Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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Contact us

PXD10-Single Output DC/DC Converter

9 to 18 Vdc, 18 to 36 Vdc and 36 to 75 Vdc input, 3.3 to 15 Vdc Single Output, 10W

TDK·Lambda

c**RU**us /VDE CE **CB Report**

Features

- Single output current up to 2A
- 10 watts maximum output power
- 2:1 wide input voltage range of 9-18, 18-36 and 36-75VDC
- Six-sided continuous shield
- High efficiency up to 87%
- Low profile:2.00×1.00×0.40 inches (50.8×25.4×10.2 mm)
- Fixed switching frequency
- RoHS   compliant
- No minimum load
- Input to output isolation: 1600Vdc min
- Operating case temperature range: 100°C max
- Output over-voltage protection
- Over-current protection, auto-recovery
- Output short circuit protection

Options

- Heat sinks available for extended operation
- Remote on/off and logic configuration

Applications

- Distributed power architectures
- Computer equipment
- Communications equipment

General Description

The PXD10 single output series offers 10 watts of output power in a 2 X 1 X 0.4 inch package. It has a 2:1 wide input voltage of 9-18VDC, 18-36VDC and 36-75VDC,1600VDC isolation, short circuit, over voltage protection, and six sided shielding. All models are particularly suited for telecommunications, industrial, mobile telecom and test equipment applications.

Table of Contents

Absolute Maximum Rating

Parameter	Model	Min	Max	Unit
Input Voltage				
Continuous	12Sxx		18	
	24Sxx		36	
	48Sxx		75	V_{DC}
Transient (100ms)	12Sxx		36	
	24Sxx		50	
	48Sxx		100	
Operating Ambient Temperature				
Standard (with derating)		-25	85	°C
Operating Case Temperature			100	°C
Storage Temperature	All	-55	105	°C

Output Specification

Parameter	Model	Min	Typ	Max	Unit
Output Voltage Range	xxS3P3	3.267	3.3	3.333	
(Vin = Vin(nom); Full Load ; T_A=25 °C)	xxS05	4.95	5	5.05	V_{DC}
	xxS12	11.88	12	12.12	
	xxS15	14.85	15	15.15	
Output Regulation					
Line (Vin(min) to Vin(max) at Full Load)	All			±0.2	%
Load (0% to 100% of Full Load)				±0.5	
Output Ripple & Noise	All			50	mV_{P-P}
Peak -to- Peak (20MHz bandwidth)					
Temperature Coefficient	All			±0.02	%/°C
Output Voltage Overshoot	All		0	5	% V_{OUT}
(Vin(min) to Vin(max); Full Load ; T_A=25°C)					
Dynamic Load Response					
(Vin = Vin(nom); T_A=25°C)					
Load step change from					
75% to 100% or 100 to 75% of Full Load					
Peak Deviation	All		200		mV
Setting Time (V_{OUT} - 10% peak deviation)	All		250		µS
Output Current	xxS3P3	0		2000	
	xxS05	0		2000	mA
	xxS12	0		830	
	xxS15	0		670	
Output Over Voltage Protection	xxS3P3		3.9		
(Zener diode clamp)	xxS05		6.2		V_{DC}
	xxS12		15		
	xxS15		18		
Output Over Current Protection	All		130	150	% FL.
Output Short Circuit Protection	All	Hiccup, automatic recovery			

Input Specification					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Operating Input Voltage	12Sxx	9	12	18	
	24Sxx	18	24	36	Vdc
	48Sxx	36	48	75	
Input Current (Maximum value at Vin = Vin(nom); Full Load)	12S3P3			724	mA
	12S05			1082	
	12S12			1037	
	12S15			1046	
	24S3P3			362	
	24S05			534	
	24S12			519	
	24S15			523	
	48S3P3			181	
	48S05			260	
	48S12			253	
	48S15			252	
Input Standby current (Typical value at Vin = Vin(nom); No Load)	12S3P3		17		mA
	12S05		21		
	12S12		38		
	12S15		36		
	24S3P3		15		
	24S05		22		
	24S12		18		
	24S15		36		
	48S3P3		11		
	48S05		14		
	48S12		14		
	48S15		10		
Input reflected ripple current (5 to 20MHz, 12µH source impedance)	All		30		mA$_{P-P}$

Start Up Time
  (Vin = Vin(nom) and constant resistive load)
    Power up
	All		20		mS

Remote On/Off Control (Option) (The On/Off pin voltage is referenced to -V$_{IN}$) Positive logic On/Off pin High Voltage (Remote On) On/Off pin Low Voltage (Remote Off) Negative logic On/Off pin High Voltage (Remote On) On/Off pin Low Voltage (Remote Off)	 Suffix –P Suffix –P Suffix –N Suffix –N	 3.5 0 0 3.5		 12 1.2 1.2 12	V$_{DC}$
Remote Off input current	All		20		mA
Input current of Remote control pin	All	-0.5		1	mA

| General Specification					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Efficiency	12S3P3		80		
(Vin = Vin(nom); Full Load ; T_A=25℃)	12S05		81		
	12S12		84		
	12S15		84		
	24S3P3		80		
	24S05		82		%
	24S12		84		
	24S15		84		
	48S3P3		80		
	48S05		84		
	48S12		86		
	48S15		87		
Isolation voltage					
Input to Output	All	1600			V_{DC}
Input to Case, Output to Case		1600			
Isolation resistance	All	1			GΩ
Isolation capacitance	All			300	pF
Switching Frequency	All		300		kHz
Weight	All		27.0		g
MTBF					
Bellcore TR-NWT-000332, T_C=40℃	All		1.976×10^6		hours
MIL-HDBK-217F			1.416×10^6		

Characteristic Curves

All test conditions are at 25°C.The figures are for PXD10-12S3P3
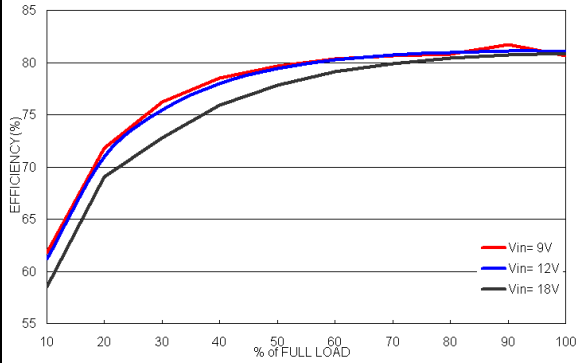

**Efficiency versus Output Current**
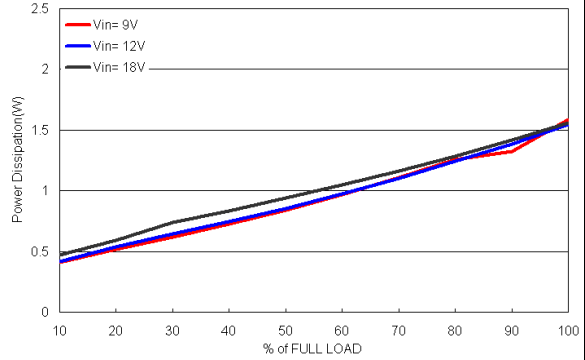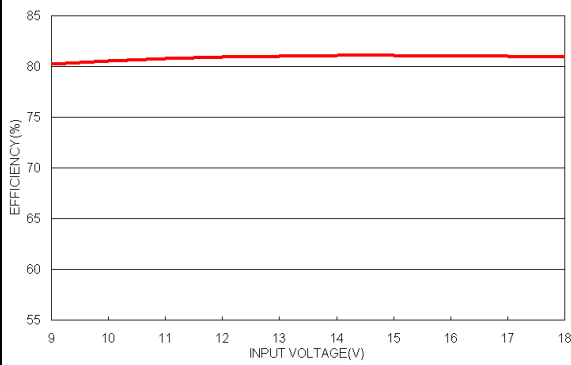
Power Dissipation versus Output Current

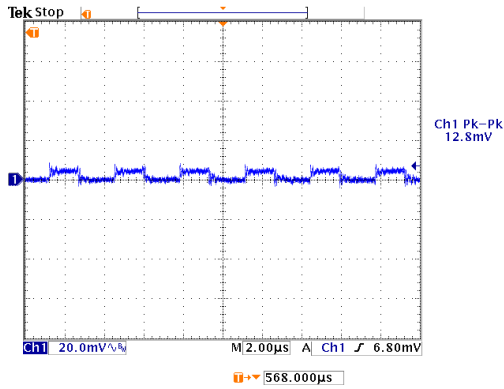**Efficiency versus Input Voltage. Full Load**
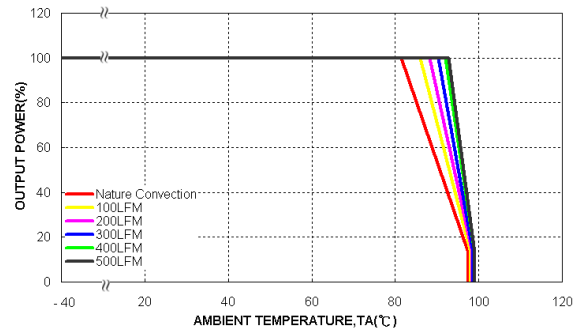
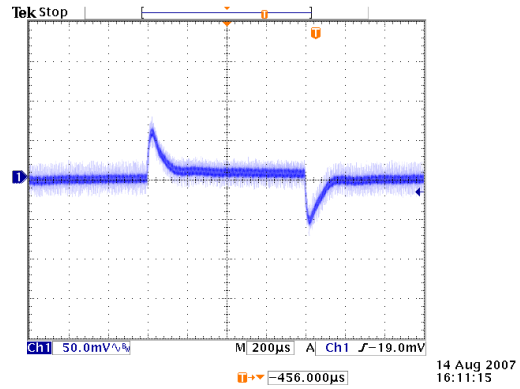**Derating Output Current versus Ambient Temperature and Airflow**
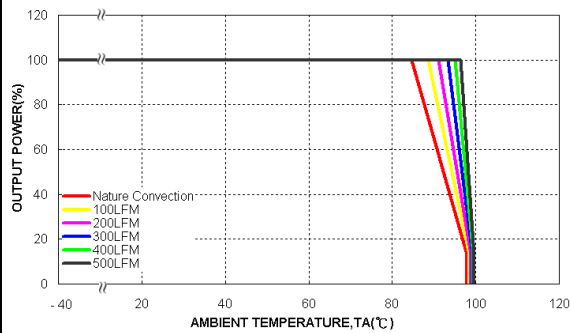
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

