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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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PXD30-xxWS-xx-Single Output DC/DC Converters

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

TDK·Lambda

Applications

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

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
2.00 x 1.00 x 0.400 inch (50.8×25.4×10.2 mm)
- Input to output isolation (1600VDC)
- 4:1 ultra 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

General Description

The PXD30-xxWS-xx single output series offers 30 watts of output power from a 2 x 1.0 x 0.4 inch package. This series has a 4:1 ultra wide input voltage of 9-36VDC, 18-75VDC and features 1600VDC of isolation, short circuit protection, over-voltage protection, over-current protection and six sided shielding. All models are particularly suited for telecommunications, industrial, mobile telecom and test equipment applications.

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Absolute Maximum Ratings				
Parameter	Model	Min	Max	Unit
Input Voltage	Continuous	24WSxx	40	Vdc
		48WSxx	80	
Transient (100ms)		24WSxx	50	
		48WSxx	100	
Operating Ambient Temperature without derating	All	-40	50	°C
		50	85	
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 ; $T_A=25^{\circ}C$)	xxWS1P5	1.485	1.5	1.515	Vdc
	xxWS2P5	2.475	2.5	2.525	
	xxWS3P3	3.267	3.3	3.333	
	xxWS05	4.95	5.0	5.05	
	xxWS5P1	5.049	5.1	5.151	
	xxWS12	11.88	12	12.12	
	xxWS15	14.85	15	15.15	
Voltage adjustability	All	-10		+10	%
Output Regulation Line ($V_{in(min)}$ to $V_{in(max)}$ at Full Load)	All	-0.2		+0.2	% V_o
		-0.5		+0.5	
Output Ripple & Noise Peak-to-Peak (5Hz to 20MHz bandwidth) (Measured with a 1 μ F/50V MLCC)	xxWS1P5			100	mVp-p
	xxWS2P5			100	
	xxWS3P3			100	
	xxWS05			100	
	xxWS5P1			100	
	xxWS12			150	
	xxWS15			150	
Temperature Coefficient	All	-0.02		+0.02	% $V_o/^{\circ}C$
Output Voltage Overshoot ($V_{in} = V_{in(min)}$ to $V_{in(max)}$; Full Load ; $T_A=25^{\circ}C$)	All		0	5	% V_o
Dynamic Load Response ($V_{in} = V_{in(nom)}$; $T_A=25^{\circ}C$) Load step change from 75% to 100% or 100 to 75% of Full Load Peak Deviation	All		300		mV
	All		250		μ s
Output Current	xxWS1P5	0		8500	mA
	xxWS2P5	0		8000	
	xxWS3P3	0		7500	
	xxWS05	0		6000	
	xxWS5P1	0		6000	
	xxWS12	0		2500	
	xxWS15	0		2000	

Output Specification(Continued)					
Parameter	Model	Min	Typ	Max	Unit
Output Over Voltage Protection (Zener diode clamp)	xxWS1P5		2.0		Vdc
	xxWS2P5		3.3		
	xxWS3P3		3.9		
	xxWS05		6.2		
	xxWS5P1		6.2		
	xxWS12		15		
	xxWS15		18		
Output Over Current Protection	All		150		% FL.
Output Short Circuit Protection	All	Hiccup, automatic recovery			

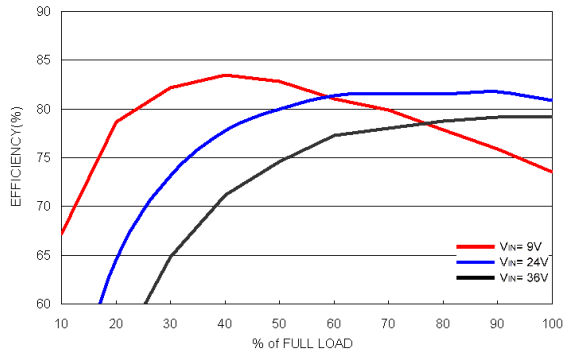
Input Specification					
Parameter	Model	Min	Typ	Max	Unit
Operating Input Voltage	24WSxx	9	24	36	Vdc
	48WSxx	18	48	75	
Input Current (Maximum value at $V_{in} = V_{in(nom)}$; Full Load)	24WS1P5			700	mA
	24WS2P5			1054	
	24WS3P3			1258	
	24WS05			1488	
	24WS5P1			1517	
	24WS12			1471	
	24WS15			1471	
	48WS1P5			350	
	48WS2P5			520	
	48WS3P3			629	
	48WS05			744	
	48WS5P1			759	
	48WS12			727	
	48WS15			718	
Input Standby current (Typical value at $V_{in} = V_{in(nom)}$; No Load)	24WS1P5		70		mA
	24WS2P5		70		
	24WS3P3		70		
	24WS05		105		
	24WS5P1		105		
	24WS12		20		
	24WS15		30		
	48WS1P5		30		
	48WS2P5		45		
	48WS3P3		45		
	48WS05		65		
	48WS5P1		65		
	48WS12		60		
	48WS15		50		
Under Voltage Lockout Turn-on Threshold	24WSxx		9		Vdc
	48WSxx		36		
Under Voltage Lockout Turn-off Threshold	24WSxx		8		Vdc
	48WSxx		32		

Input Specification(Continuous)					
Parameter	Model	Min	Typ	Max	Unit
Input reflected ripple current (5 to 20MHz, 12 μ H source impedance)	All		20		mAp-p
Start Up Time (Vin = Vin(nom) and constant resistive load)	All				ms
Power up			30		
Remote ON/OFF			30		
Remote ON/OFF Control (The On/Off pin voltage is referenced to -Vin)	All				
Positive logic					
On/Off pin High Voltage (Remote ON)		3.0		12	Vdc
On/Off pin Low Voltage (Remote OFF)		0		1.2	Vdc
Negative logic					
On/Off pin Low Voltage (Remote ON)		0		1.2	Vdc
On/Off pin High Voltage (Remote OFF)	3.0		12	Vdc	
Remote Off Input Current	All		3		mA
Input Current of Remote Control Pin	All	-0.5		0.5	mA

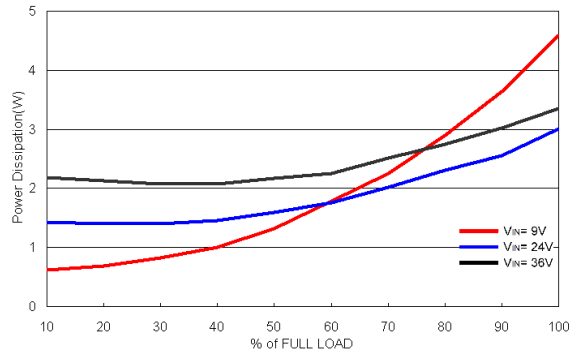
General Specification						
Parameter	Model	Min	Typ	Max	Unit	
Efficiency (Vin = Vin(nom) ; Full Load ; TA=25°C)	24WS1P5 24WS2P5 24WS3P3 24WS05 24WS5P1 24WS12 24WS15 48WS1P5 48WS2P5 48WS3P3 48WS05 48WS5P1 48WS12 48WS15		80 83 86 88 88 89 89 80 84 86 88 88 90 91			%
Case grounding	All	Connect case to -Vin with decoupling Y cap.				
Isolation voltage Input to Output Input to Case, Output to Case	All	1600 1600			Vdc	
Isolation resistance	All	1			G Ω	
Isolation capacitance	All			1500	pF	
Switching Frequency	All		430		KHz	
Weight	All		30.5		g	
MTBF Bellcore TR-NWT-000332, Tc=40°C MIL-HDBK-217F	All		3.17 \times 10 ⁶ 4.35 \times 10 ⁵		hours	
Over temperature protection	All		115		°C	

Characteristic Curves

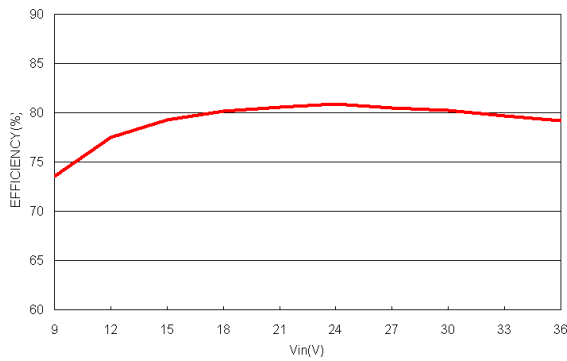
All test conditions are at 25°C. The figures are for PXD30-24WS1P5



