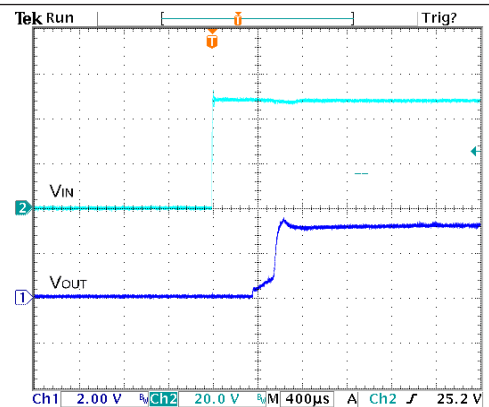
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$



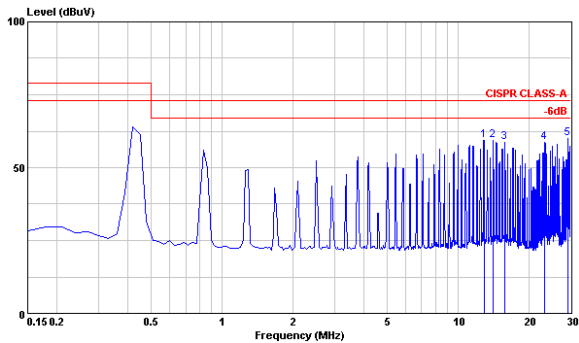
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$



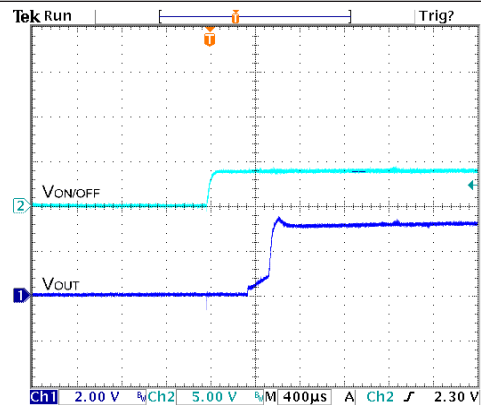
Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load

Characteristic Curves

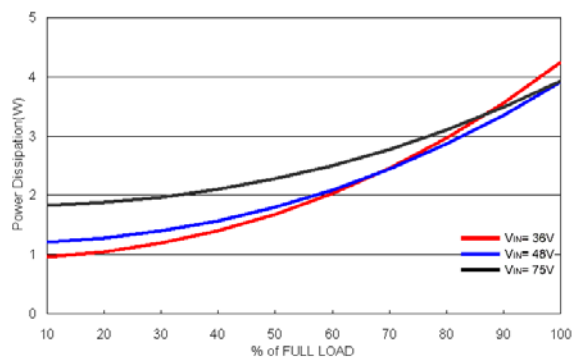
All test conditions are at 25°C. The figures are identical for TEN 30-4810 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



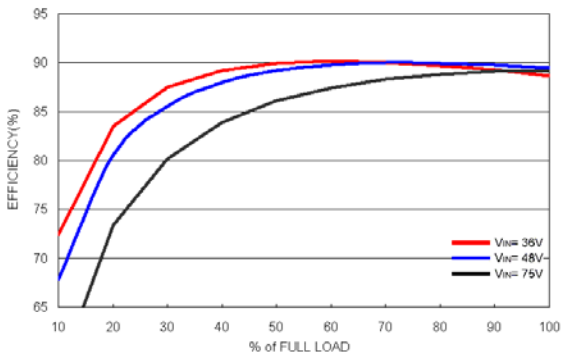
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



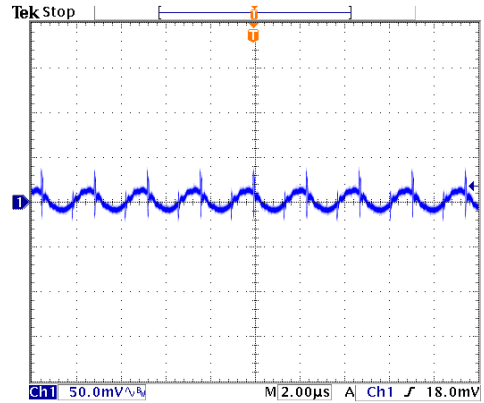
Power Dissipation Versus Output Current

Characteristic Curves

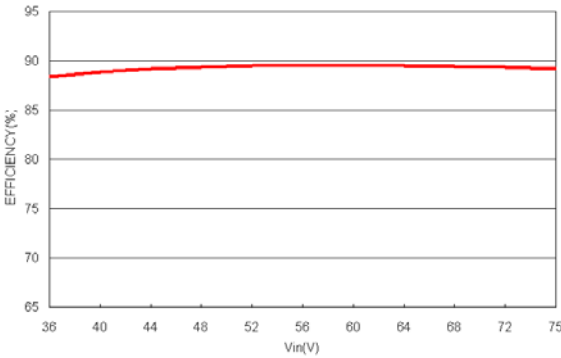
All test conditions are at 25°C. The figures are identical for TEN 30-4811