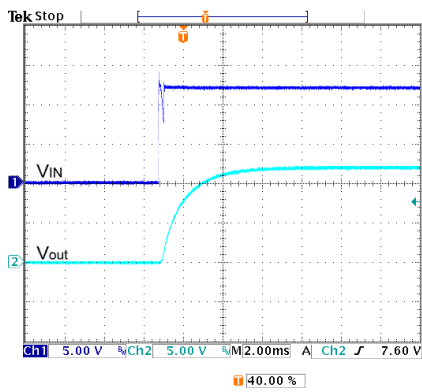**and Airflow ,Vin = Vin(nom)**

Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are for PXD10-12S3P3

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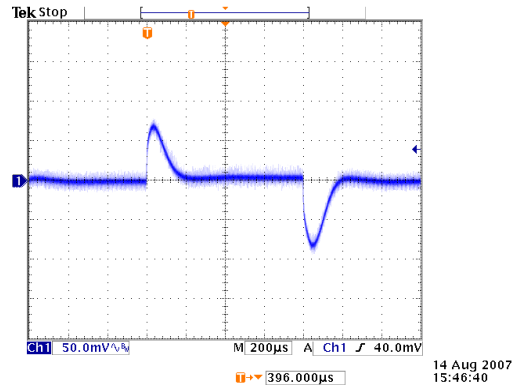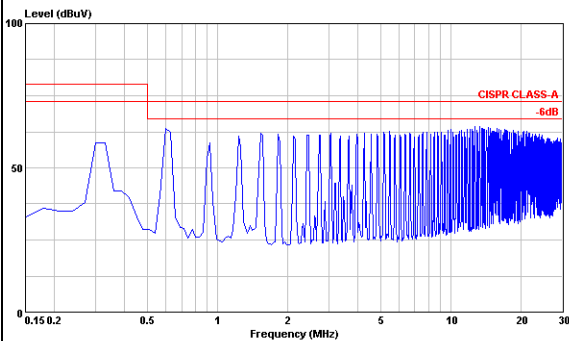
Vin = Vin(nom); Full Load

Transient Response to Dynamic Load Change from

**100% to 75% to 100% of Full Load ; Vin = Vin(nom)**

Typical Input Start-Up and Output Rise Characteristic

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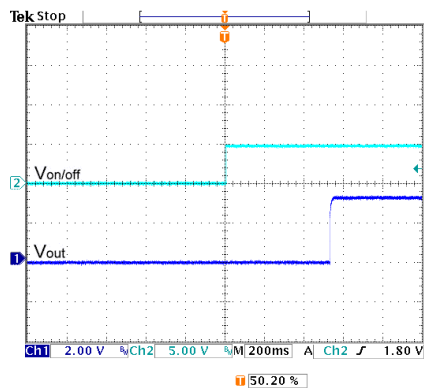
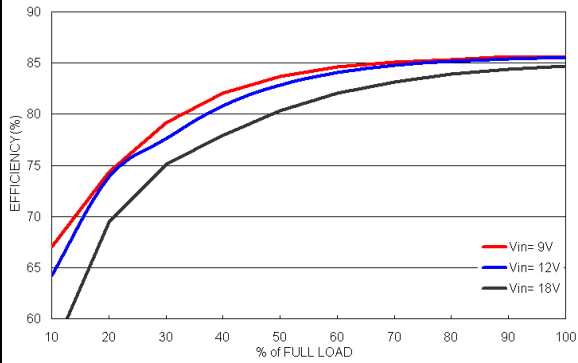**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

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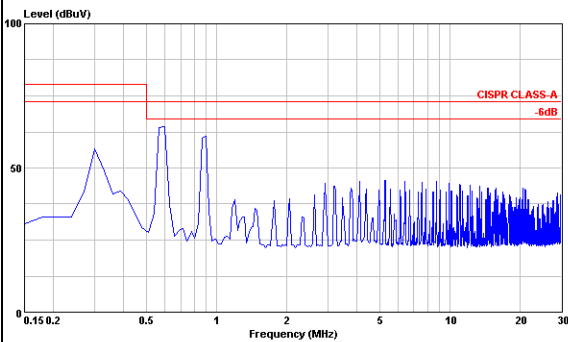
Conduction Emission of EN55022 Class A

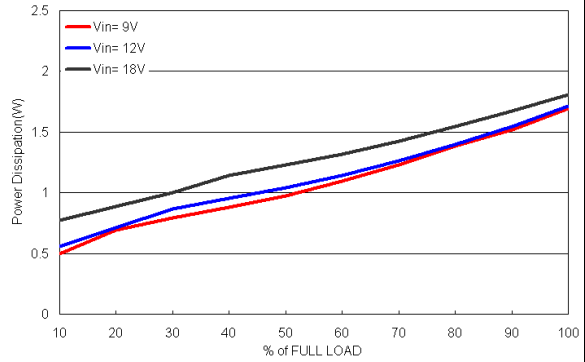**Vin = Vin(nom)   ; Full Load**
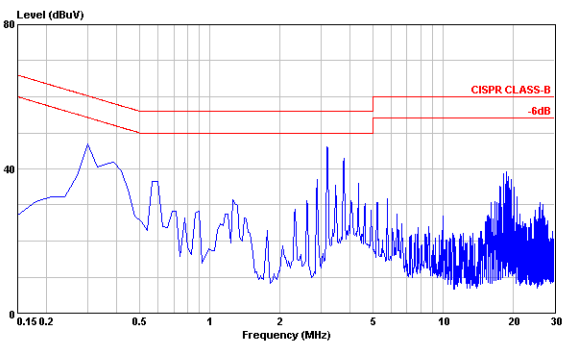
Conduction Emission of EN55022 Class B

Vin = Vin(nom) ; Full Load

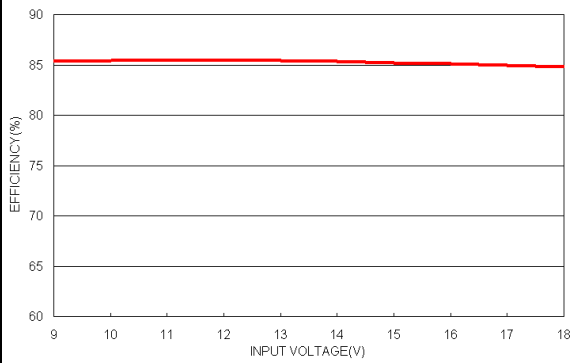## Characteristic Curves (Continued)

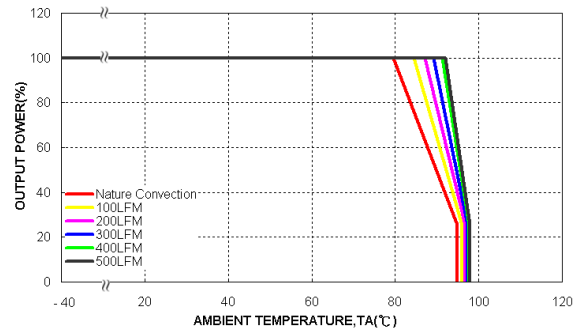All test conditions are at 25°C.The figures are for PXD10-12S05



Efficiency versus Output Current
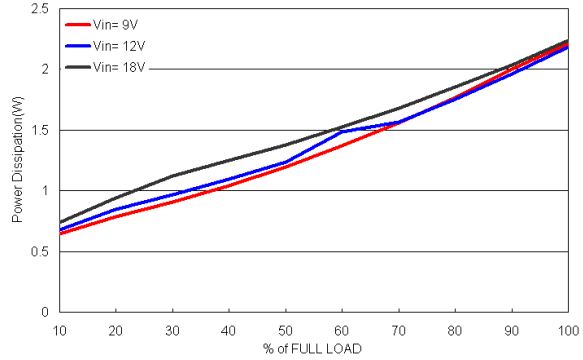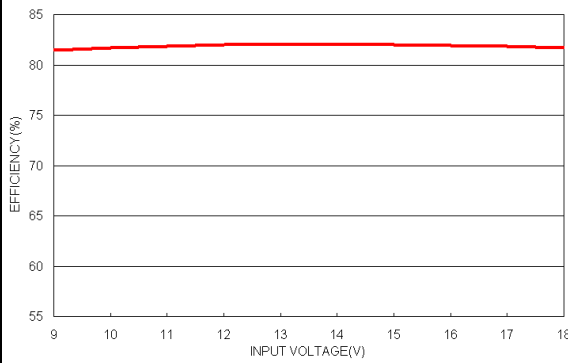
Power Dissipation versus Output Current

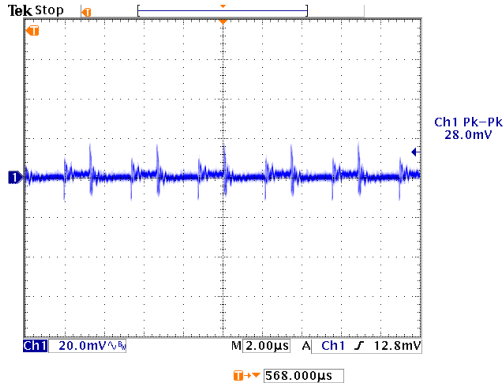**Efficiency versus Input Voltage. Full Load**
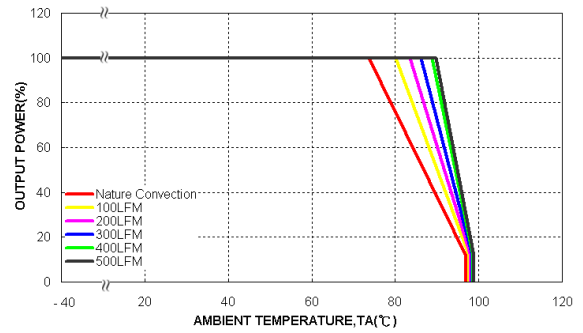
Derating Output Current versus Ambient Temperature and Airflow
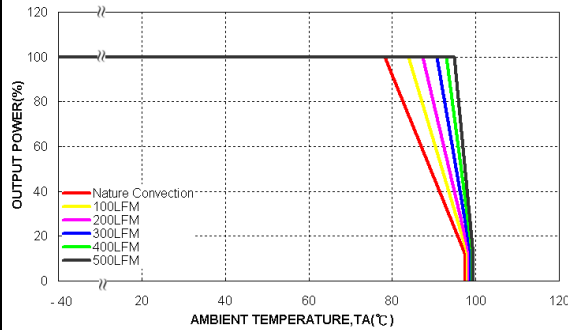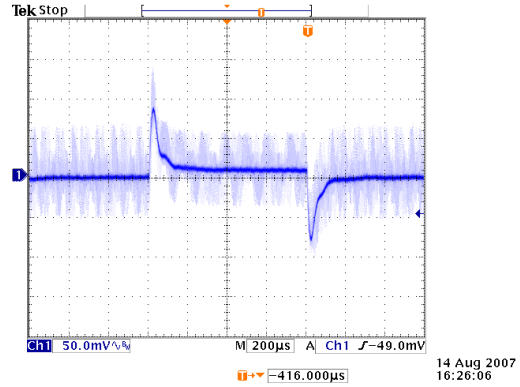
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