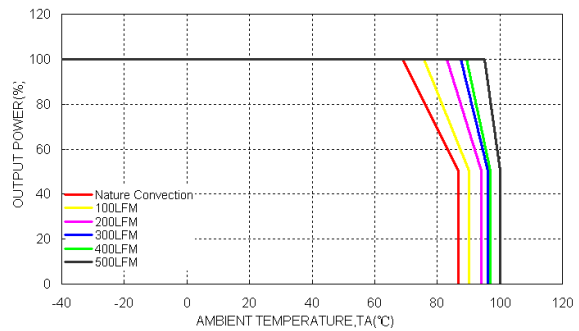
Efficiency Versus Output Current



Power Dissipation Versus Output Current



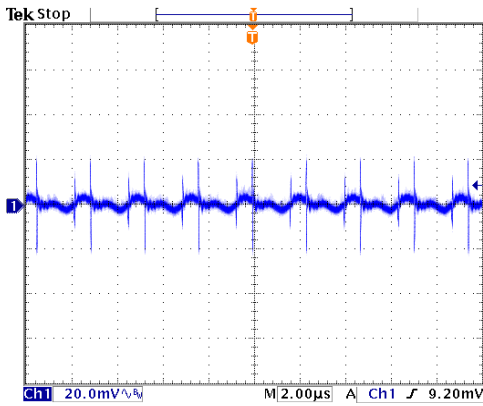
Efficiency Versus Input Voltage. Full Load



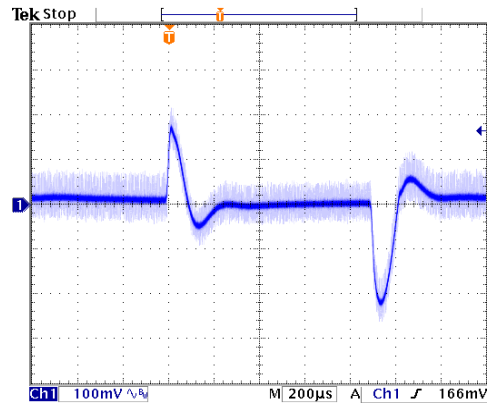
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)

Characteristic Curves (Continued)

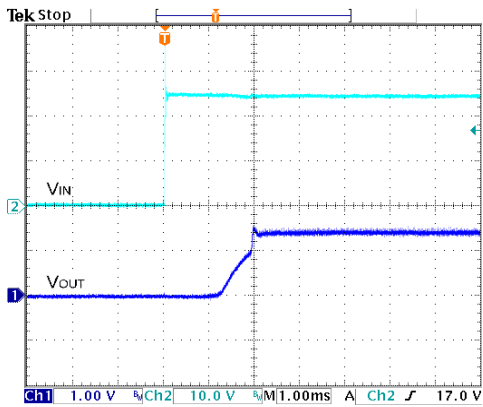
All test conditions are at 25°C. The figures are for PXD30-24WS1P5



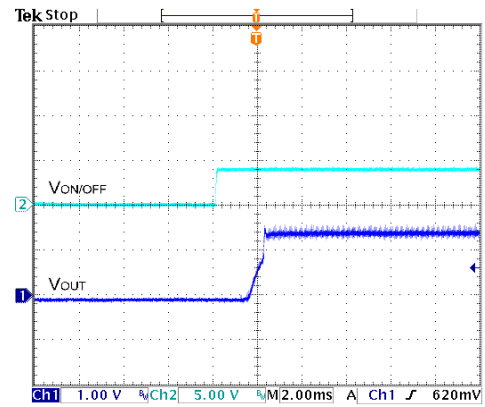
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



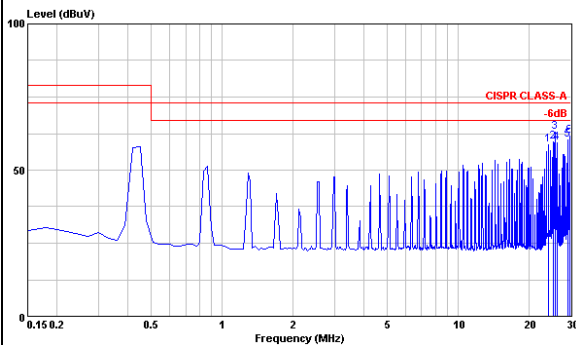
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



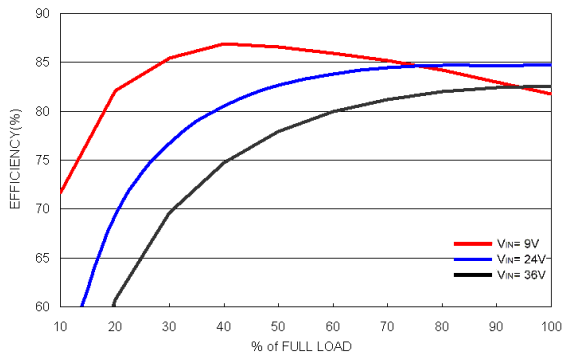
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



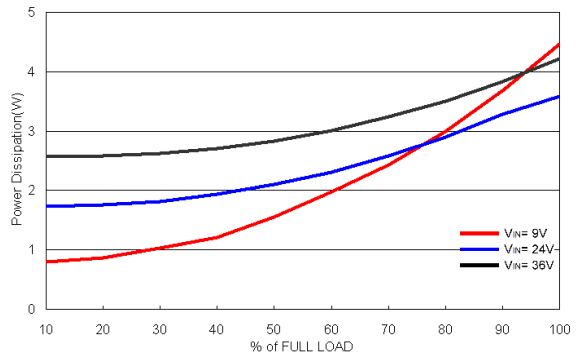
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

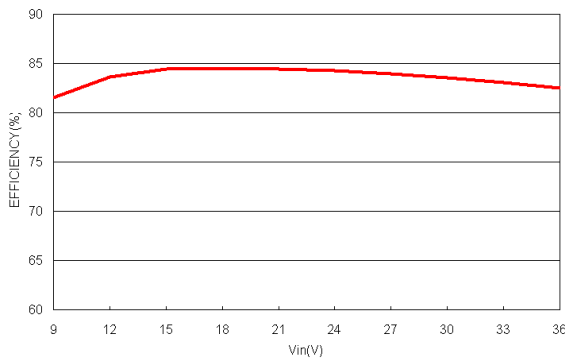
All test conditions are at 25°C. The figures are for PXD30-24WS2P5



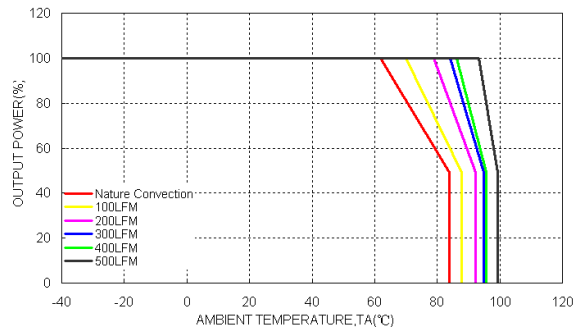
Efficiency Versus Output Current



Power Dissipation Versus Output Current



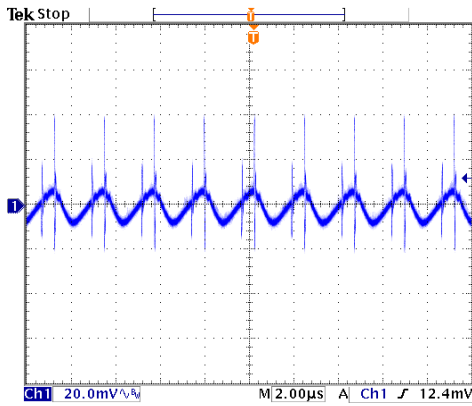
Efficiency Versus Input Voltage. Full Load



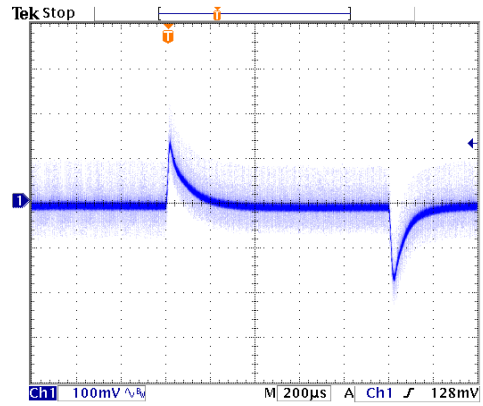
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)

Characteristic Curves (Continued)

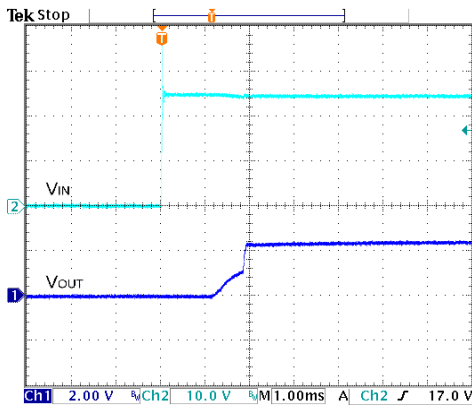
All test conditions are at 25°C The figures are for PXD30-24WS2P5



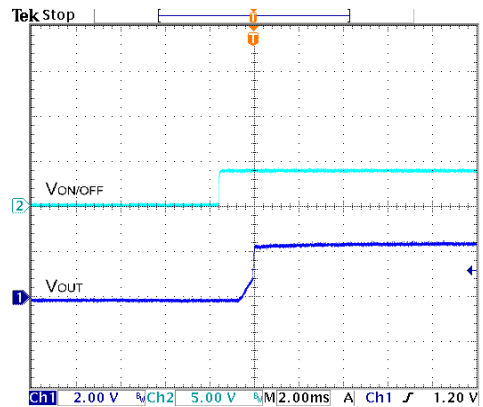
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



