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

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Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

PXF40xxSxx-Single Output DC/DC Converters

9 to 18 Vdc , 18 to 36 Vdc or 36 to 75 Vdc input, 1.5 to 15 Vdc Single Output, 40W

Features

- Single output current up to 8A
- 40 watts maximum output power
- 2:1 wide input voltage range
- Six-sided continuous shield
- High efficiency up to 90%
- Low profile:2.00×2.00×0.40 inch (50.8×50.8×10.2 mm)
- Fixed switching frequency
- RoHS directive compliant
- Input to output isolation: 1600Vdc,min
- Over-temperature protection
- Input under-voltage protection
- Output over-voltage protection
- Over-current protection, auto-recovery
- Output short circuit protection, auto-recovery
- Remote ON/OFF

Options

- Heat sinks available for extended operation

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement
Semiconductor Equipment

General Description

The PXF40-xxSxx series offers 40 watts of output power from a 2 x 2 x 0.4 inch package. It has a 2:1 wide input voltage range of 9-18VDC, 18-36VDC or 36-75VDC and features 1600VDC of isolation, short-circuit and over-voltage protection.

Table of Contents

Absolute Maximum Rating				
Parameter	**Model**	**Min**	**Max**	**Unit**
Input Voltage				
Continuous	12Sxx		18	
	24Sxx		36	
	48Sxx		75	Vdc
Transient (100ms)	12Sxx		36	
	24Sxx		50	
	48Sxx		100	
Operating Ambient Temperature (with derating)	All	-40	85	°C
Operating Case Temperature	All		100	°C
Storage Temperature	All	-55	105	°C

Output Specification					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Output Voltage	xxS1P5	1.485	1.5	1.515	
(Vin = Vin(nom) ; Full Load ; TA=25°C)	xxS1P8	1.782	1.8	1.818	
	xxS2P5	2.475	2.5	2.525	
	xxS3P3	3.267	3.3	3.333	Vdc
	xxS05	4.95	5	5.05	
	xxS12	11.88	12	12.12	
	xxS15	14.85	15	15.15	
Voltage Adjustability	All	-10		+10	%
Output Regulation					
Line (Vin(min) to Vin(max) at Full Load)	All	-0.5		+0.5	%
Load (Min. to 100% of Full Load)		-0.5		+0.5	
Output Ripple & Noise	xxS1P5		50		
Peak-to-Peak (20MHz bandwidth)	xxS1P8		50		
(Measured with a 0.1µF/50V MLCC)	xxS2P5		50		
	xxS3P3		50		mVp-p
	xxS05		50		
	xxS12		75		
	xxS15		75		
Temperature Coefficient	All	-0.02		+0.02	%/°C
Output Voltage Overshoot	All		0	3	% Vo
(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	All		250		mV
Peak Deviation					
Setting Time (V$_{OUT}$- 10% peak deviation)	All		250		µS
Output Current	xxS1P5	0		8000	
	xxS1P8	0		8000	
	xxS2P5	0		8000	
	xxS3P3	0		8000	mA
	xxS05	0		8000	
	xxS12	0		3333	
	xxS15	0		2666	

Output Specification(Continued)					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Output Over Voltage Protection	xxS1P5		3.9		
(Zener diode clamp)	xxS1P8		3.9		
	xxS2P5		3.9		
	xxS3P3		3.9		Vdc
	xxS05		6.2		
	xxS12		15		
	xxS15		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	12Sxx	9	12	18	
	24Sxx	18	24	36	Vdc
	48Sxx	36	48	75	
Input Current	12S1P5			1250	
(Maximum value at Vin = Vin(nom); Full Load)	12S1P8			1538	
	12S2P5			2083	
	12S3P3			2683	
	12S05			4065	
	12S12			4065	
	12S15			4015	
	24S1P5			649	
	24S1P8			759	
	24S2P5			1016	
	24S3P3			1325	mA
	24S05			1961	
	24S12			2048	
	24S15			1985	
	48S1P5			321	
	48S1P8			375	
	48S2P5			508	
	48S3P3			655	
	48S05			969	
	48S12			1000	
	48S15			992	

Input Specification (Continued)					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Input Standby Current (Typical value at Vin = Vin(nom); No Load)	12S1P5		110		mA
	12S1P8		110		
	12S2P5		110		
	12S3P3		175		
	12S05		225		
	12S12		255		
	12S15		310		
	24S1P5		40		
	24S1P8		40		
	24S2P5		40		
	24S3P3		60		
	24S05		80		
	24S12		70		
	24S15		85		
	48S1P5		25		
	48S1P8		25		
	48S2P5		25		
	48S3P3		35		
	48S05		40		
	48S12		50		
	48S15		50		
Under Voltage Lockout Turn-on Threshold	12Sxx			9	Vdc
	24Sxx			17.8	
	48Sxx			36	
Under Voltage Lockout Turn-off Threshold	12Sxx		8		Vdc
	24Sxx		16		
	48Sxx		34		
Input Reflected Ripple Current (5 to 20MHz, 12μH Source Impedance)	All		40		mAp-p