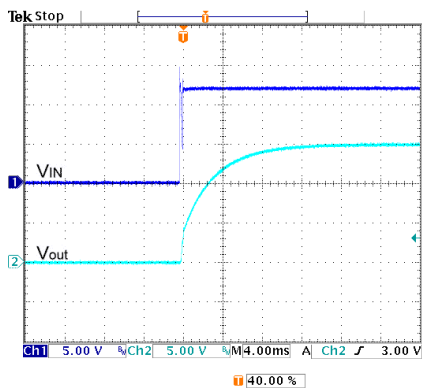## Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are for PXD10-12S05

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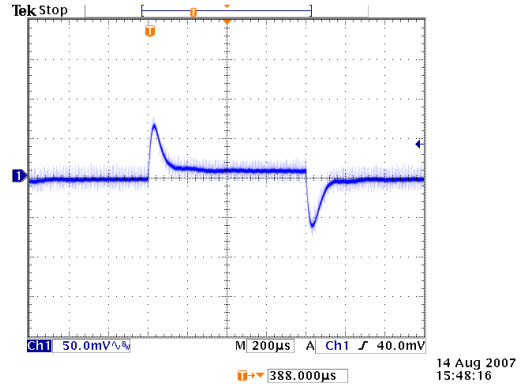
Vin = Vin(nom); Full Load

Transient Response to Dynamic Load Change from

**100% to 75% to 100% of Full Load ; Vin = Vin(nom)**

Typical Input Start-Up and Output Rise Characteristic

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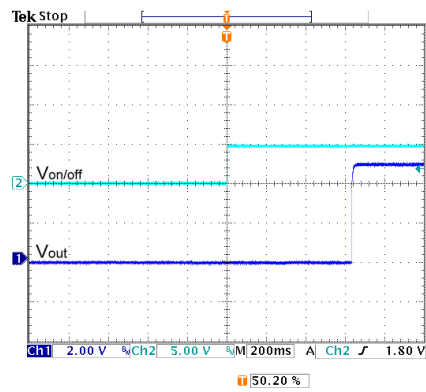
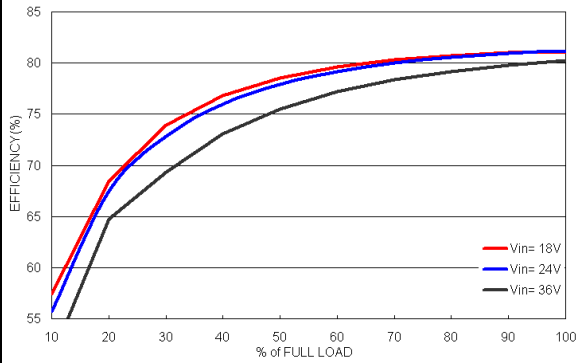**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

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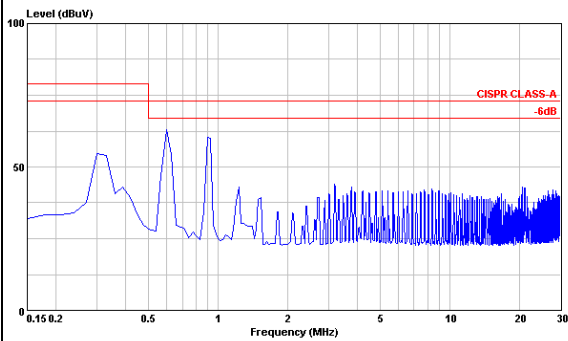
Conduction Emission of EN55022 Class A

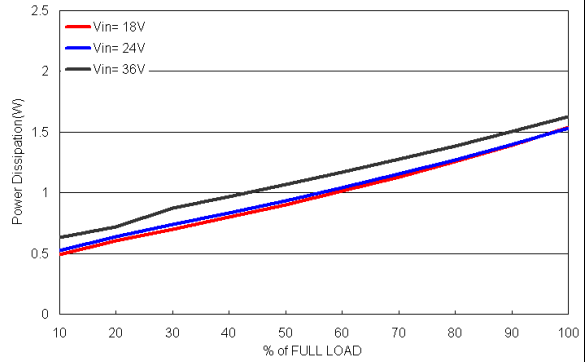**Vin = Vin(nom)   ; Full Load**
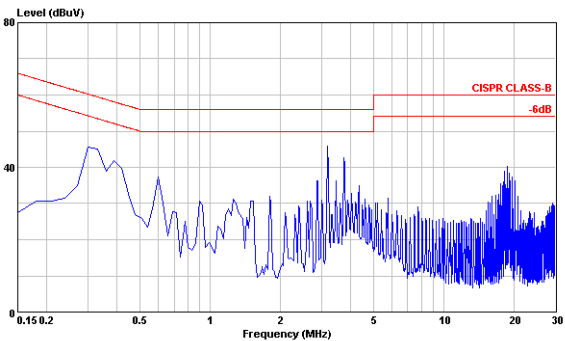
Conduction Emission of EN55022 Class B

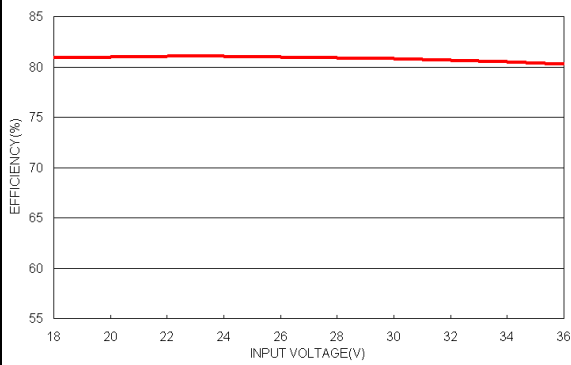**Vin = Vin(nom)   ; Full Load**

Characteristic Curves (Continued)

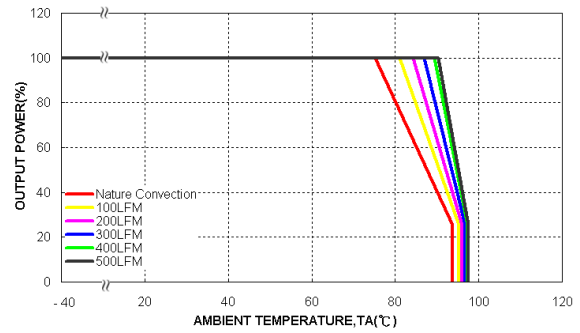All test conditions are at 25°C.The figures are for PXD10-12S12

**Efficiency versus Output Current**
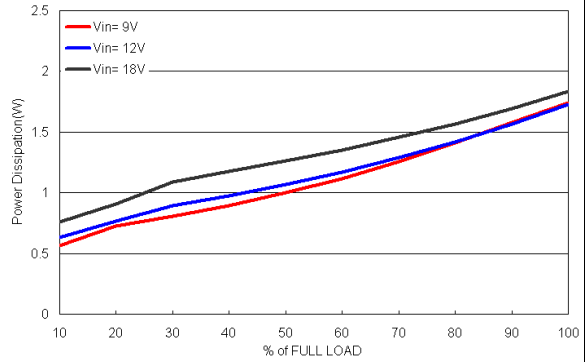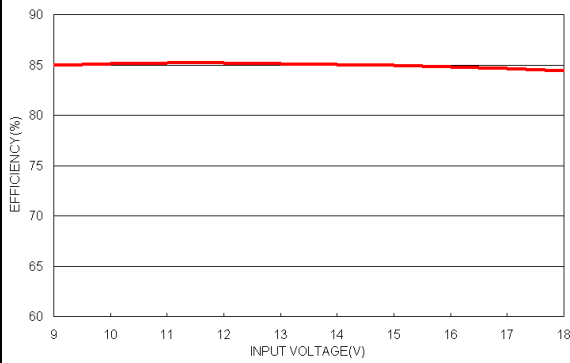
Power Dissipation versus Output Current