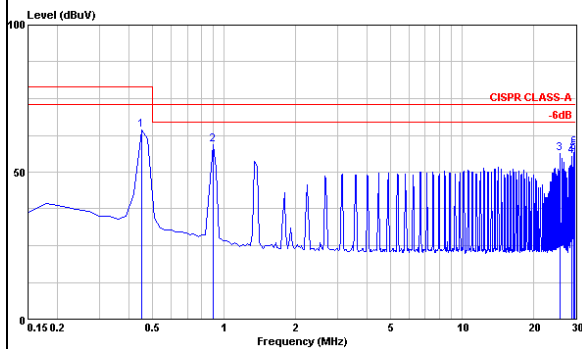
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



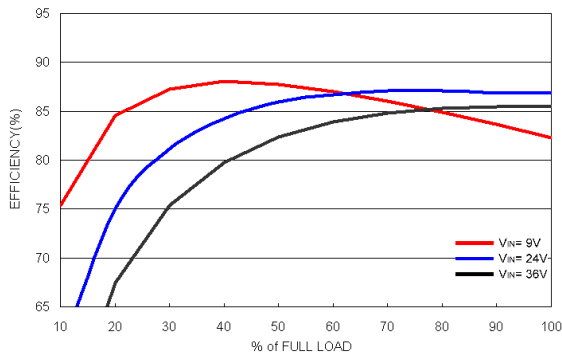
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



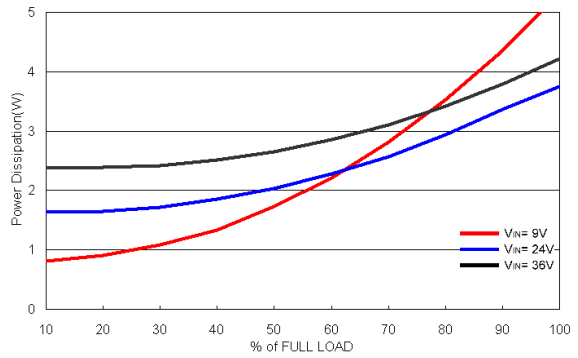
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

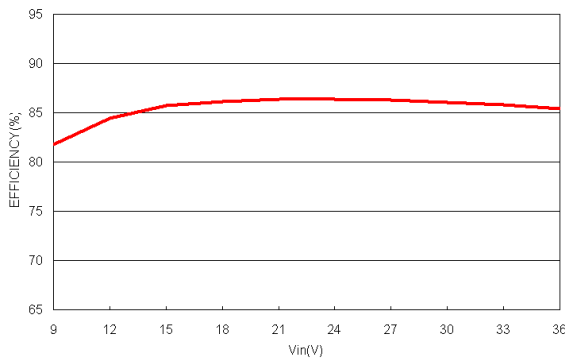
All test conditions are at 25°C. The figures are for PXD30-24WS3P3.



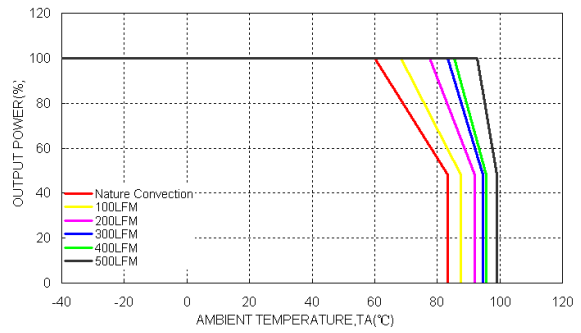
Efficiency Versus Output Current



Power Dissipation Versus Output Current



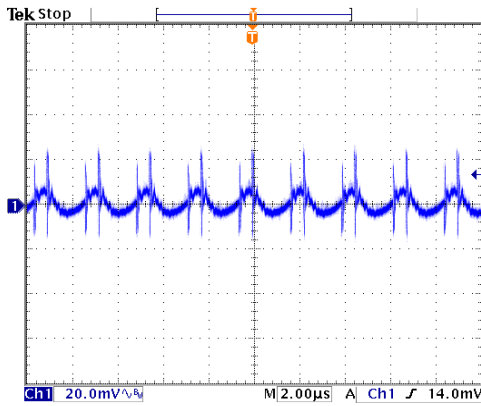
Efficiency Versus Input Voltage. Full Load



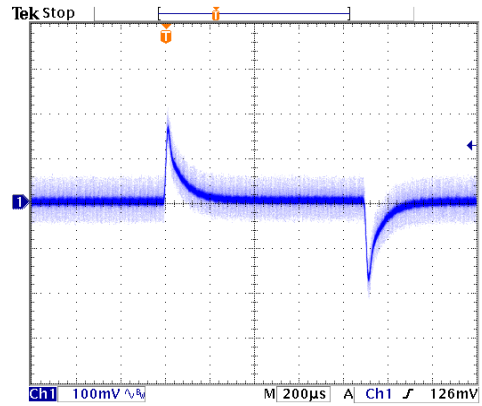
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$

Characteristic Curves (Continued)

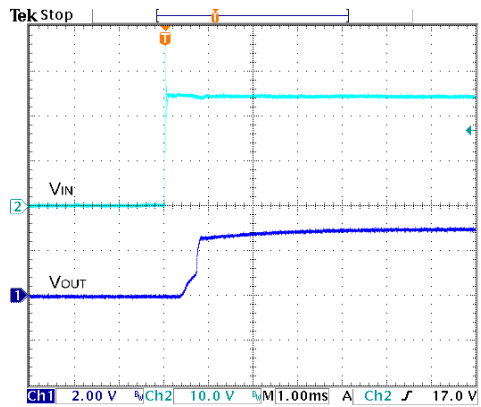
All test conditions are at 25°C. The figures are for PXD30-24WS3P3.



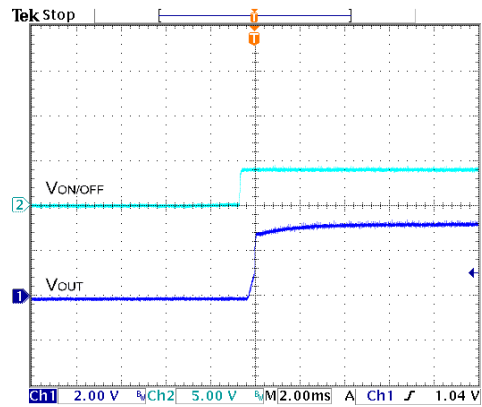
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



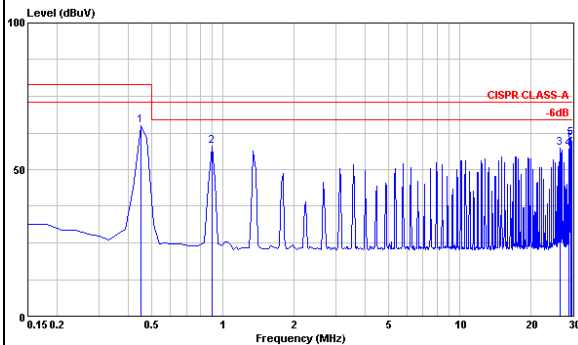
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



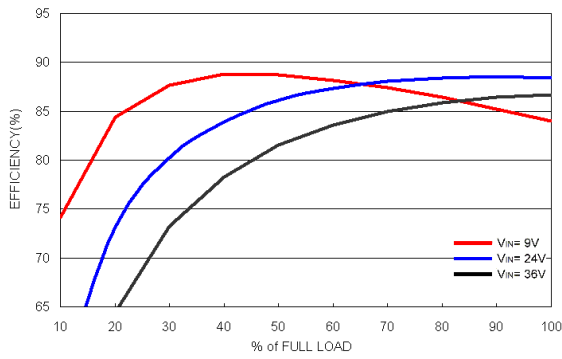
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



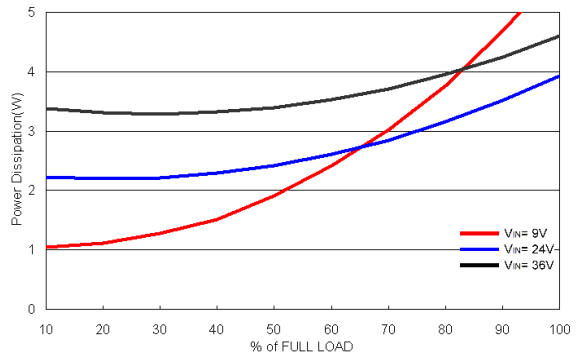
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

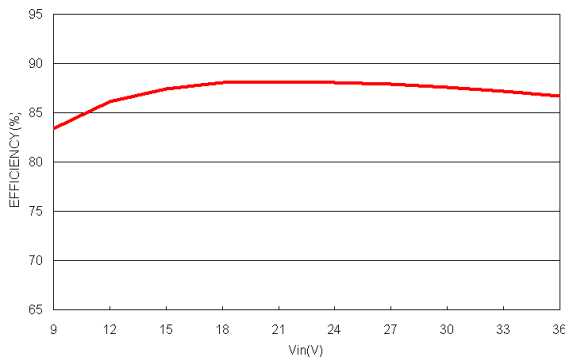
All test conditions are at 25°C. The figures are for PXD30-24WS05.