Start Up Time
(Vin = Vin(nom) and Constant Resistive Load)
    Power Up
    Remote ON/OFF
	All			25
				25
					mS

Remote ON/OFF Control (The ON/OFF pin voltage is referenced to -V$_{IN}$) Positive Logic DC-DC ON DC-DC OFF	All	3.5 0		12 1.2	Vdc
Remote Off Input Current	All		2.5		mA
Input Current of Remote Control Pin	All	-0.5		0.5	mA

General Specification					
Parameter	**Model**	**Min**	**Typ**	**Max**	**Unit**
Efficiency	12S1P5		84		
(Vin = Vin(nom) ; Full Load ; TA=25℃)	12S1P8		82		
	12S2P5		84		
	12S3P3		86		
	12S05		86		
	12S12		86		
	12S15		87		
	24S1P5		81		
	24S1P8		83		
	24S2P5		86		
	24S3P3		87		%
	24S05		89		
	24S12		88		
	24S15		89		
	48S1P5		82		
	48S1P8		84		
	48S2P5		86		
	48S3P3		88		
	48S05		90		
	48S12		89		
	48S15		89		
Isolation Voltage					
Input to Output	All	1600			Vdc
Input to Case, Output to Case		1600			
Isolation Resistance	All	1			GΩ
Isolation Capacitance	All			1000	pF
Switching Frequency	All		300		KHz
Weight	All		60		g
MTBF					
Bellcore TR-NWT-000332, TC=40℃	All		1.398×10^6		hours
MIL-HDBK-217F			3.585×10^5		
Over Temperature Protection	All		115		℃

Characteristic Curves

All test conditions are at 25°C.The figures are identical for PXF40-12S1P5   **PRODUCT NOT AVAILABLE**
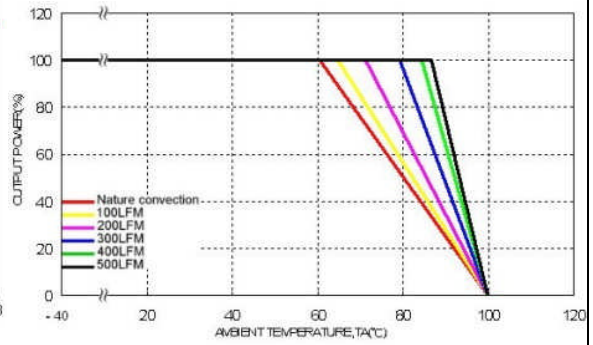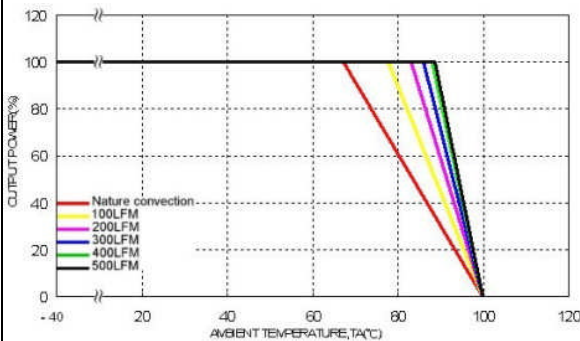
Efficiency Versus Output Current

Power Dissipation Versus Output Current

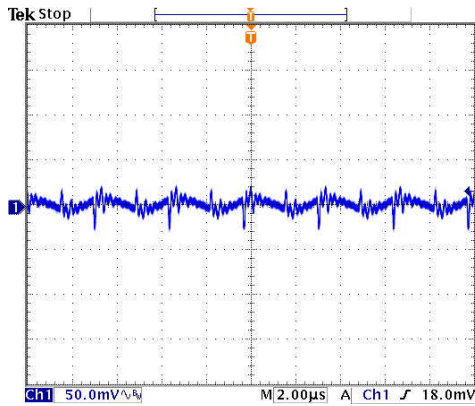**Efficiency Versus Input Voltage. Full Load**

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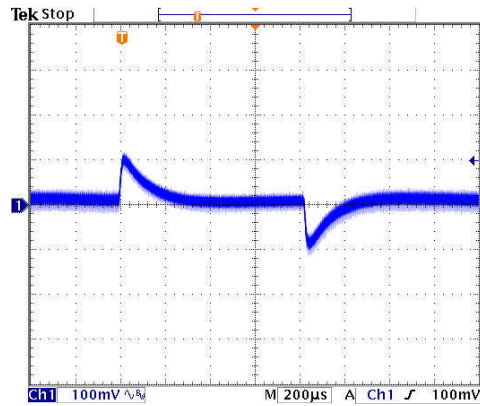
Vin = Vin(nom)