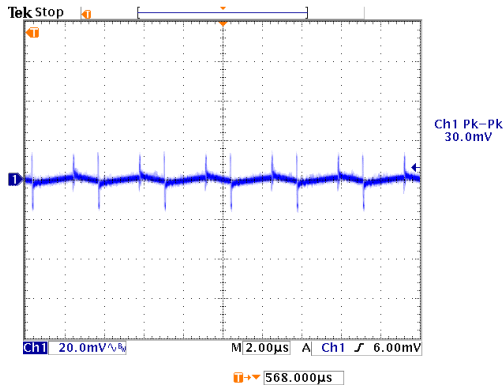**Efficiency versus Input Voltage. Full Load**
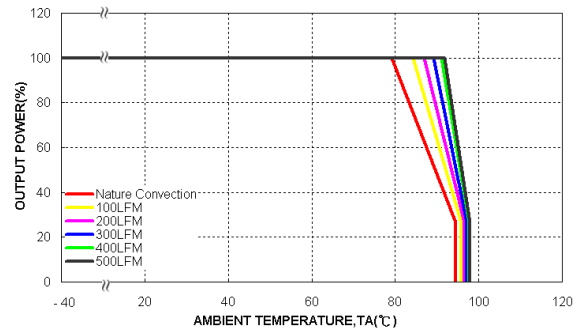
Derating Output Current versus Ambient Temperature and Airflow
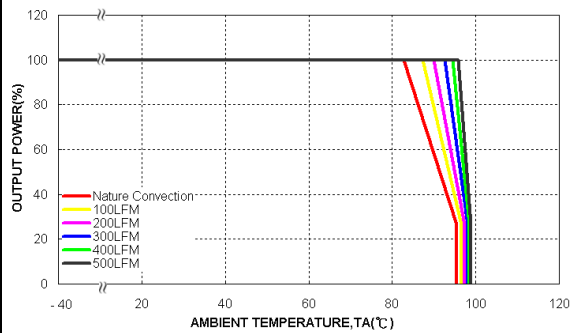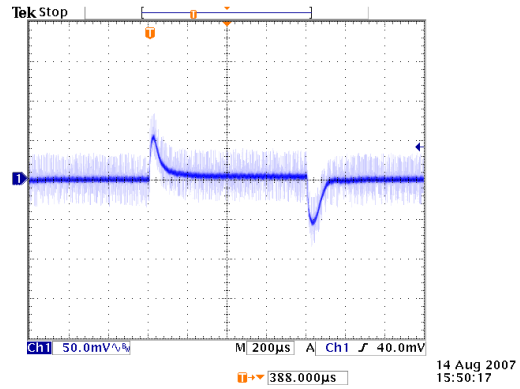
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)
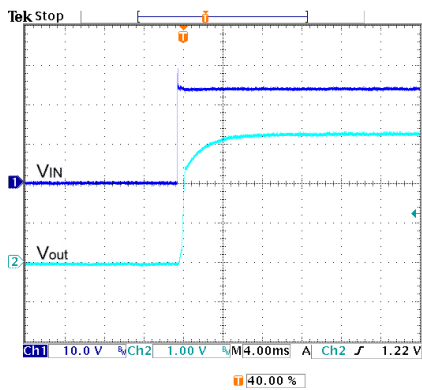
Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are for PXD10-12S12

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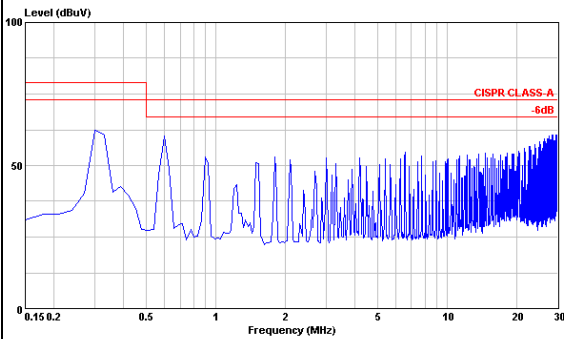
Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom))

**Typical Input Start-Up and Output Rise Characteristic**

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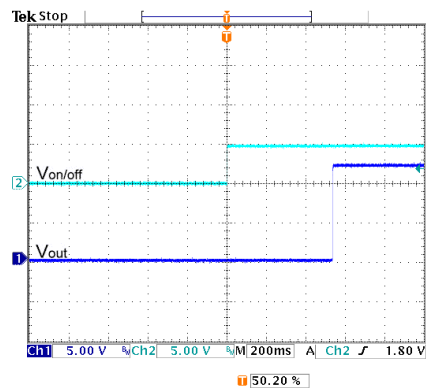
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
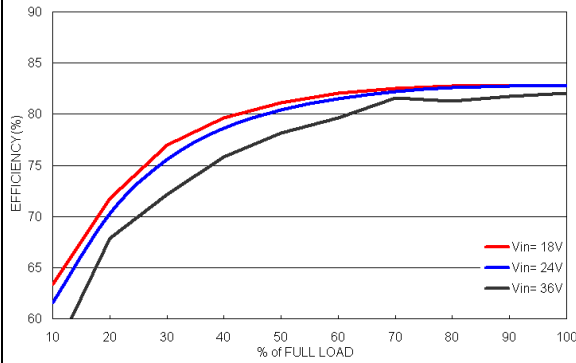
Vin = Vin(nom)   ; Full Load

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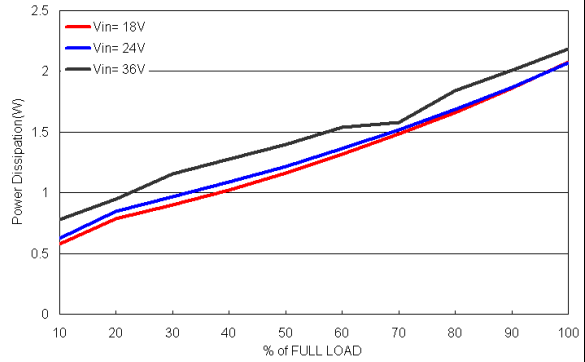
Vin = Vin(nom)   ; Full Load
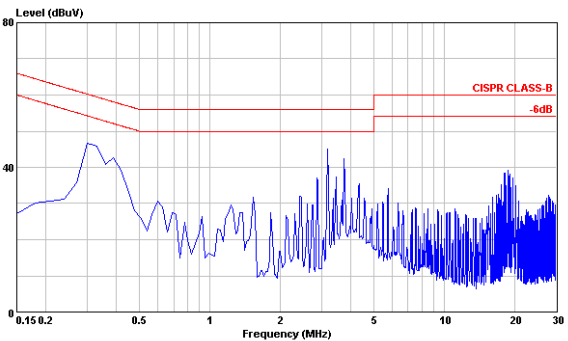
Conduction Emission of EN55022 Class B

Vin = Vin(nom)   ; Full Load
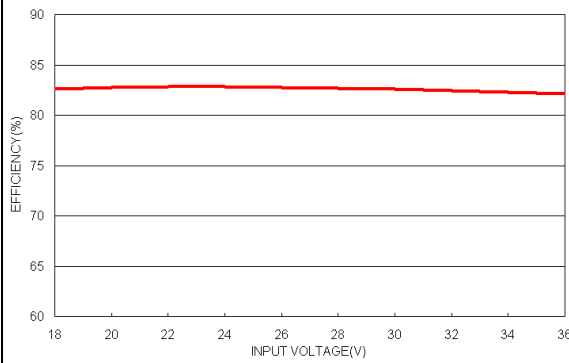
Characteristic Curves (Continued)

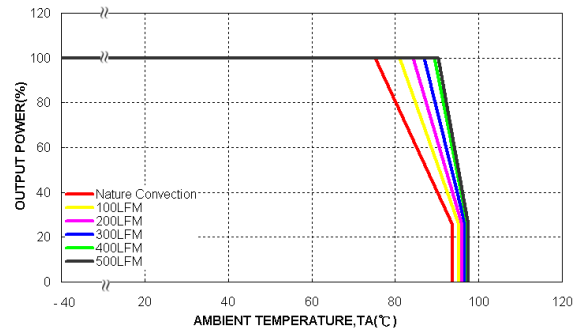All test conditions are at 25°C.The figures are for PXD10-12S15


Efficiency versus Output Current

Power Dissipation versus Output Current

Efficiency versus Input Voltage. Full Load
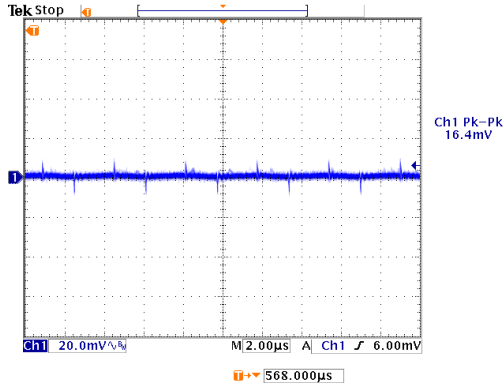

Derating Output Current versus Ambient Temperature and Airflow
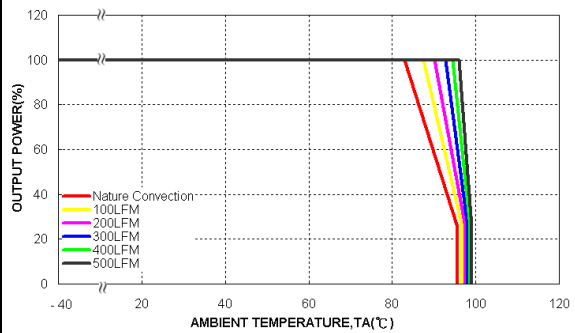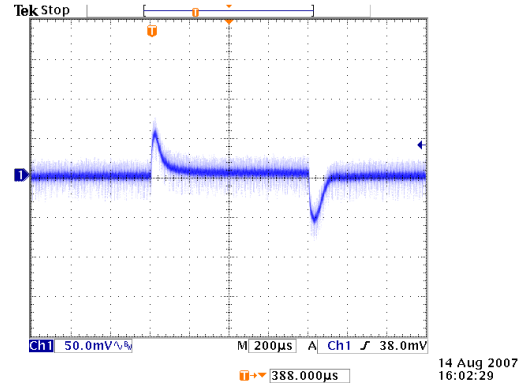
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are for PXD10-12S15
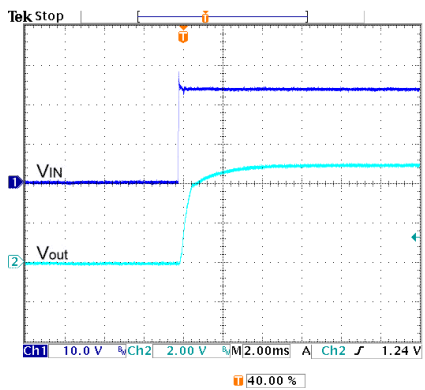

Typical Output Ripple and Noise.