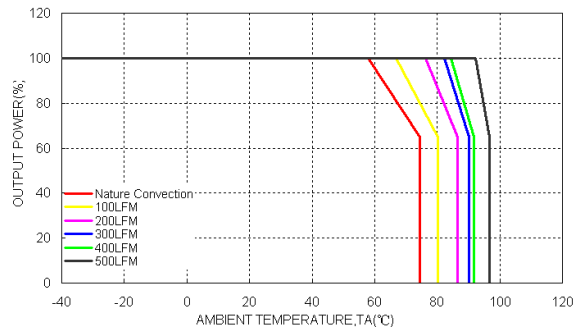
Efficiency Versus Output Current



Power Dissipation Versus Output Current



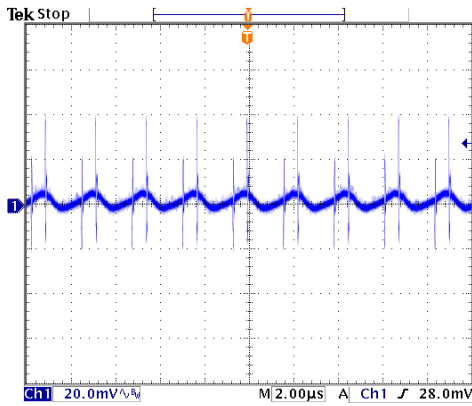
Efficiency Versus Input Voltage. Full Load



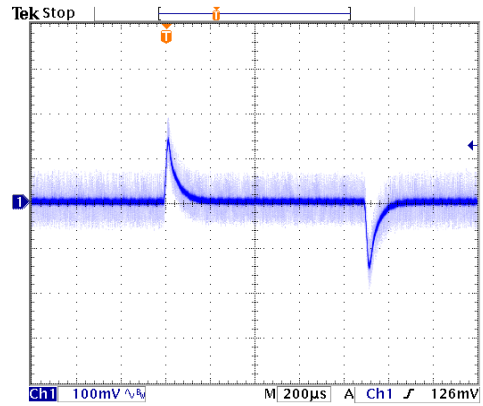
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in} = V_{in}(nom)$

Characteristic Curves (Continued)

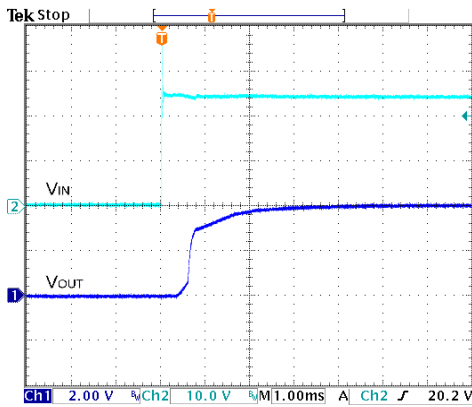
All test conditions are at 25°C. The figures are for PXD30-24WS05.



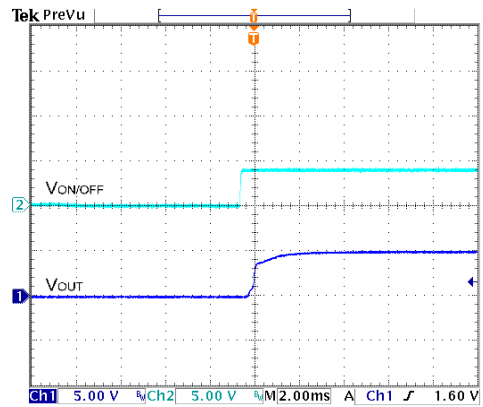
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



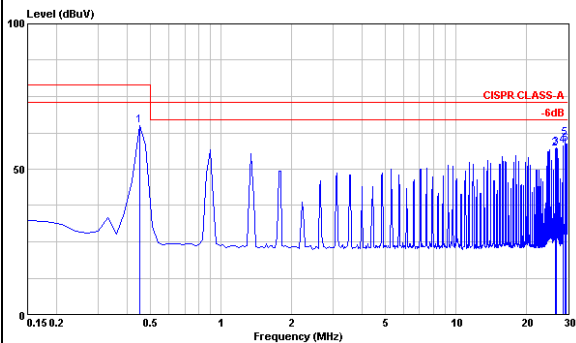
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



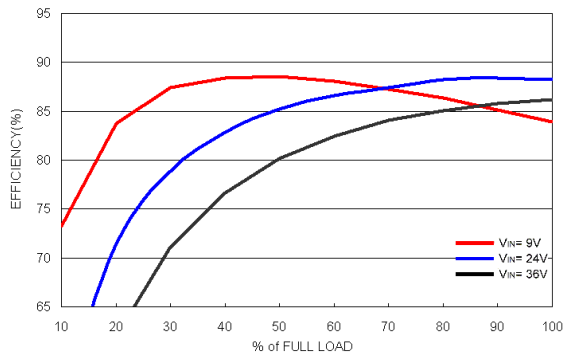
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



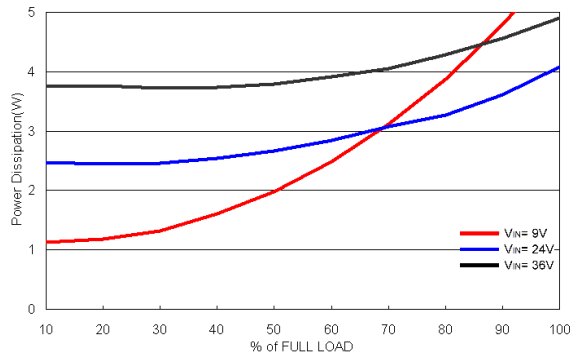
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

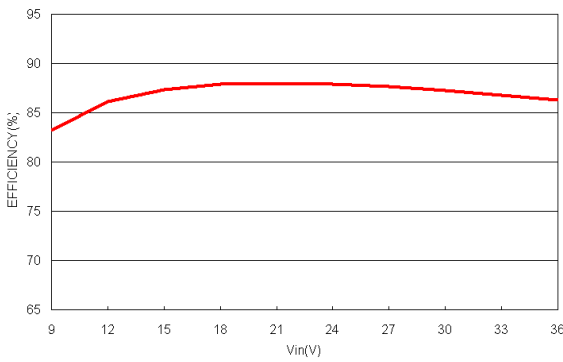
All test conditions are at 25°C. The figures are identical for PXD30-24WS5P1



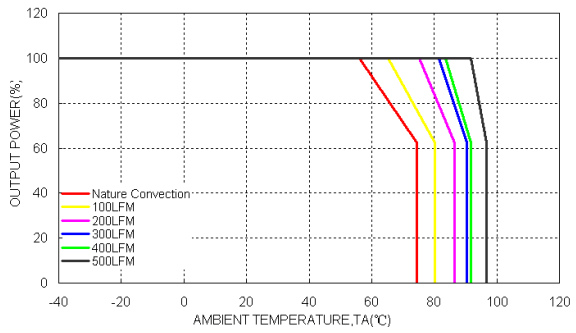
Efficiency Versus Output Current



Power Dissipation Versus Output Current



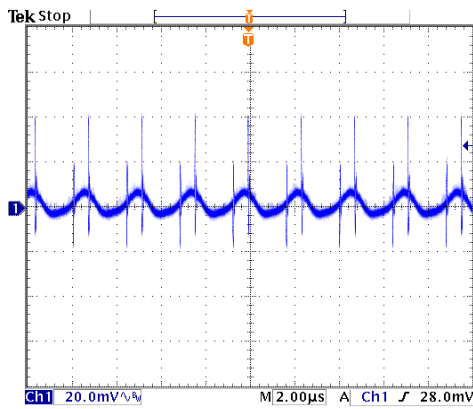
Efficiency Versus Input Voltage. Full Load



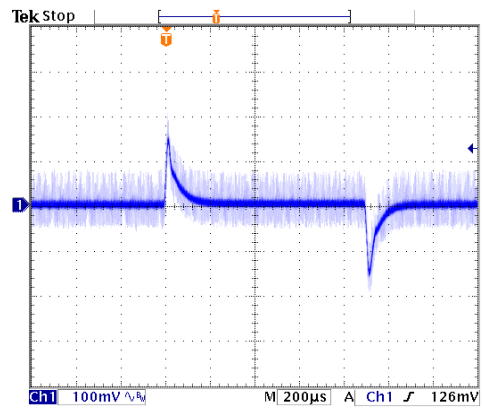
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$

Characteristic Curves (Continued)

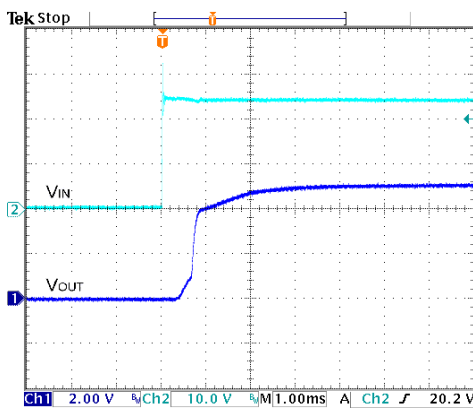
All test conditions are at 25°C . The figures are for PXD30-24WS5P1