Derating Output Current Versus Ambient Temperature with Heat-Sink

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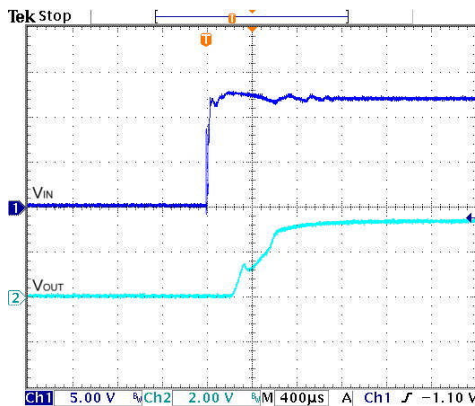
Characteristic Curves (Continued)

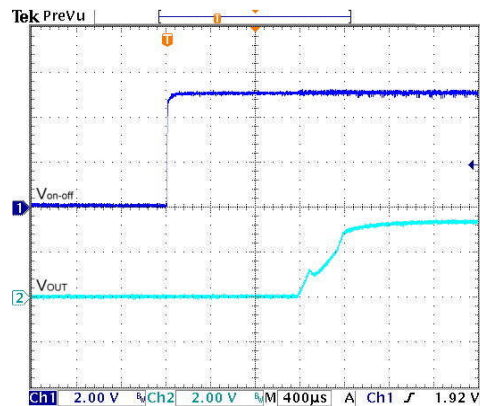All test conditions are at 25°C.The figures are identical for PXF40-12S1P5   **PRODUCT NOT AVAILABLE**

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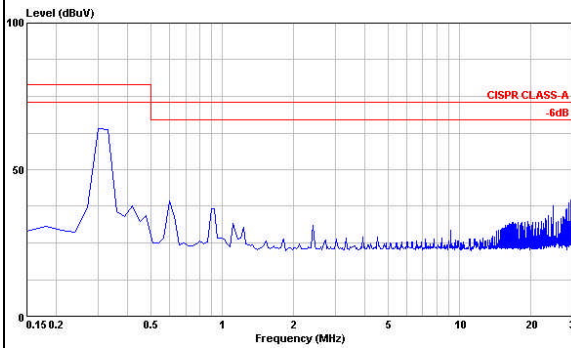
Vin = Vin(nom), Full Load

Transient Response to Dynamic Load Change from

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

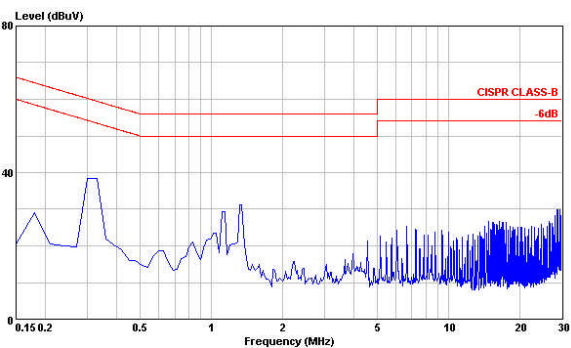**Typical Input Start-Up and Output Rise Characteristic**

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
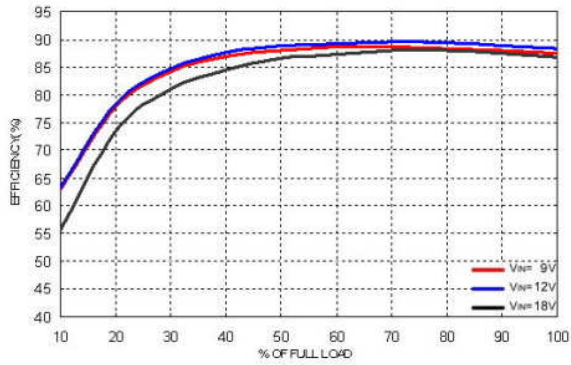
Vin = Vin(nom), Full Load