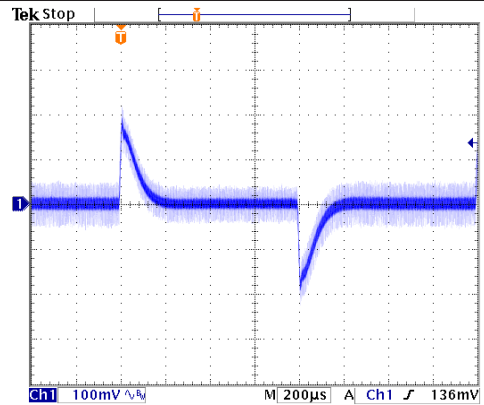
Efficiency Versus Output Current



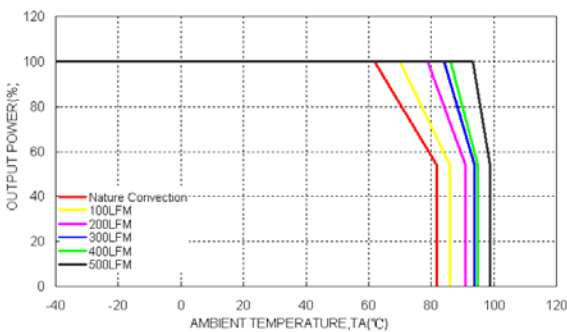
**Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load**



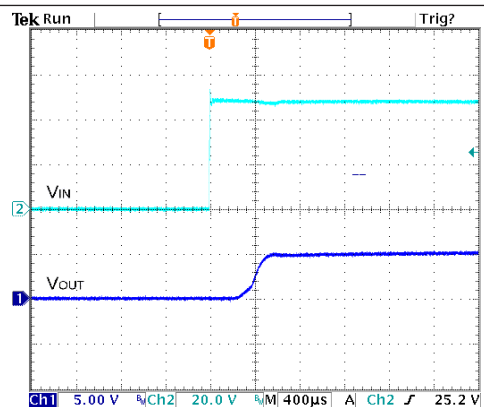
Efficiency Versus Input Voltage. Full Load



**Transient Response to Dynamic Load Change from
100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$**



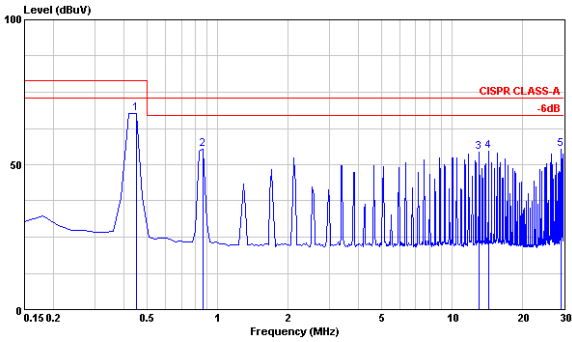
**Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$**



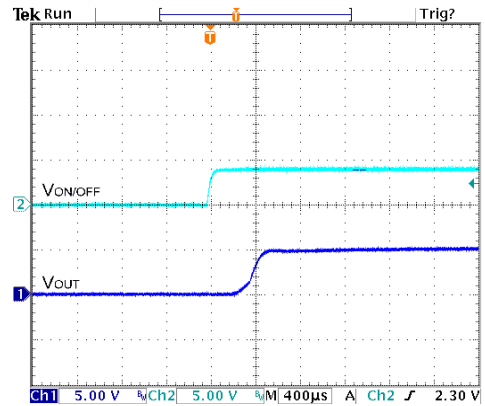
**Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load**

Characteristic Curves

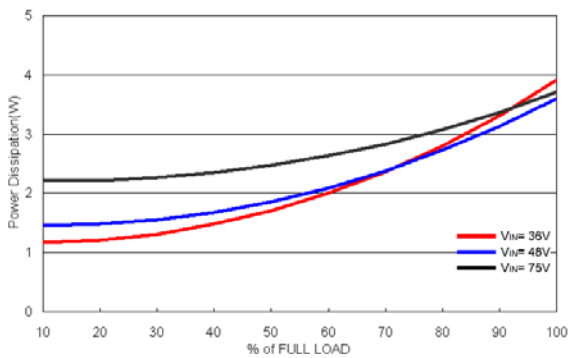
All test conditions are at 25C. The figures are identical for TEN 30-4811(Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