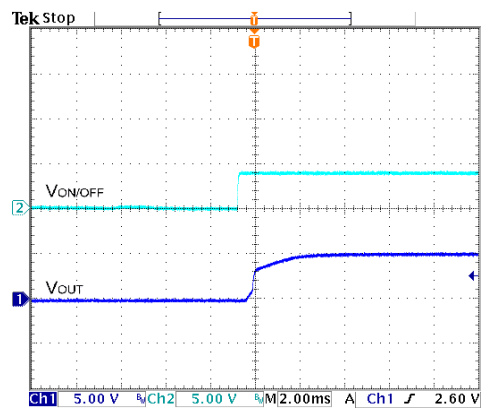
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



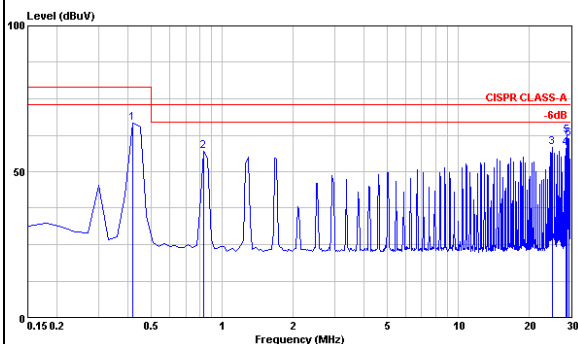
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



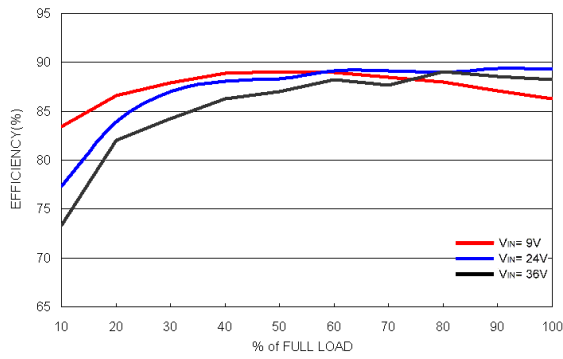
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



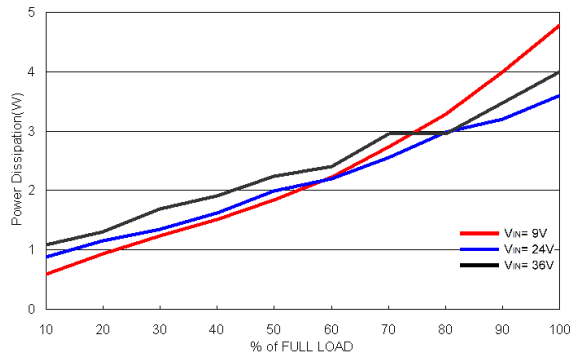
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

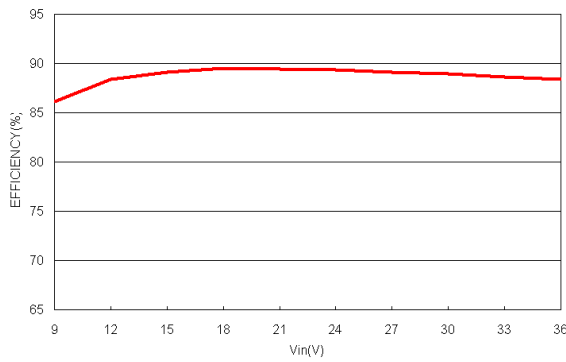
All test conditions are at 25°C .The figures are for PXD30-24WS12.



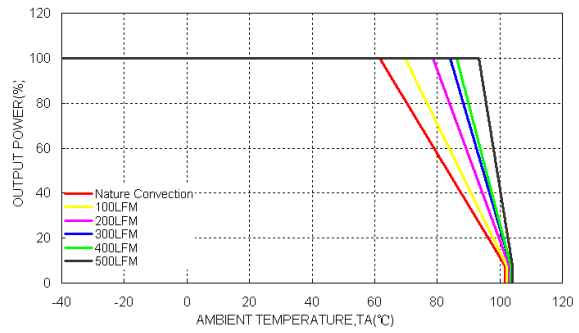
Efficiency Versus Output Current



Power Dissipation Versus Output Current



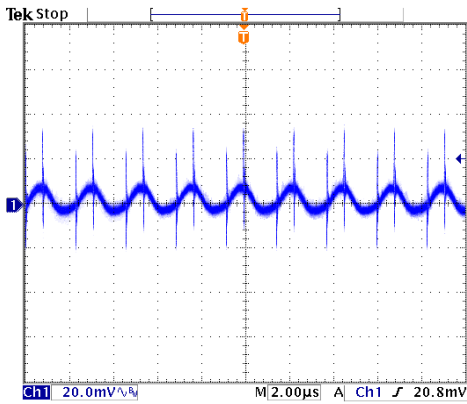
Efficiency Versus Input Voltage. Full Load



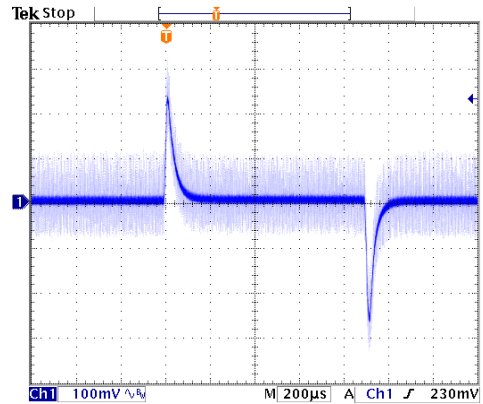
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$

Characteristic Curves (Continued)

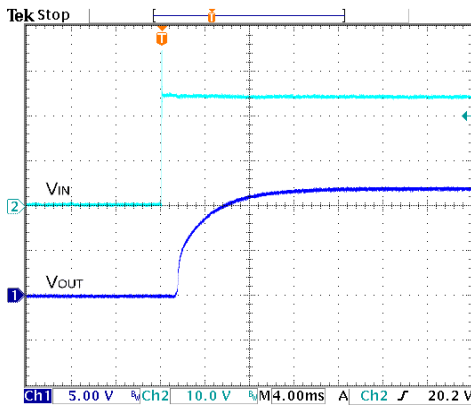
All test conditions are at 25°C . The figures are for PXD30-24WS12



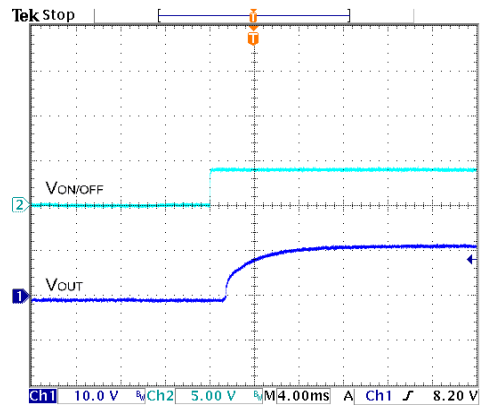
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



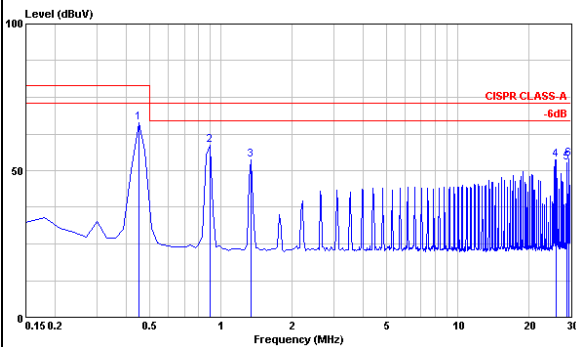
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



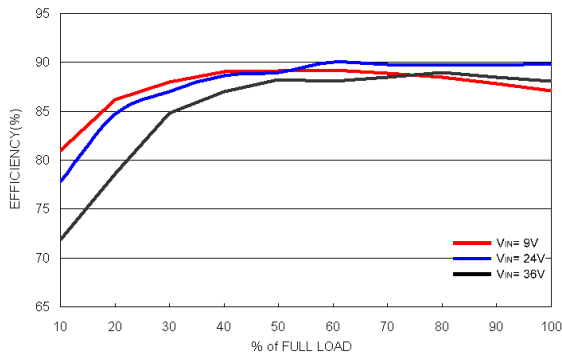
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



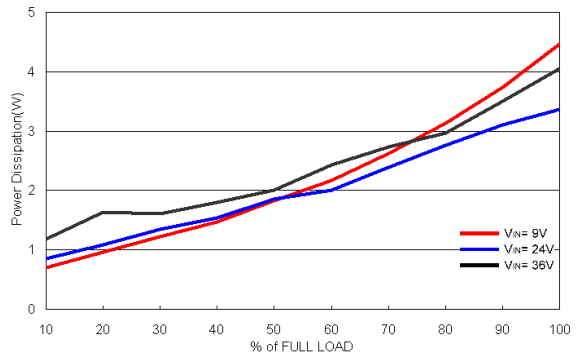
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