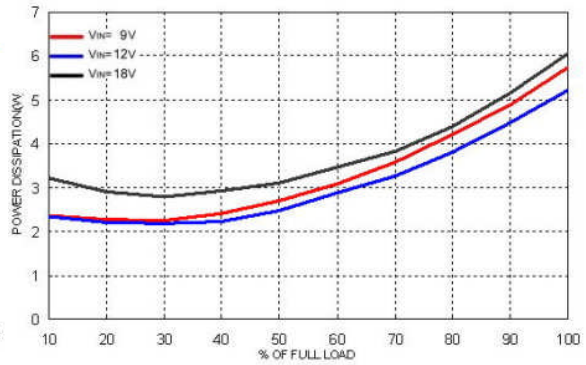**Conduction Emission of EN55022 Class B**
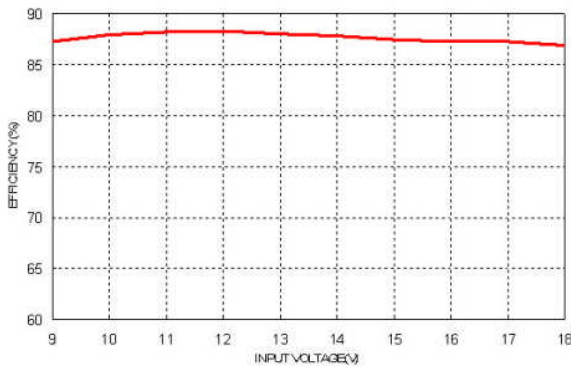
Vin = Vin(nom), Full Load

Characteristic Curves (Continued)

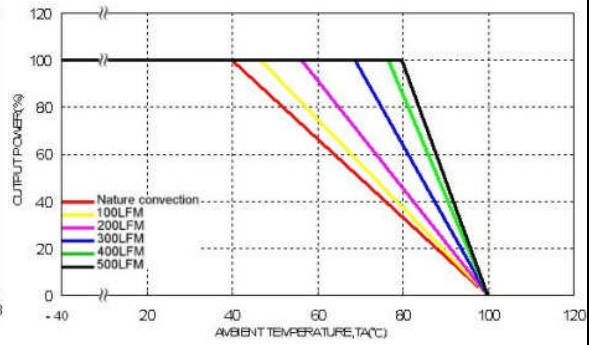All test conditions are at 25°C.The figures are identical for PXF40-12S1P8   **PRODUCT NOT AVAILABLE**
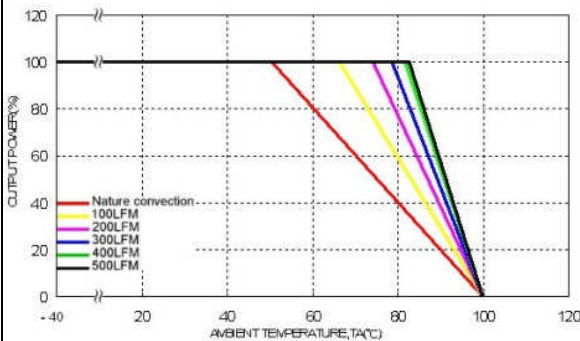
Efficiency Versus Output Current

Power Dissipation Versus Output Current
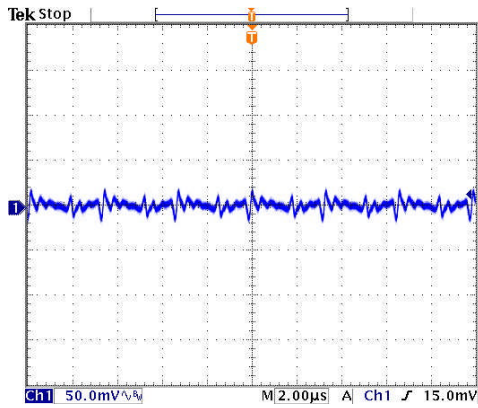
Efficiency Versus Input Voltage. Full Load

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 identical for PXF40-12S1P8   **PRODUCT NOT AVAILABLE**

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 identical for PXF40-12S2P5

Efficiency Versus Output Current

Power Dissipation Versus Output Current

Efficiency Versus Input Voltage. Full Load

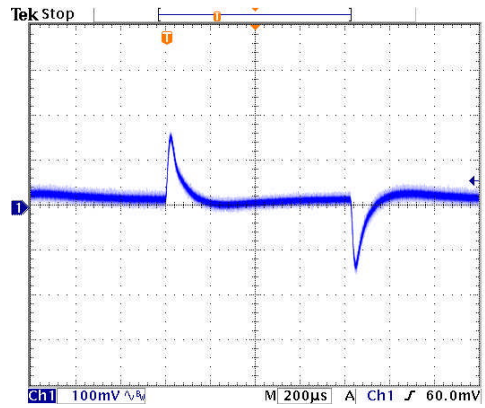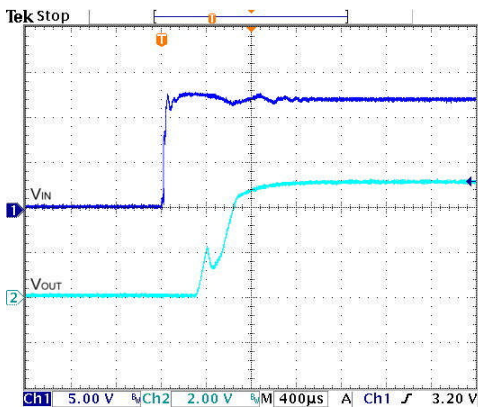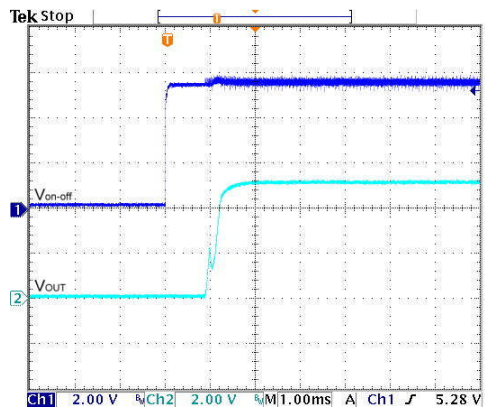**Derating Output Current Versus Ambient Temperature and Airflow Vin=Vin(nom)**