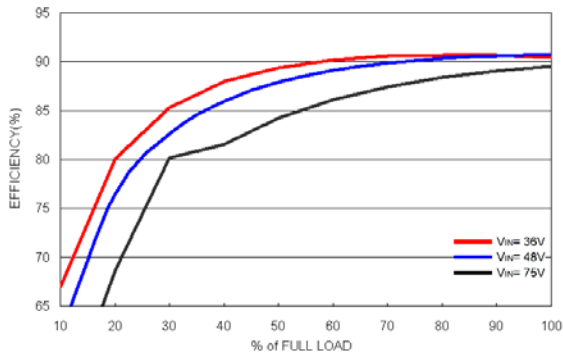
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



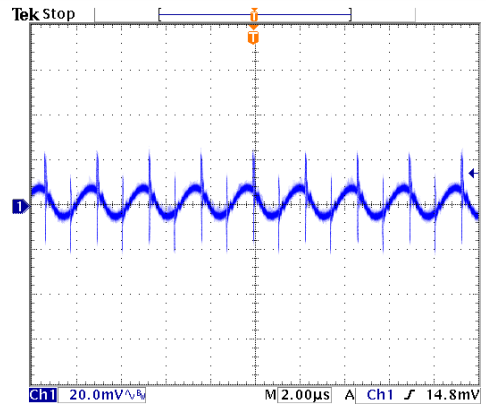
Power Dissipation Versus Output Current

Characteristic Curves

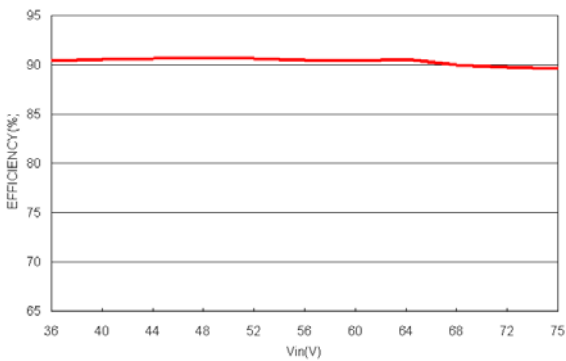
All test conditions are at 25°C. The figures are identical for TEN 30-4812



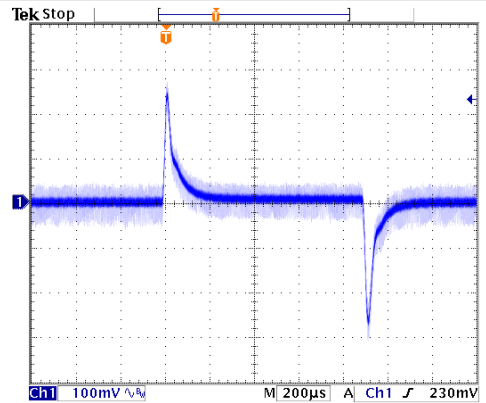
Efficiency Versus Output Current



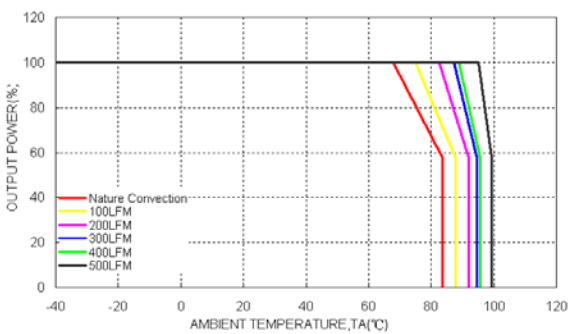
Typical Output Ripple and Noise.
 $V_{in}=V_{in}(nom)$, Full Load



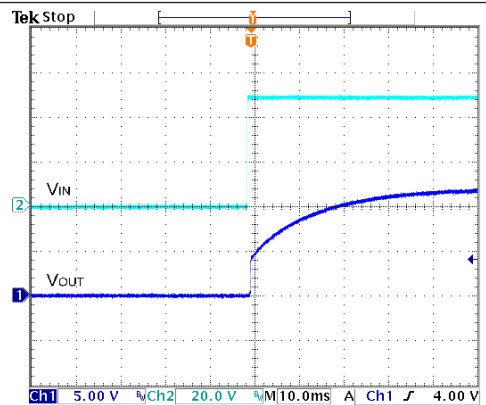
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; $V_{in}=V_{in}(nom)$