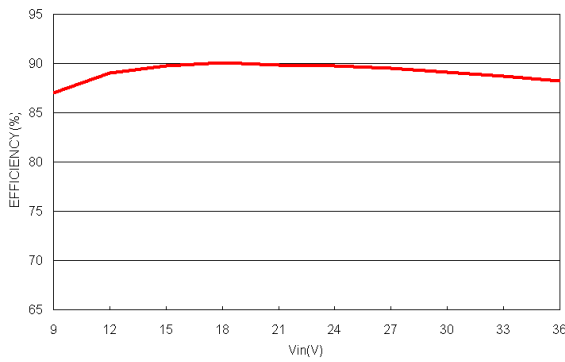
All test conditions are at 25°C .The figures are for PXD30-24WS15



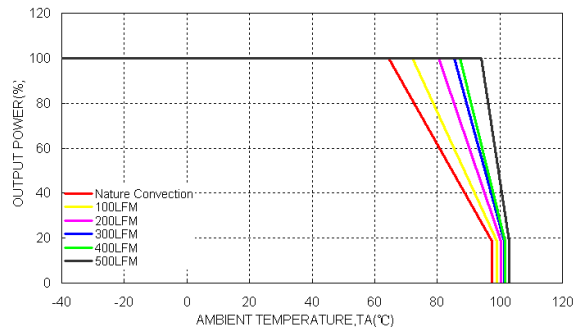
Efficiency Versus Output Current



Power Dissipation Versus Output Current



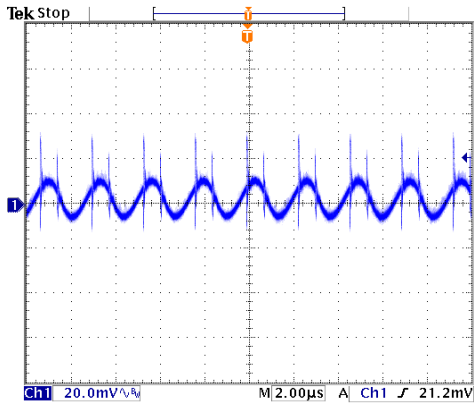
Efficiency Versus Input Voltage. Full Load



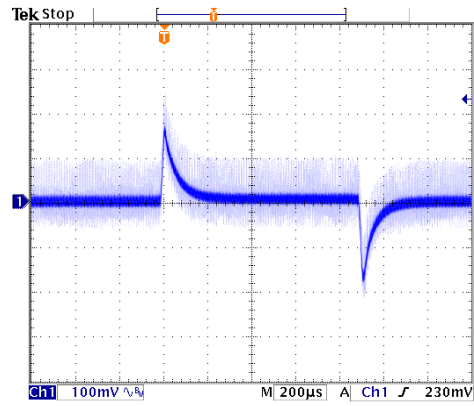
Derating Output Current Versus Ambient Temperature and Airflow
 $V_{in}=V_{in}(nom)$

Characteristic Curves (Continued)

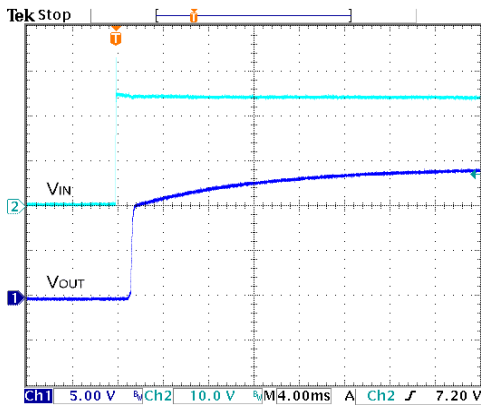
All test conditions are at 25°C . The figures are for PXD30-24WS15



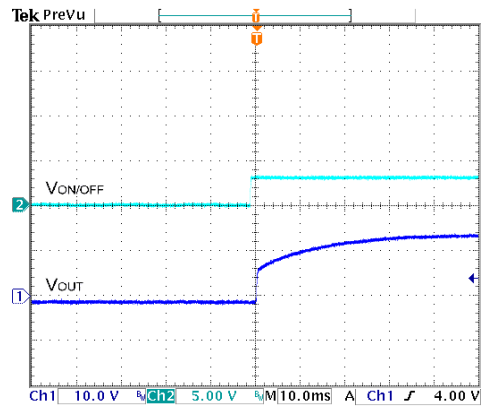
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



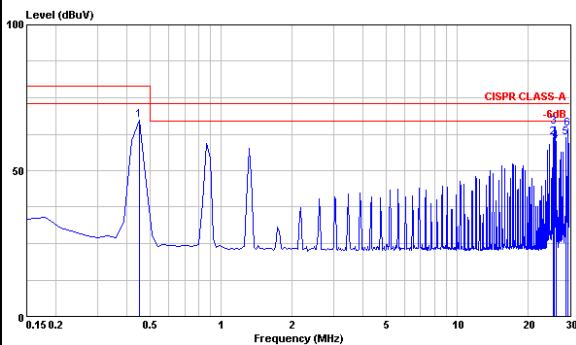
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



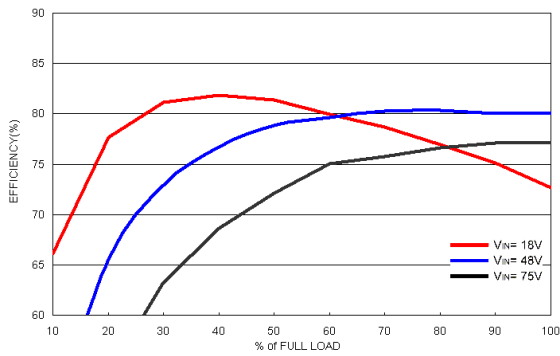
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



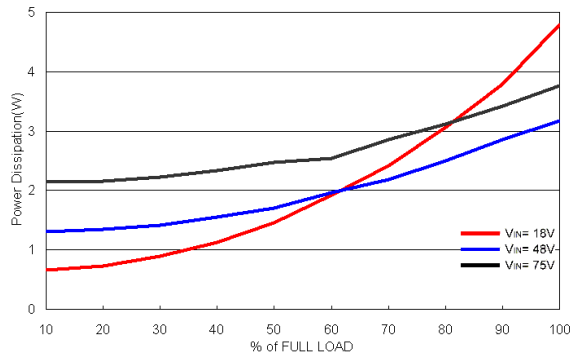
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

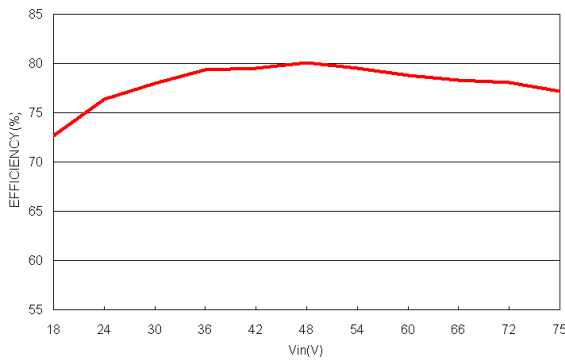
All test conditions are at 25°C .The figures are for PXD30-48WS1P5



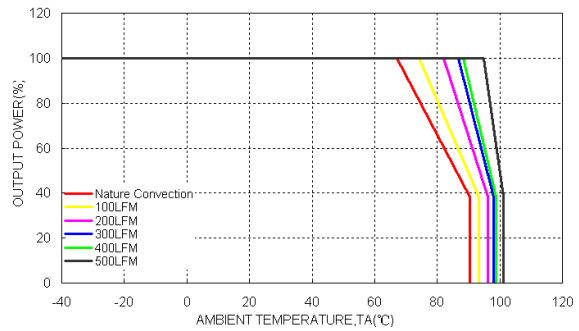
Efficiency Versus Output Current



Power Dissipation Versus Output Current



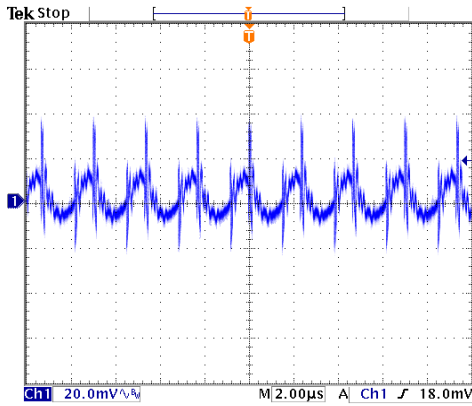
Efficiency Versus Input Voltage. Full Load



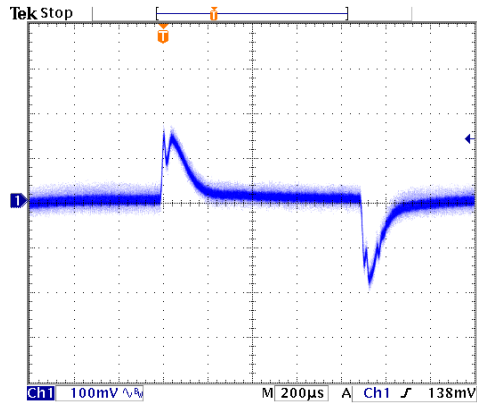
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)