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

DataSheet

Characteristic Curves (Continued)

All test conditions are at 25°C. The figures are identical for PXF40-12S2P5
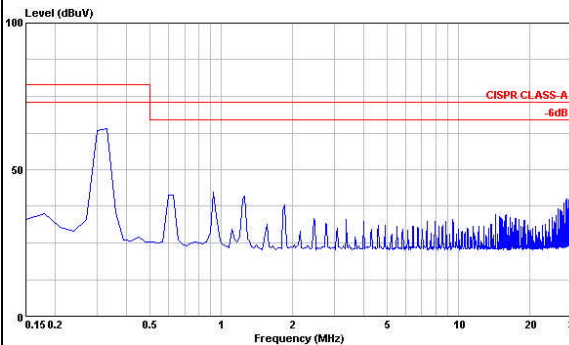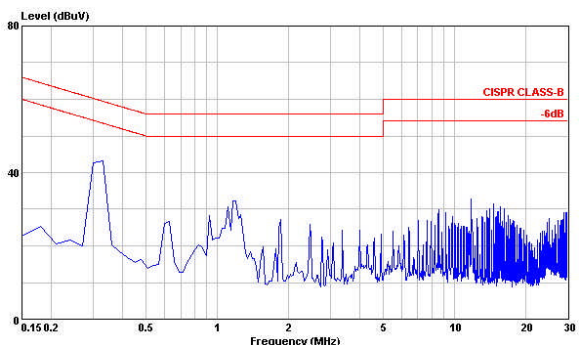

Typical Output Ripple and Noise.

Vin=Vin(nom), Full Load

Transient Response to Dynamic Load Change from

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

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

Vin=Vin(nom), Full Load

Typical Input Start-Up and Output Rise Characteristic

Vin=Vin(nom), Full Load

Conduction Emission of EN55022 Class A

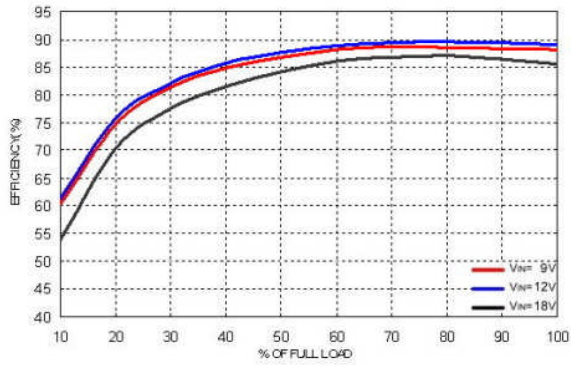**Vin=Vin(nom), Full Load**

Conduction Emission of EN55022 Class B
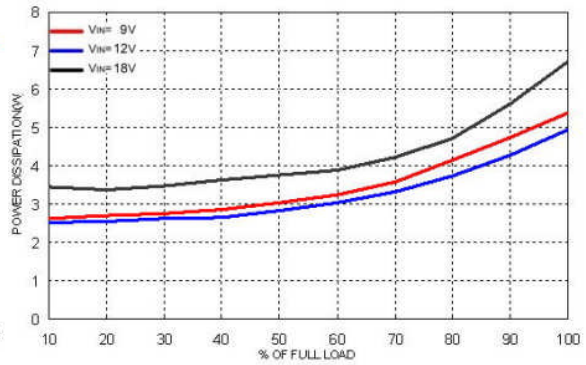
Vin=Vin(nom), Full Load
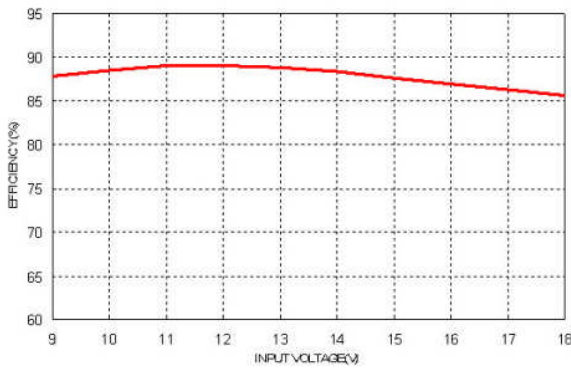
Characteristic Curves (Continued)