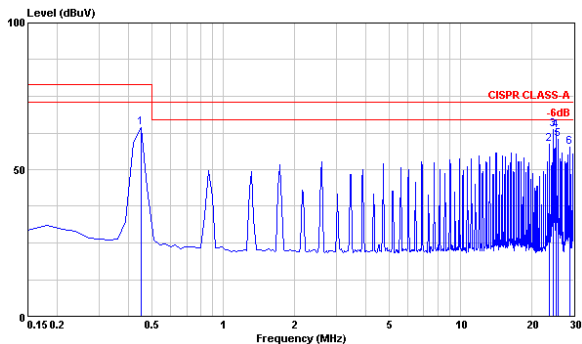
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$



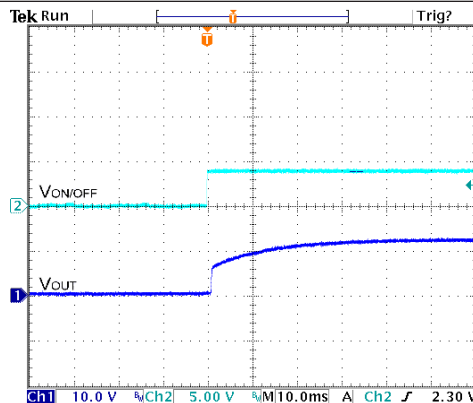
Typical Input Start-Up and Output Rise Characteristic
 $V_{in}=V_{in}(nom)$, Full Load

Characteristic Curves

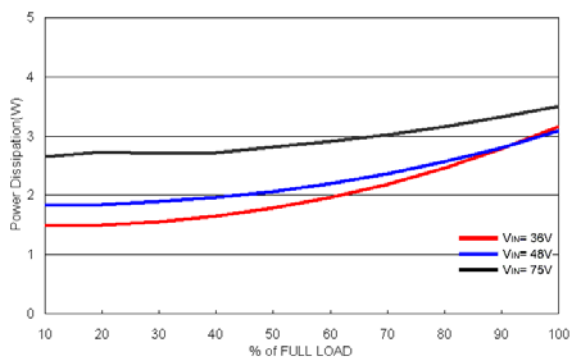
All test conditions are at 25°C. The figures are identical for TEN 30-4812 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



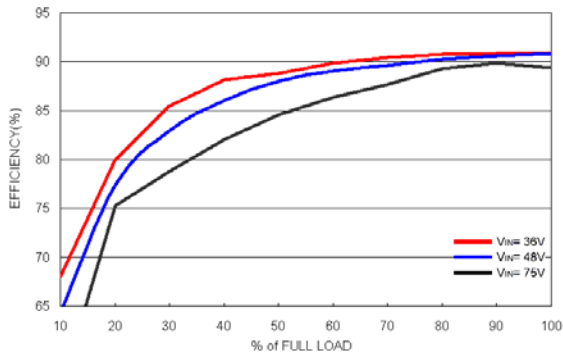
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



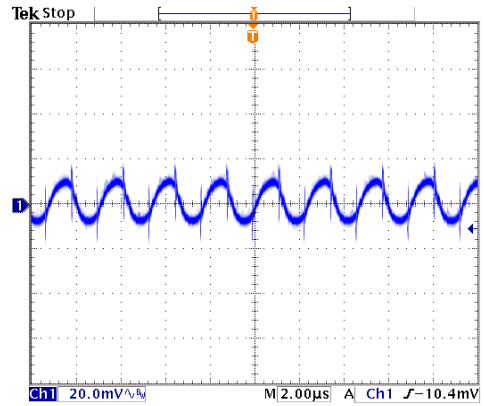
Power Dissipation Versus Output Current

Characteristic Curves

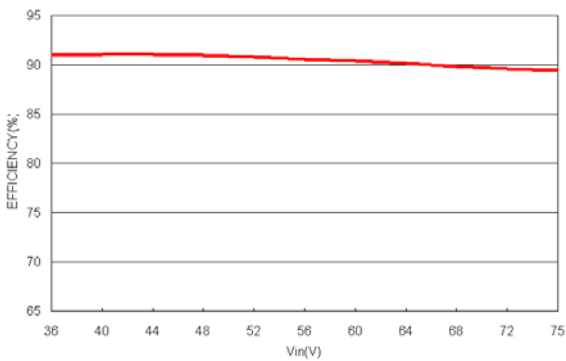
All test conditions are at 25°C. The figures are identical for TEN 30-4813