Vin = Vin(nom) ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

Typical Input Start-Up and Output Rise Characteristic

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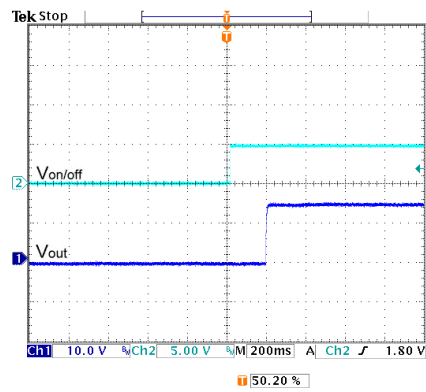
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic

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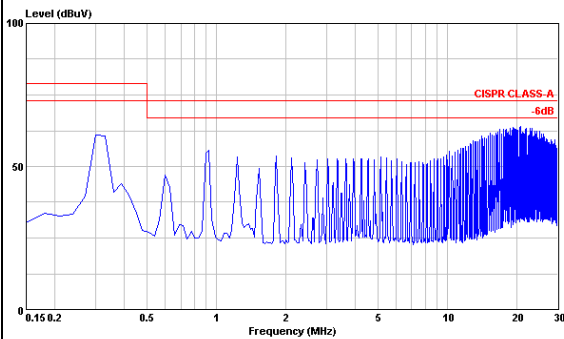
Conduction Emission of EN55022 Class A

Vin = Vin(nom) ; Full Load
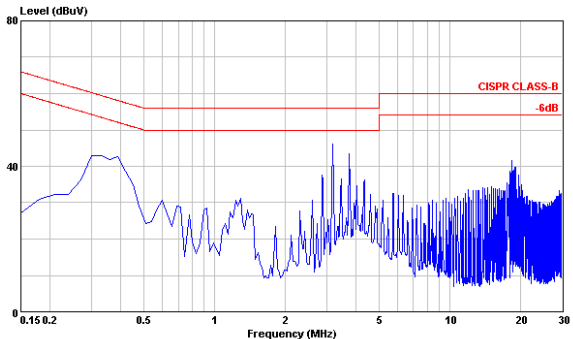
Conduction Emission of EN55022 Class B

Vin = Vin(nom) ; Full Load

Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are for PXD10-24S3P3

Efficiency versus Output Current

Power Dissipation versus Output Current

Efficiency versus Input Voltage. Full Load

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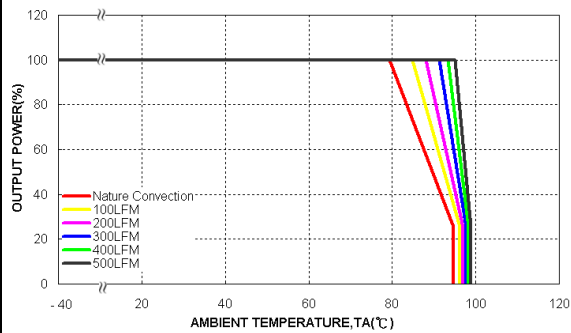
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are for PXD10-24S3P3

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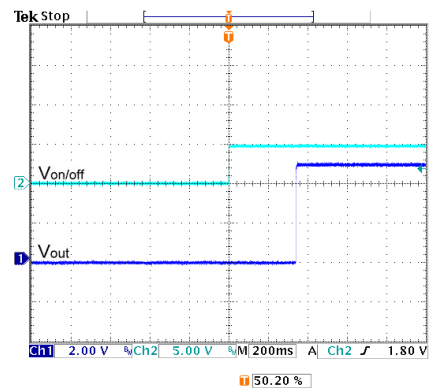
Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

Typical Input Start-Up and Output Rise Characteristic

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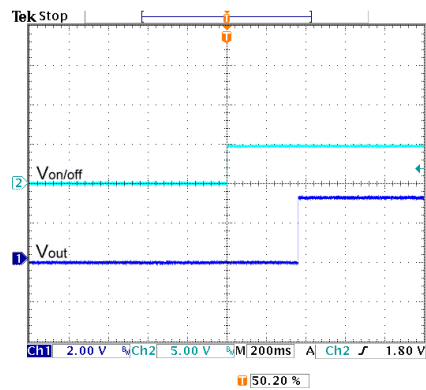
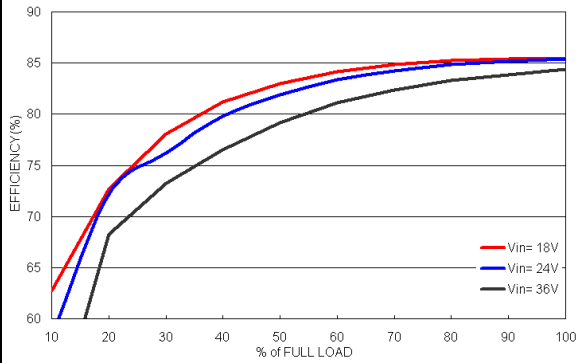**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

Vin = Vin(nom)   ; Full Load

Conduction Emission of EN55022 Class A

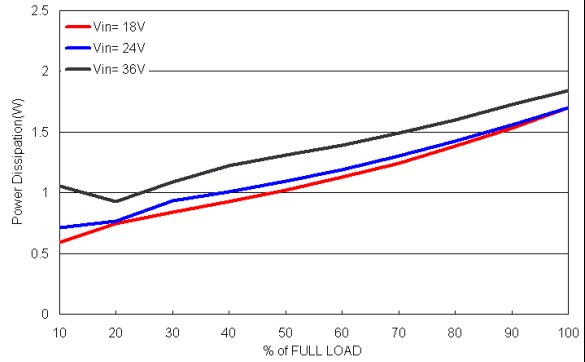**Vin = Vin(nom)   ; Full Load**
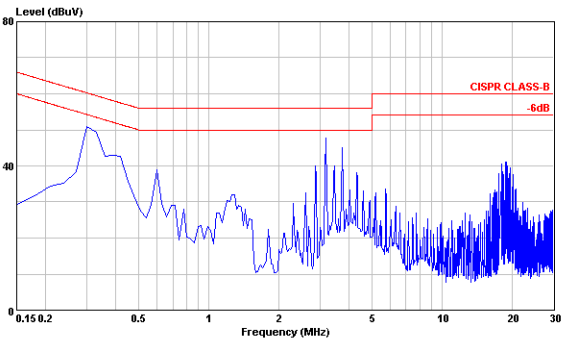
Conduction Emission of EN55022 Class B

Vin = Vin(nom)   ; Full Load

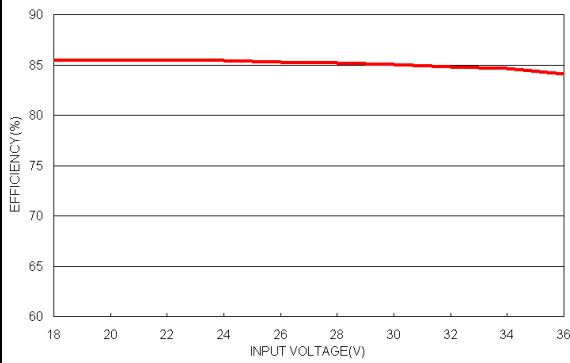## Characteristic Curves (Continued)
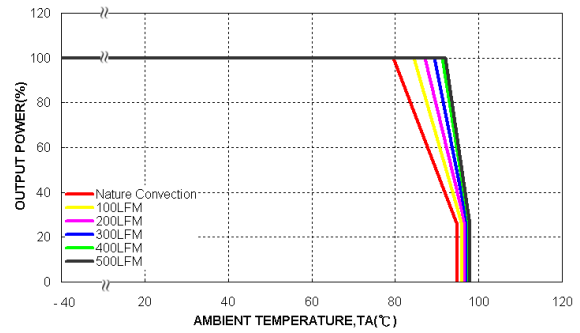
All test conditions are at 25°C.The figures are for PXD10-24S05


Efficiency versus Output Current

Power Dissipation versus Output Current

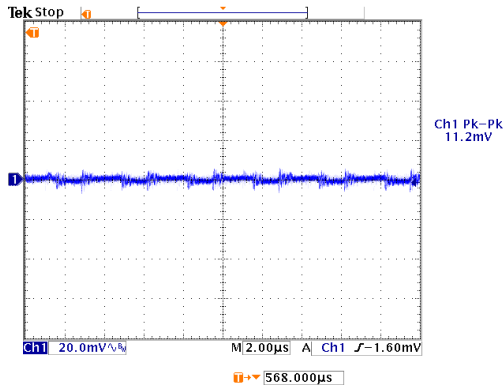**Efficiency versus Input Voltage. Full Load**

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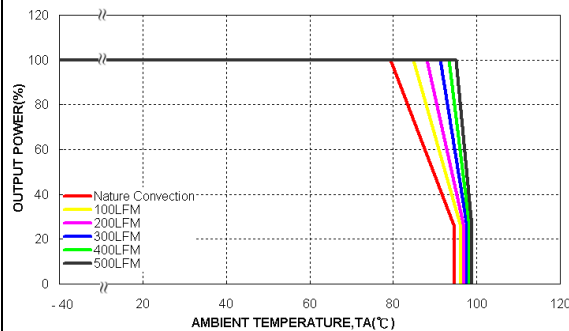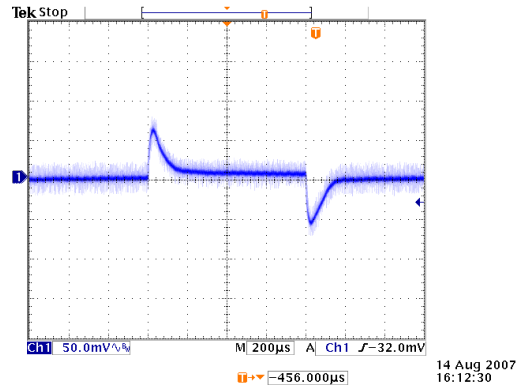
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

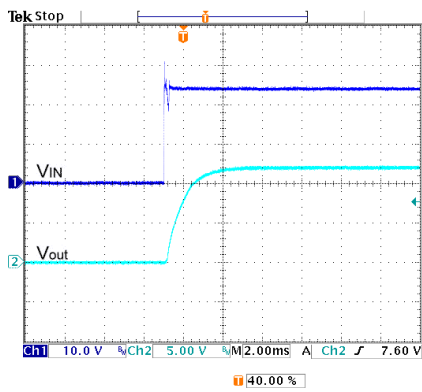## Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are for PXD10-24S05

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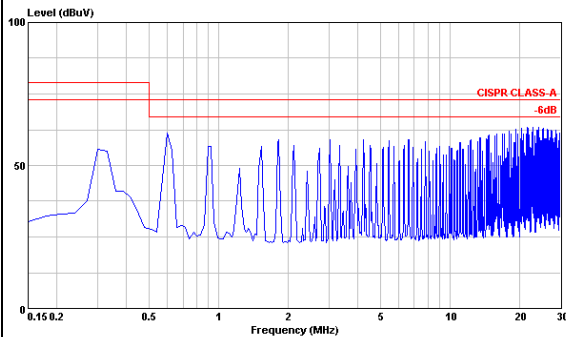
Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