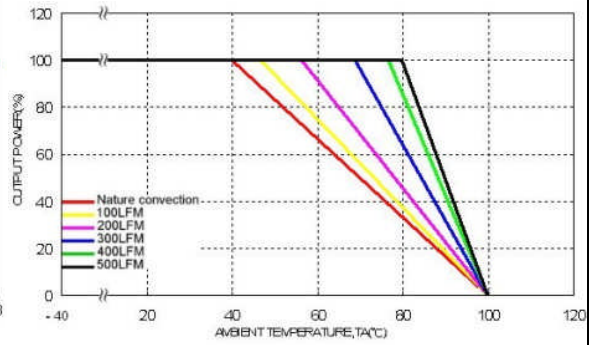All test conditions are at 25°C.The figures are identical for PXF40-12S3P3
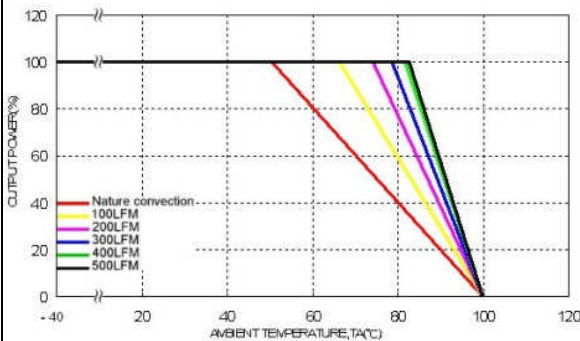
Efficiency Versus Output Current

Power Dissipation Versus Output Current

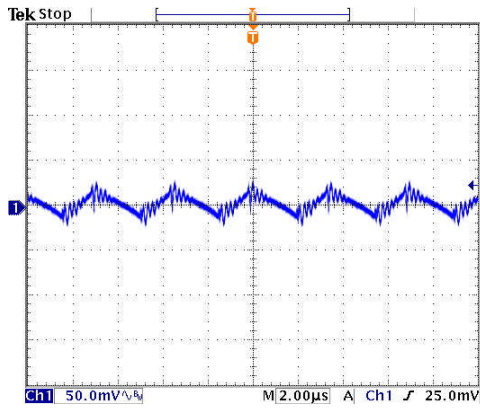**Efficiency Versus Input Voltage. Full Load**

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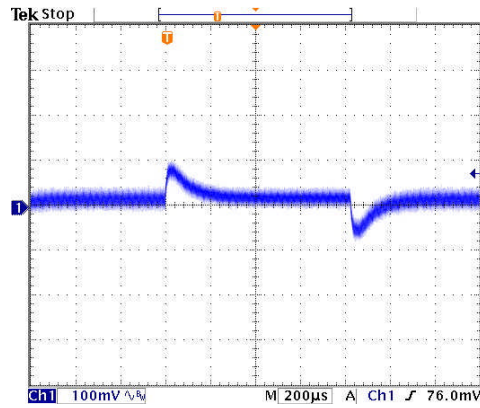
Derating Output Current Versus Ambient Temperature with Heat-Sink and Airflow, Vin = Vin(nom)
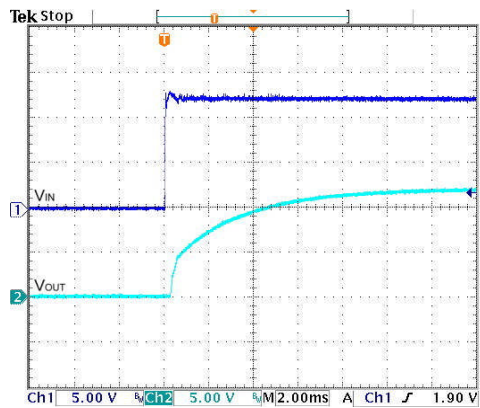
Characteristic Curves (Continued)