Characteristic Curves (Continued)

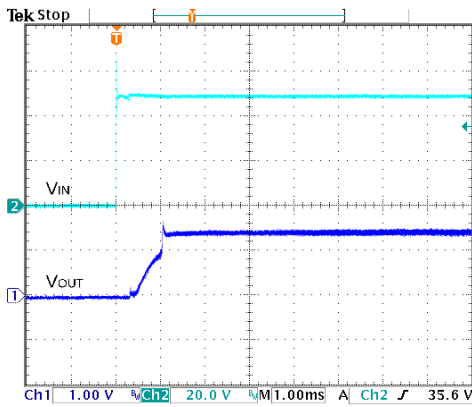
All test conditions are at 25°C . The figures are for PXD30-48WS1P5



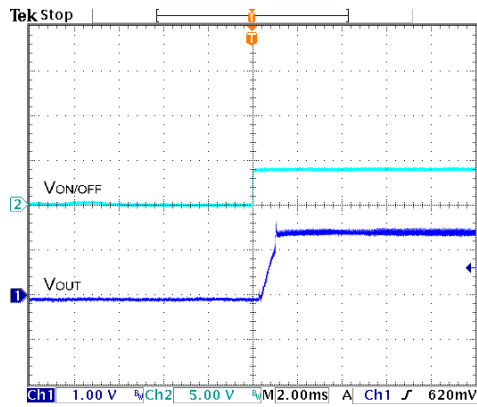
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



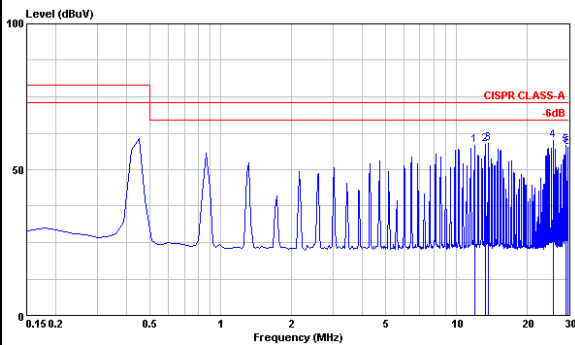
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



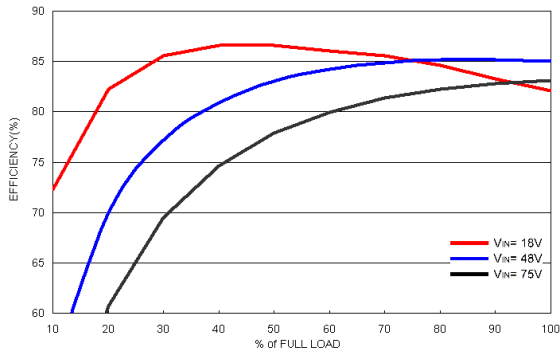
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



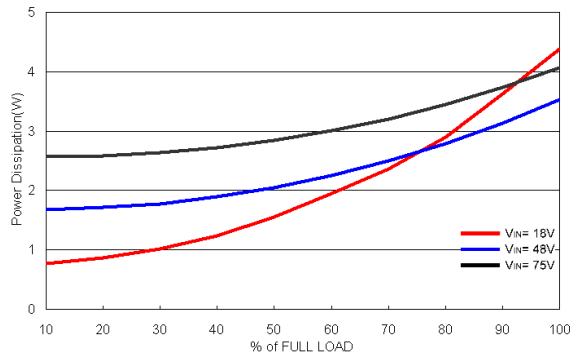
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

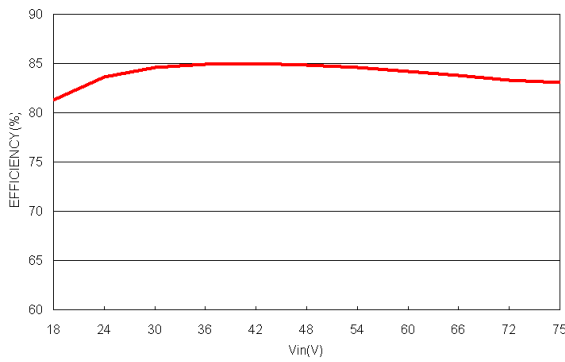
All test conditions are at 25°C .The figures are for PXD30-48WS2P5



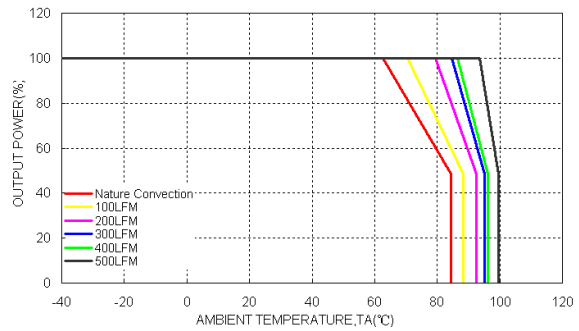
Efficiency Versus Output Current



Power Dissipation Versus Output Current



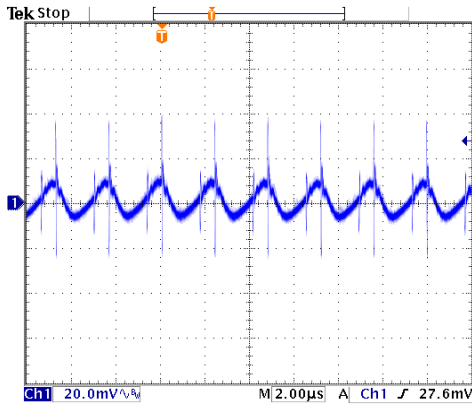
Efficiency Versus Input Voltage. Full Load



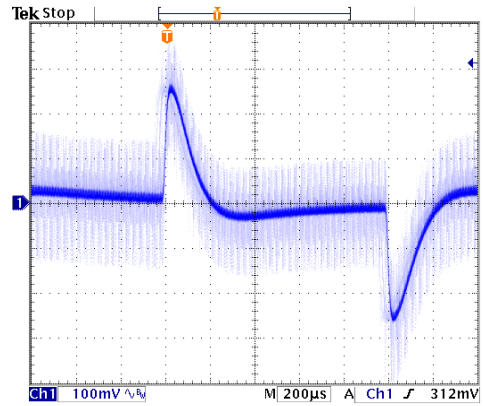
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)

Characteristic Curves (Continued)

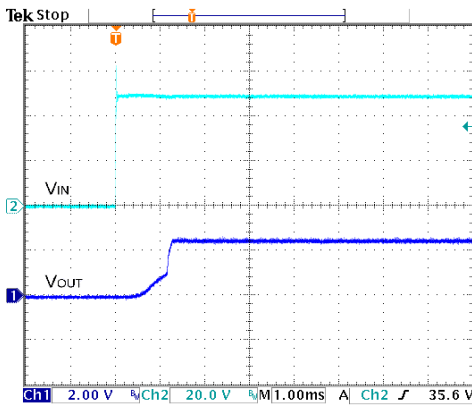
All test conditions are at 25°C . The figures are for PXD30-48WS2P5



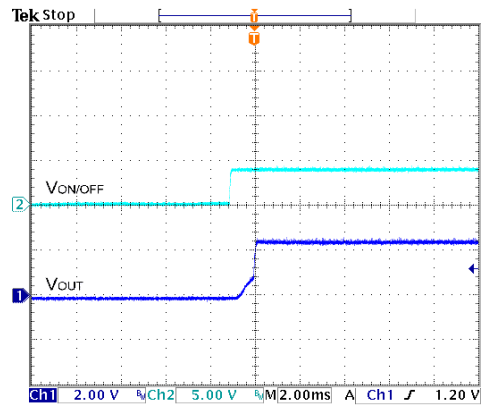
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



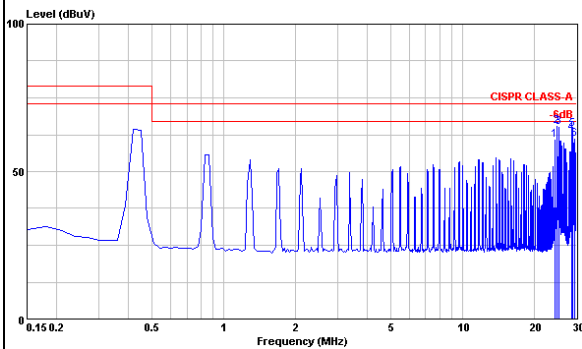
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



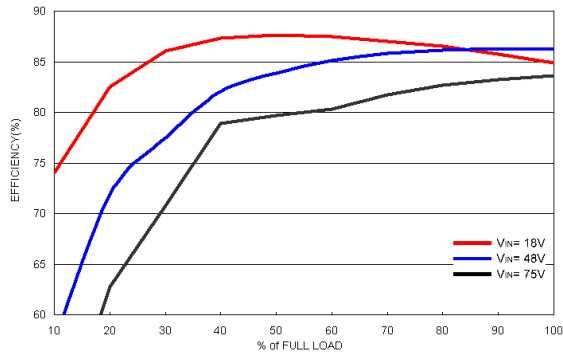
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