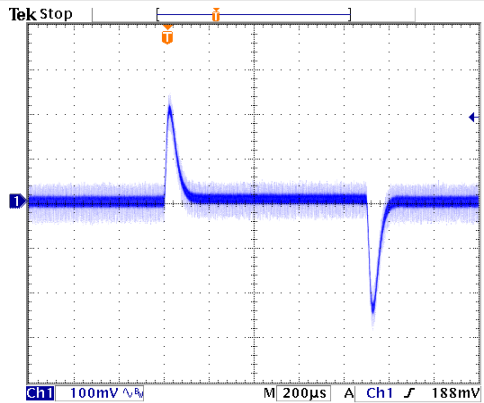
Efficiency Versus Output Current



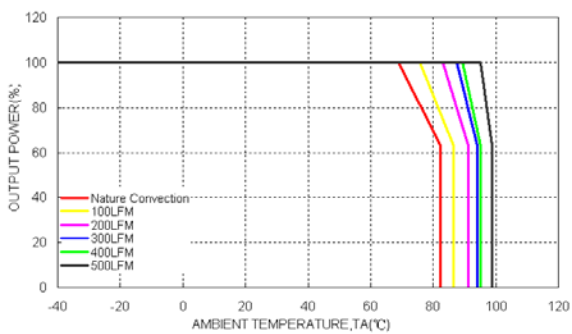
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



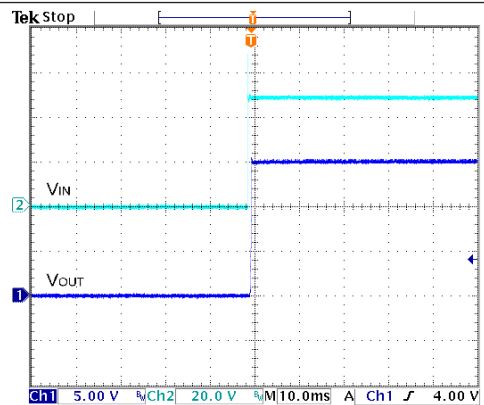
Efficiency Versus Input Voltage. Full Load



Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



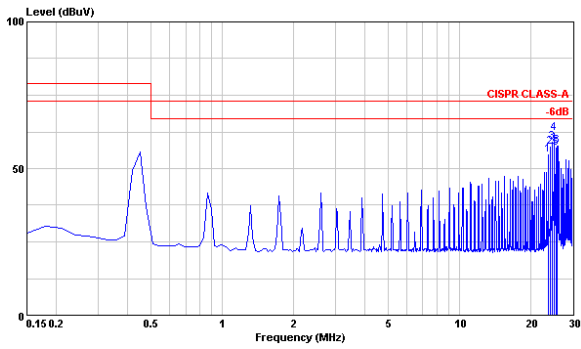
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)



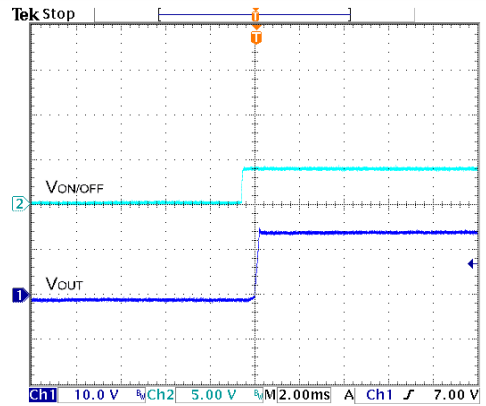
Typical Input Start-Up and Output Rise Characteristic
Vin=Vin(nom), Full Load

Characteristic Curves

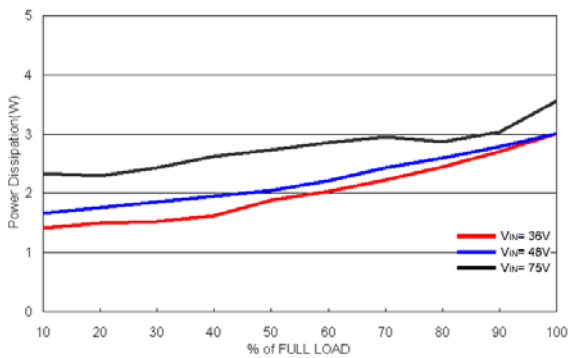
All test conditions are at 25°C. The figures are identical for TEN 30-4813 (Continued)



Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load



Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



Power Dissipation Versus Output Current