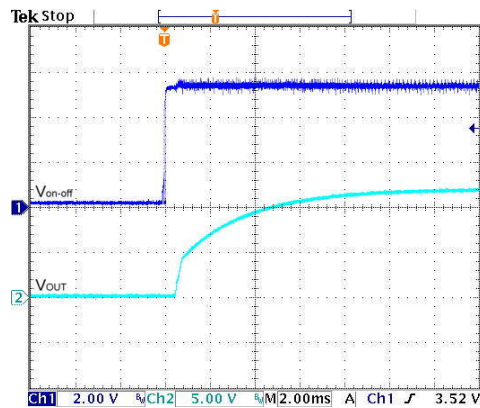All test conditions are at 25°C.The figures are identical for PXF40-12S3P3

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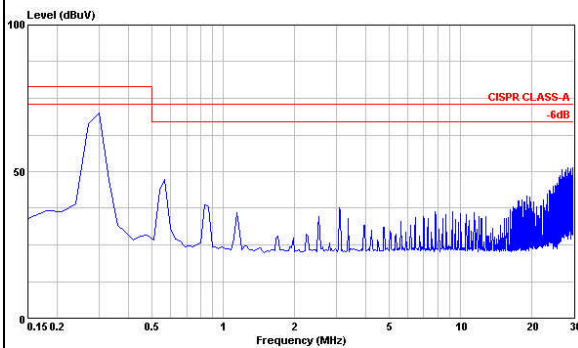
Vin=Vin(nom), Full Load

Transient Response to Dynamic Load Change from

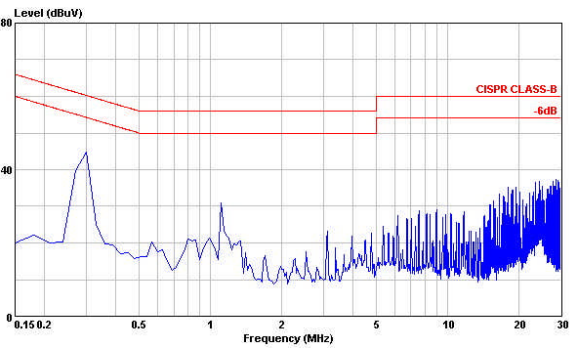**100% to 75% to 100% of Full Load ; Vin=Vin(nom)**

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 identical for PXF40-12S05

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 identical for PXF40-12S05

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

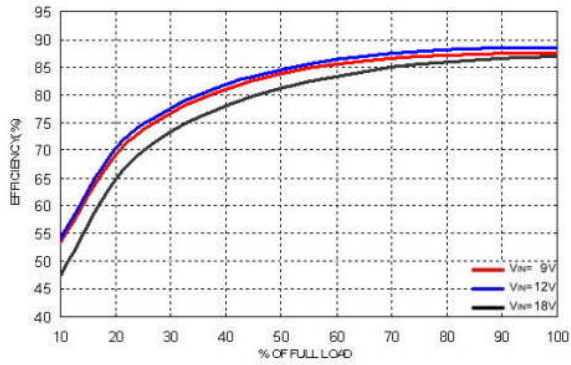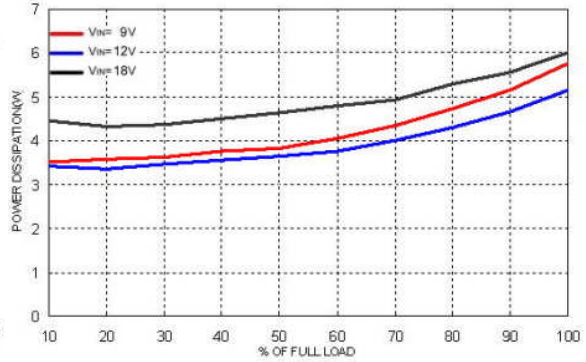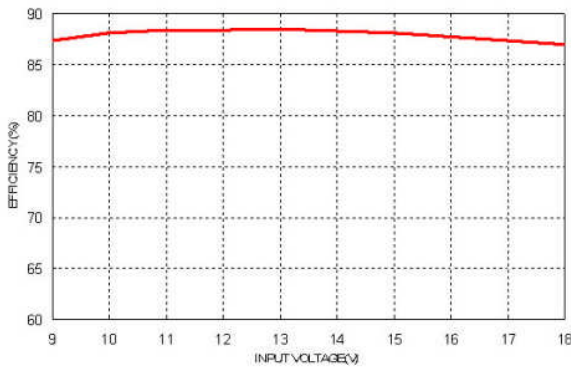**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

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)