**Typical Input Start-Up and Output Rise Characteristic**

Vin = Vin(nom)   ; Full Load

Using ON/OFF Voltage Start-Up and Vo Rise Characteristic

Vin = Vin(nom)   ; Full Load
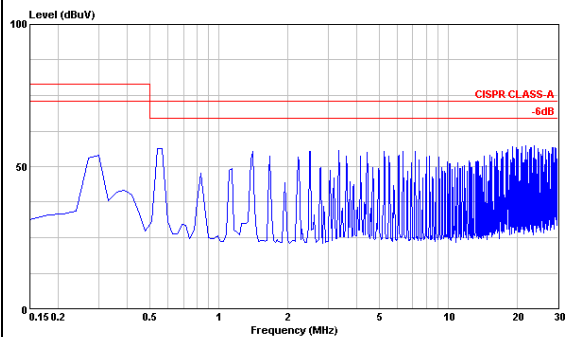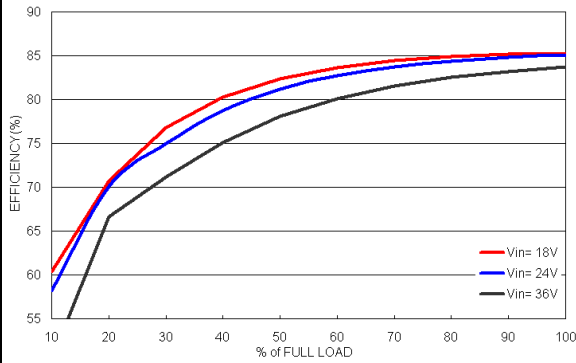

Conduction Emission of EN55022 Class A

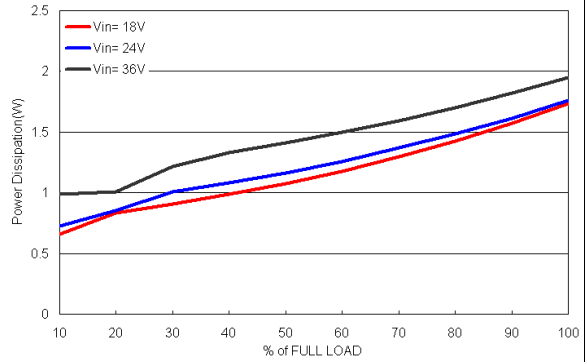**Vin = Vin(nom)   ; Full Load**
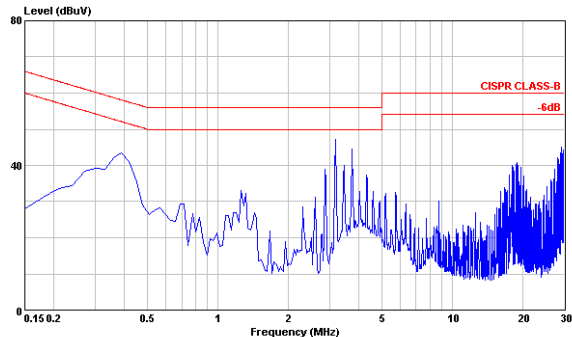
Conduction Emission of EN55022 Class B

Vin = Vin(nom)   ; Full Load

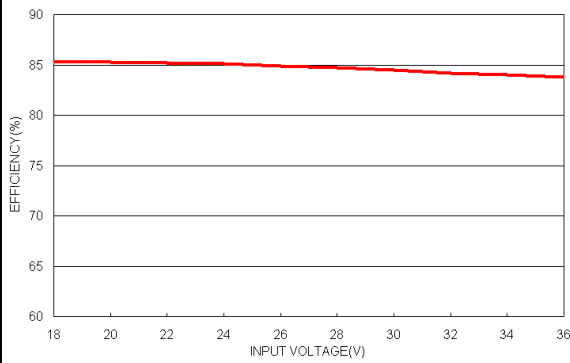## Characteristic Curves (Continued)

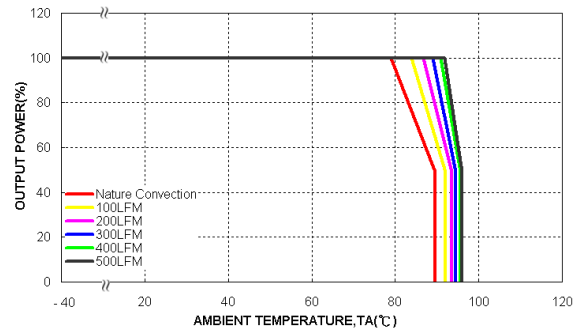All test conditions are at 25°C.The figures are for PXD10-24S12

**Efficiency versus Output Current**

Power Dissipation versus Output Current

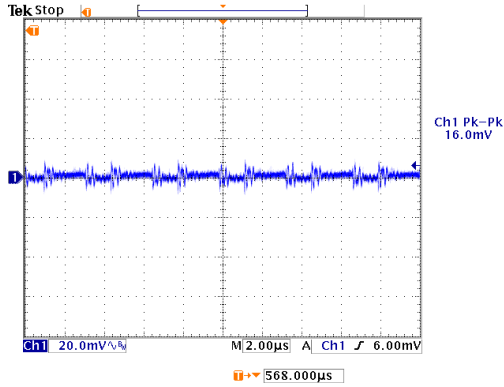**Efficiency versus Input Voltage. Full Load**

Derating Output Current versus Ambient Temperature and Airflow Vin = Vin(nom)
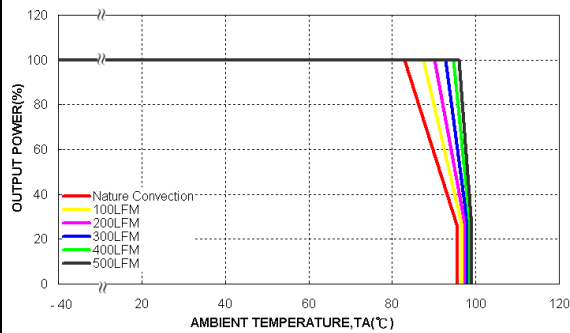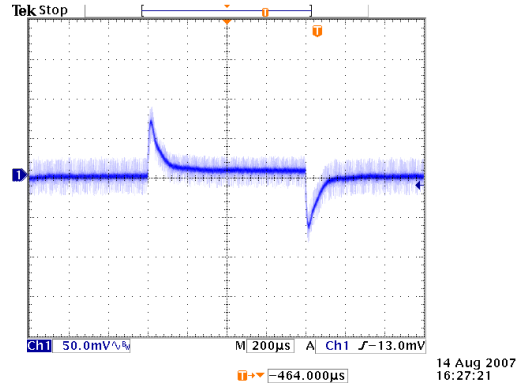
Derating Output Current Versus Ambient Temperature with Heat-Sink and Airflow ,Vin = Vin(nom)
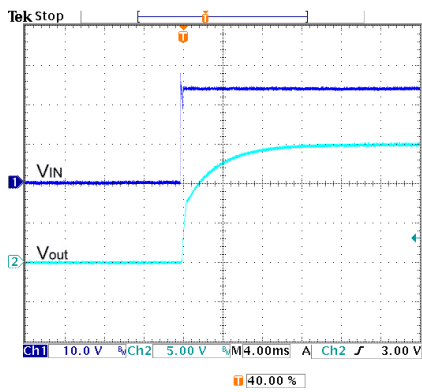
Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are for PXD10-24S12

**Typical Output Ripple and Noise.**

Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

**Typical Input Start-Up and Output Rise Characteristic**

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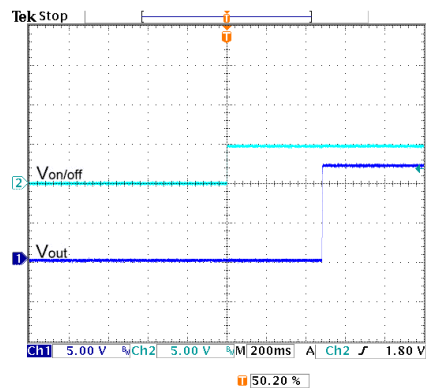
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
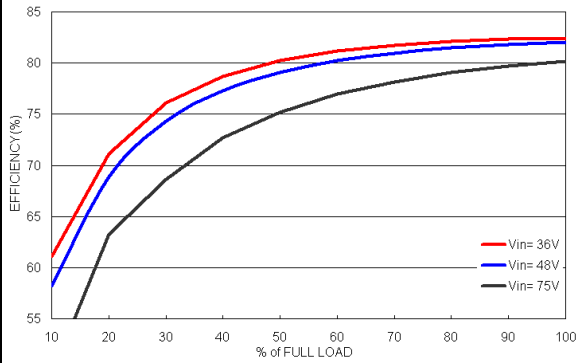
Vin = Vin(nom)   ; Full Load

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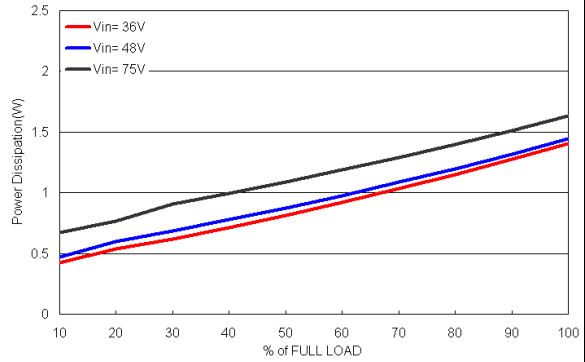
Vin = Vin(nom)   ; Full Load
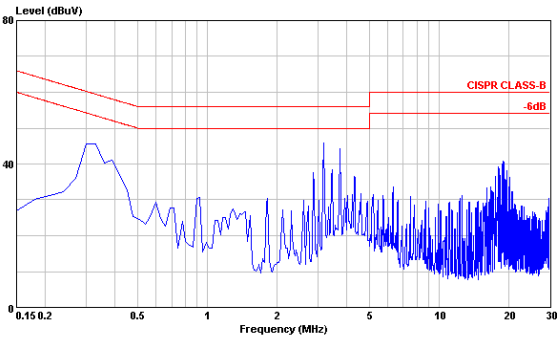
Conduction Emission of EN55022 Class B

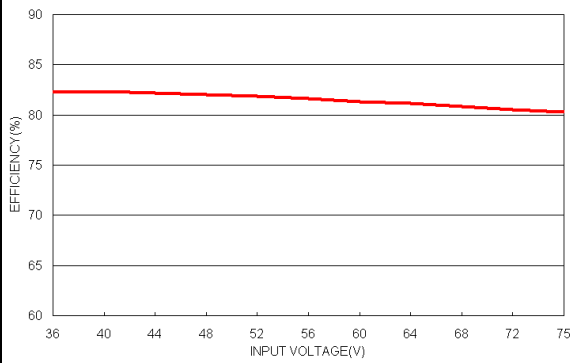**Vin = Vin(nom)   ; Full Load**

Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are for PXD10-24S15

Efficiency versus Output Current

Power Dissipation versus Output Current

Efficiency versus Input Voltage. Full Load

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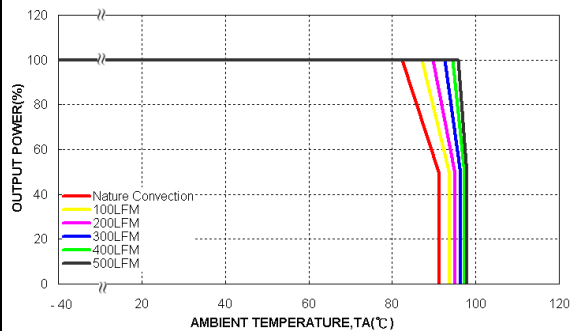
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are for PXD10-24S15

Typical Output Ripple and Noise.

Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

Typical Input Start-Up and Output Rise Characteristic

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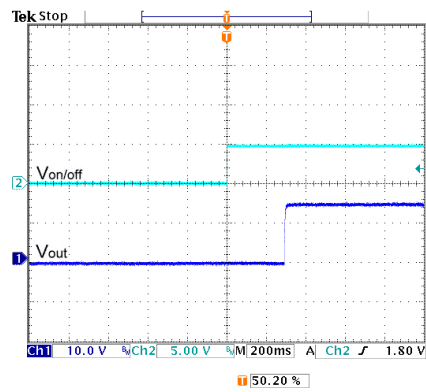
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic

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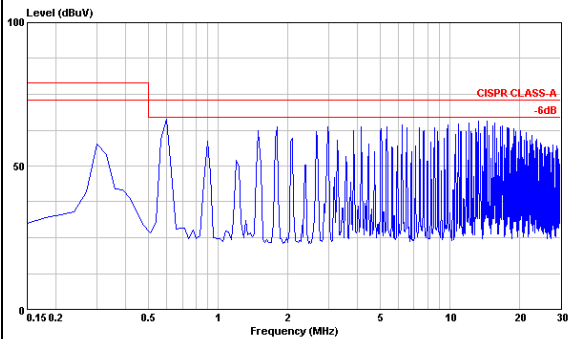
Conduction Emission of EN55022 Class A

Vin = Vin(nom)   ; Full Load
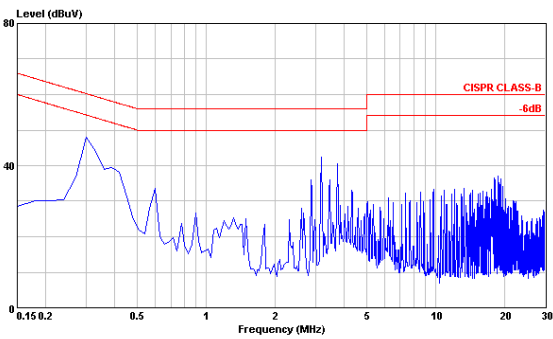
Conduction Emission of EN55022 Class B

Vin = Vin(nom)   ; Full Load

Characteristic Curves (Continued)
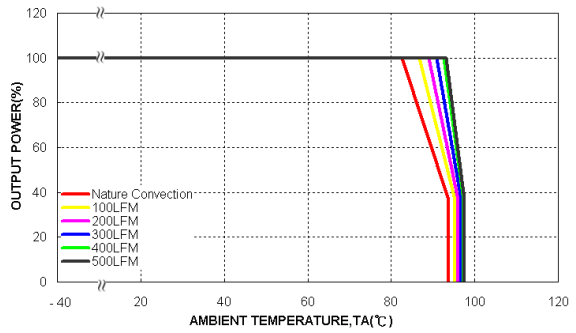
All test conditions are at 25°C.The figures are for PXD10-48S3P3
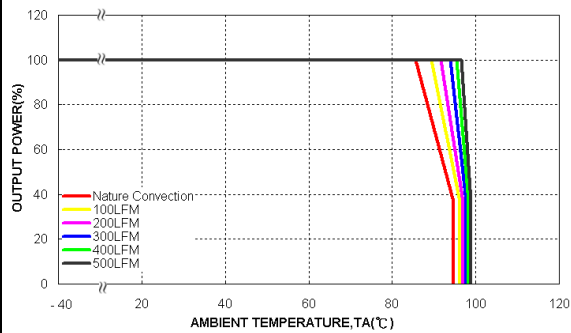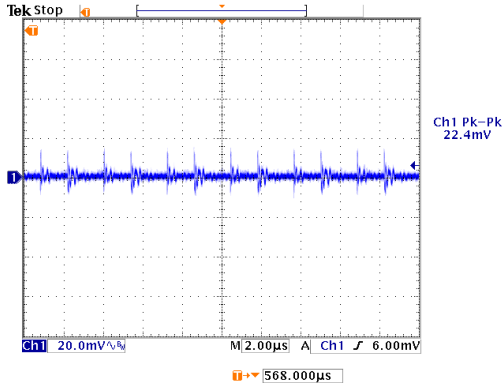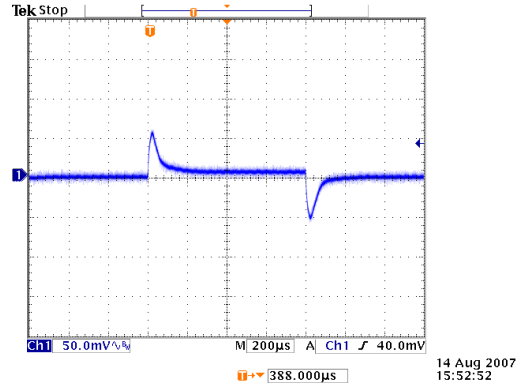

Efficiency versus Output Current

Power Dissipation versus Output Current

Efficiency versus Input Voltage. Full Load

Derating Output Current versus Ambient Temperature and Airflow

Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink and Airflow ,Vin = Vin(nom)
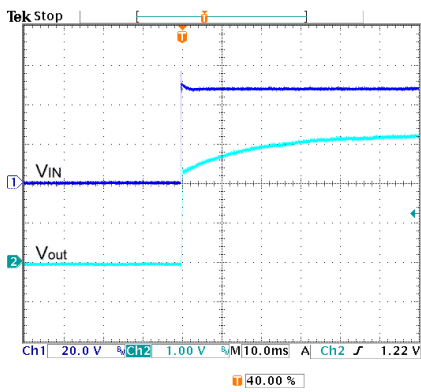
Characteristic Curves (Continued)

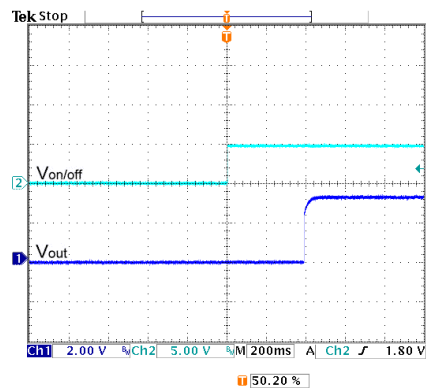All test conditions are at 25°C. The figures are for PXD10-48S3P3

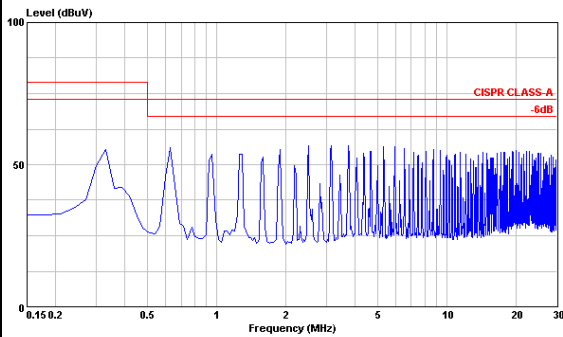**Typical Output Ripple and Noise.**

Vin = Vin(nom) ; Full Load

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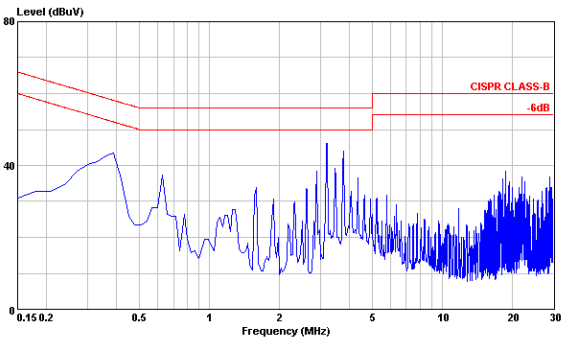
100% to 75% to 100% of Full Load ; Vin = Vin(nom)

Typical Input Start-Up and Output Rise Characteristic

Vin = Vin(nom) ; Full Load

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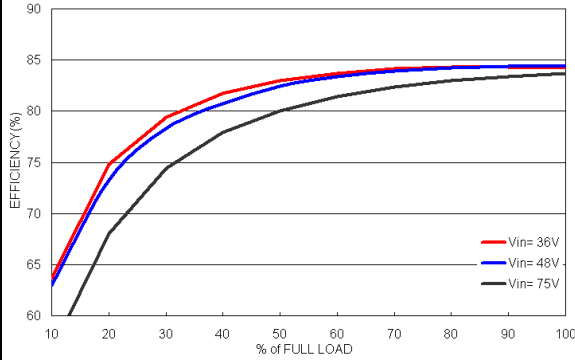
Vin = Vin(nom) ; Full Load

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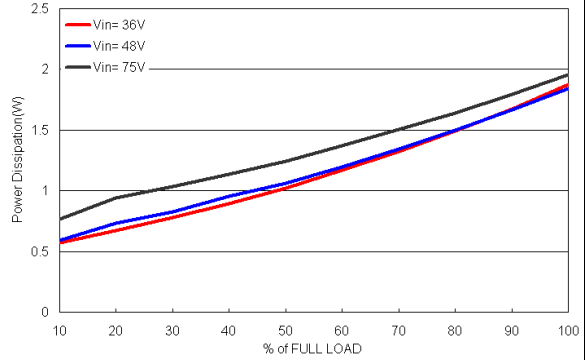
Vin = Vin(nom) ; Full Load