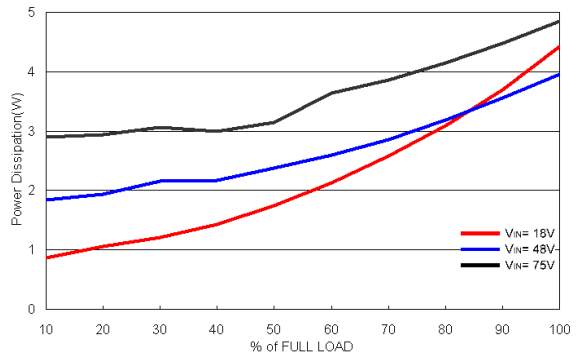
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

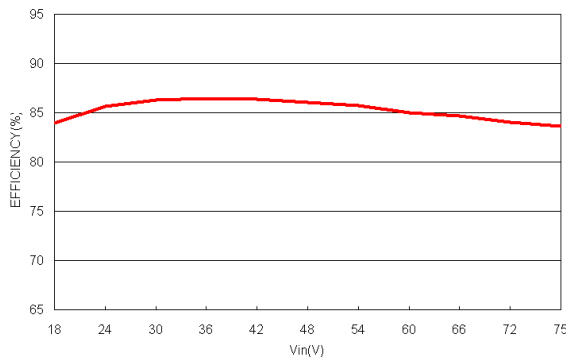
All test conditions are at 25°C .The figures are for PXD30-48WS3P3



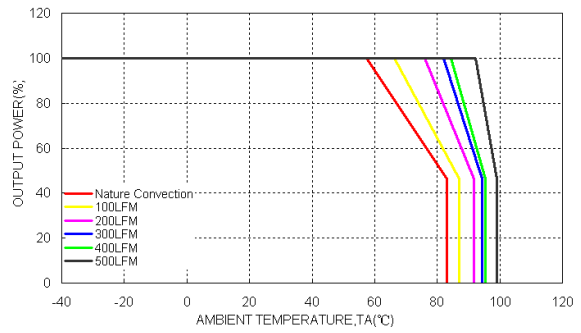
Efficiency Versus Output Current



Power Dissipation Versus Output Current



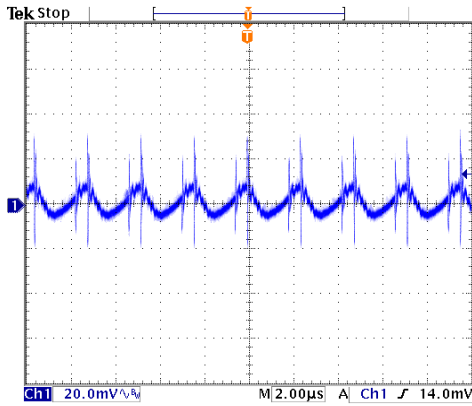
Efficiency Versus Input Voltage. Full Load



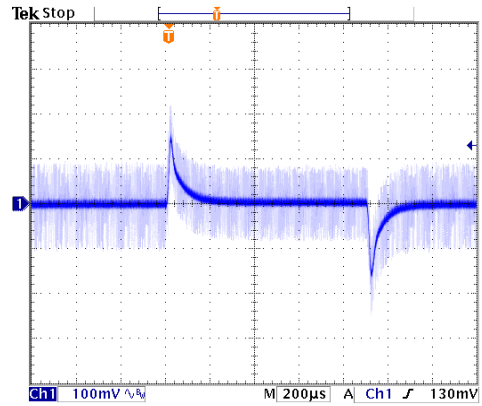
Derating Output Current Versus Ambient Temperature and Airflow
Vin=Vin(nom)

Characteristic Curves (Continued)

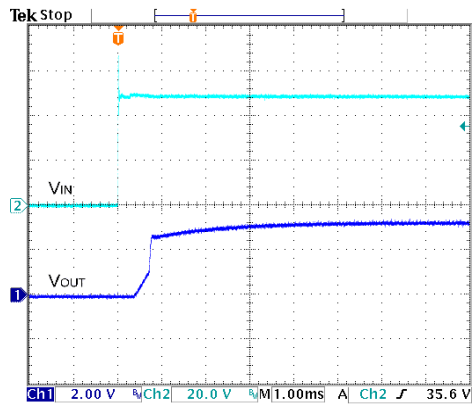
All test conditions are at 25°C . The figures are for PXD30-48WS3P3



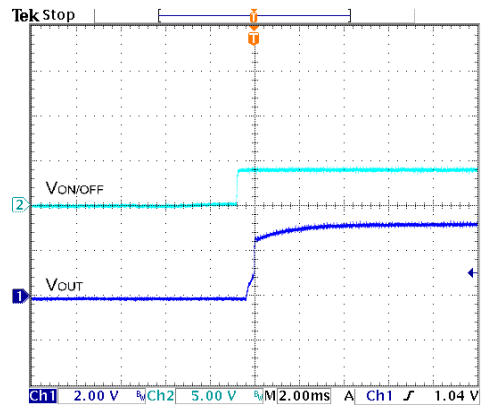
Typical Output Ripple and Noise.
Vin=Vin(nom), Full Load



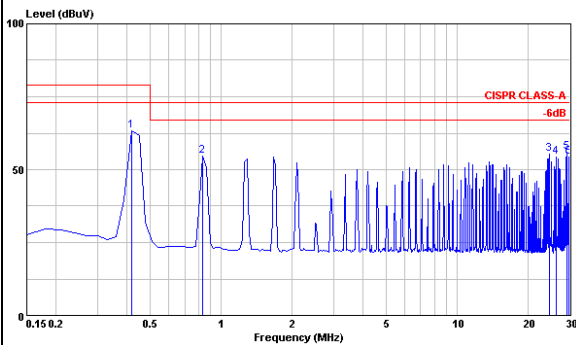
Transient Response to Dynamic Load Change from 100% to 75% to 100% of Full Load ; Vin=Vin(nom)



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



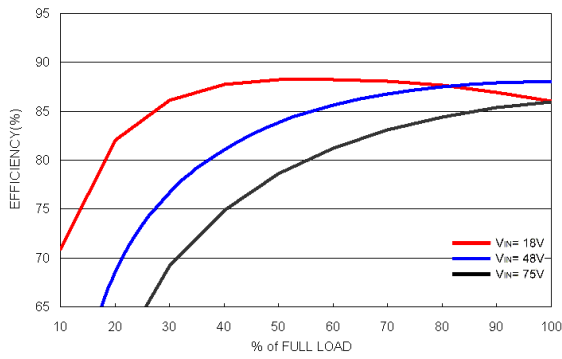
Using ON/OFF Voltage Start-Up and Vo Rise Characteristic
Vin=Vin(nom), Full Load



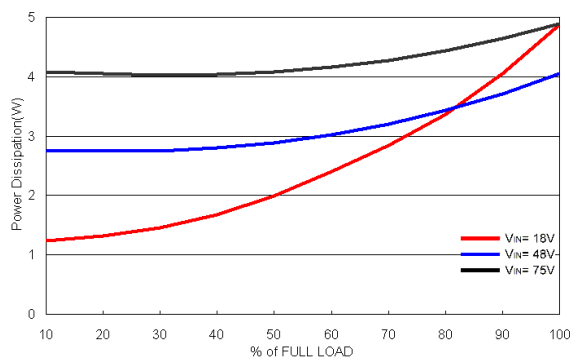
Conduction Emission of EN55022 Class A
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

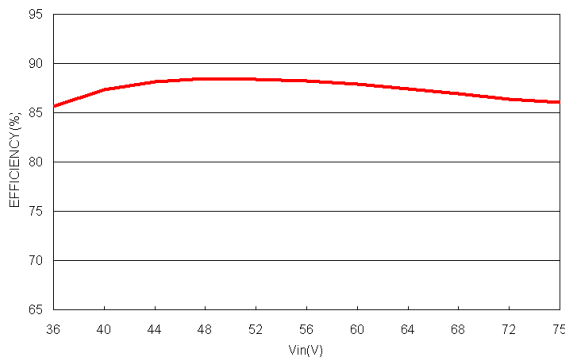
All test conditions are at 25°C .The figures are for PXD30-48WS05



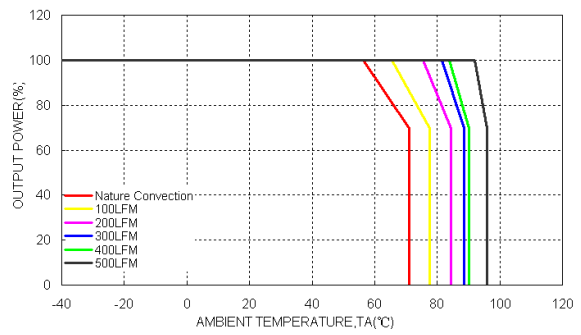
Efficiency Versus Output Current



Power Dissipation Versus Output Current



Efficiency Versus Input Voltage. Full Load



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