Conduction Emission of EN55022 Class B

Vin = Vin(nom) ; Full Load
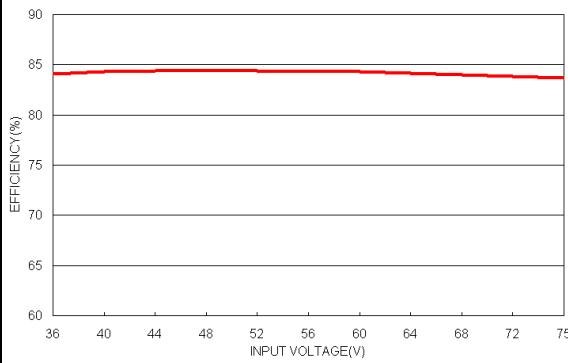
Characteristic Curves (Continued)

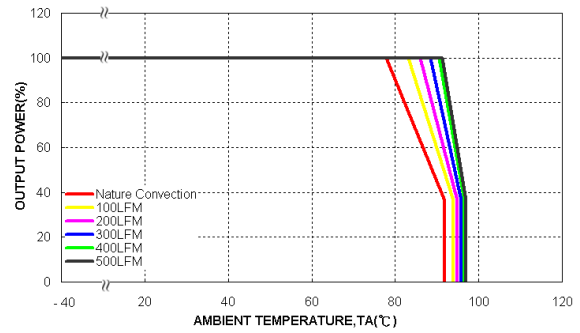All test conditions are at 25°C.The figures are for PXD10-48S05
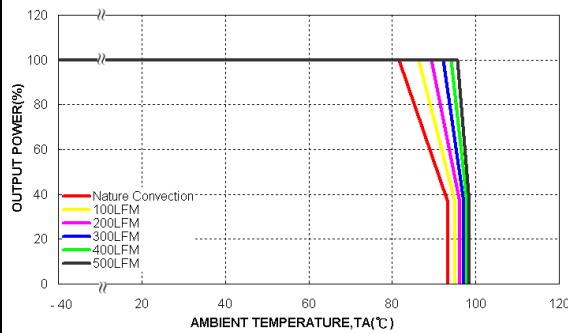

Efficiency versus Output Current

Power Dissipation versus Output Current

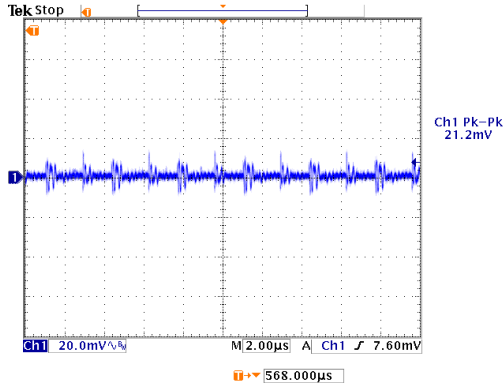**Efficiency versus Input Voltage. Full Load**

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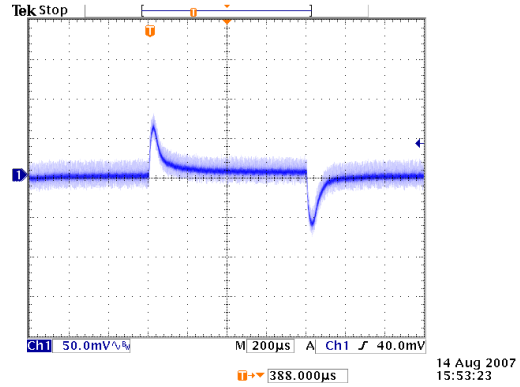
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)

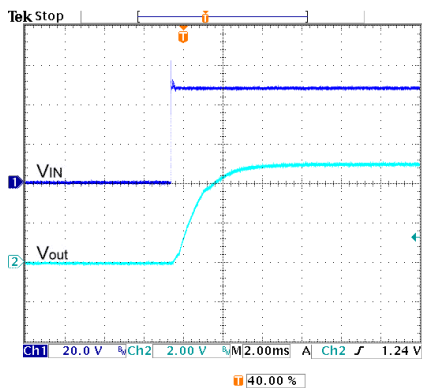## Characteristic Curves (Continued)
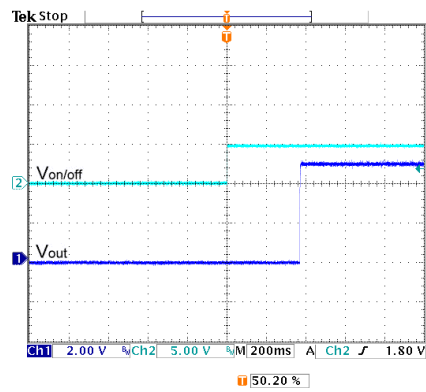
All test conditions are at 25°C. The figures are for PXD10-48S05

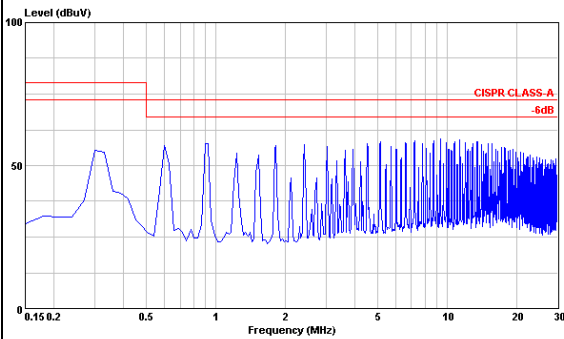**Typical Output Ripple and Noise.**

Vin = Vin(nom)   ; Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin = Vin(nom)

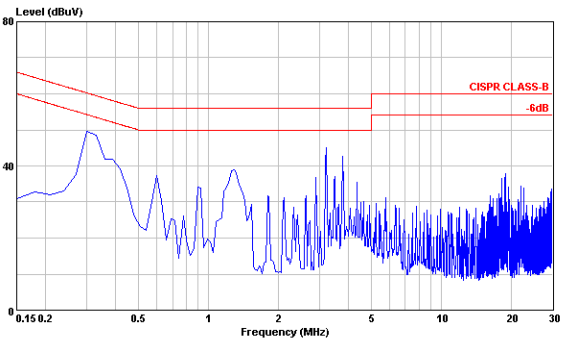**Typical Input Start-Up and Output Rise Characteristic**

Vin = Vin(nom)   ; Full Load

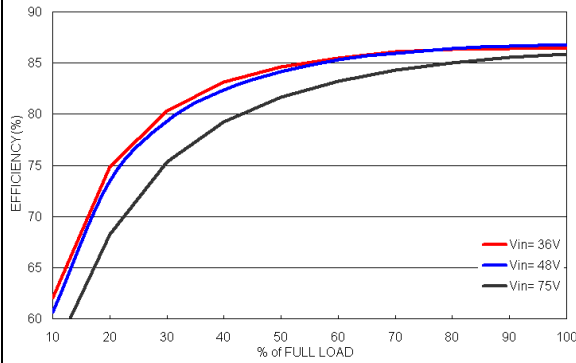**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

Vin = Vin(nom)   ; Full Load

Conduction Emission of EN55022 Class A

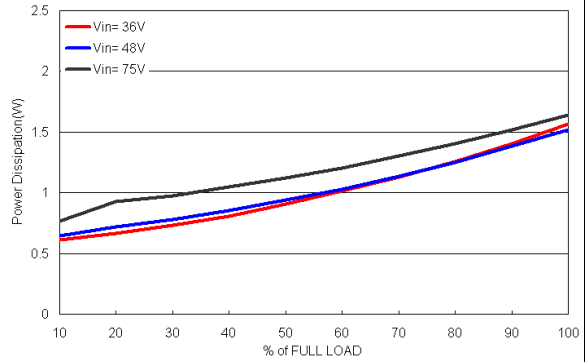**Vin = Vin(nom)   ; Full Load**

Conduction Emission of EN55022 Class B

Vin = Vin(nom)   ; Full Load

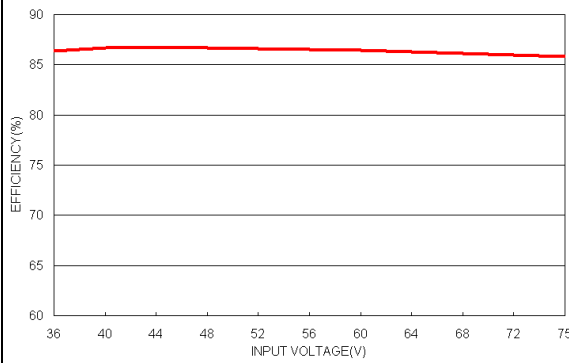## Characteristic Curves (Continued)

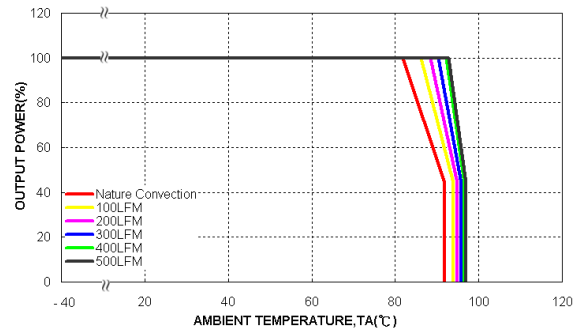All test conditions are at 25°C.The figures are for PXD10-48S12
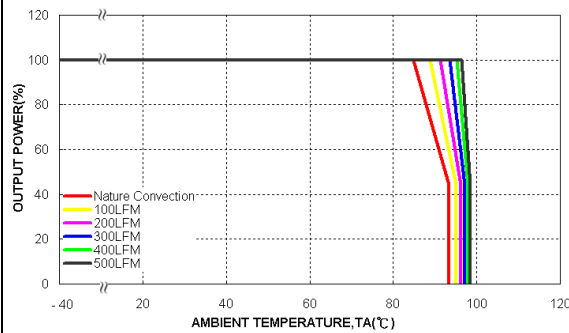
Efficiency versus Output Current

Power Dissipation versus Output Current

Efficiency versus Input Voltage. Full Load

Derating Output Current versus Ambient Temperature and Airflow

Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

and Airflow ,Vin = Vin(nom)