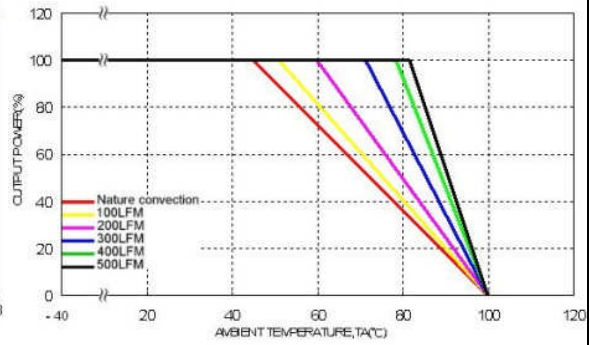All test conditions are at 25°C.The figures are identical for PXF40-12S12
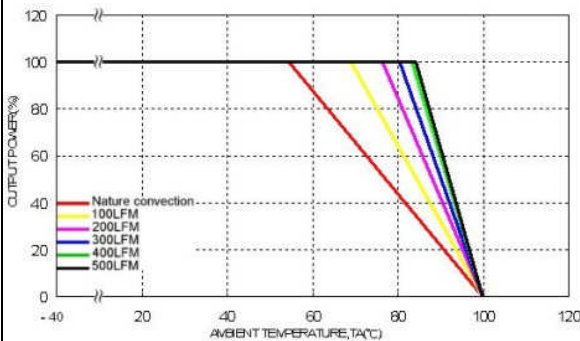
Efficiency Versus Output Current

Power Dissipation Versus Output Current

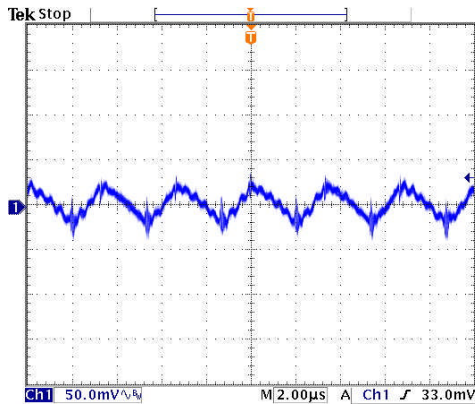**Efficiency Versus Input Voltage. Full Load**

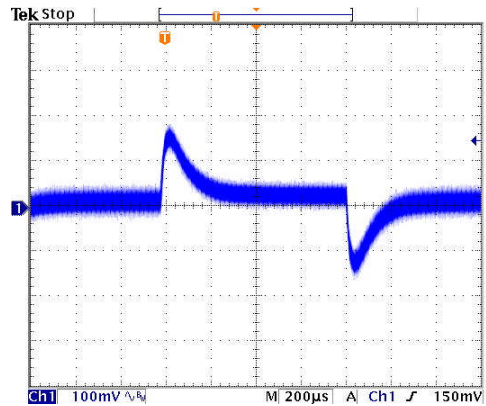**Derating Output Current Versus Ambient Temperature and Airflow Vin=Vin(nom)**

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

DataSheet

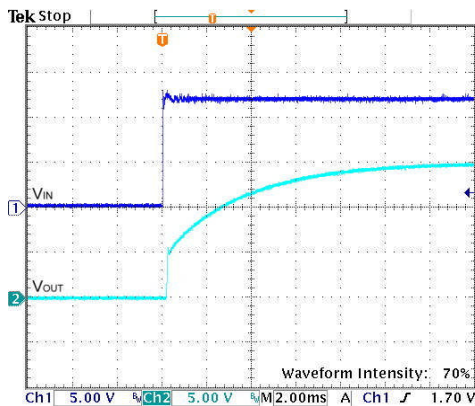## Characteristic Curves (Continued)

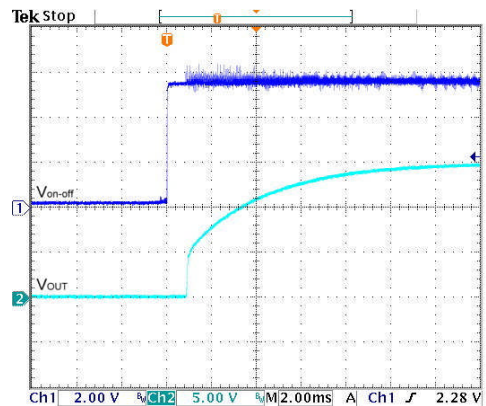All test conditions are at 25°C. The figures are identical for PXF40-12S12

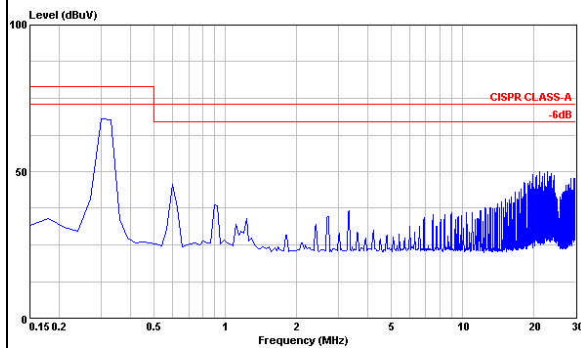**Typical Output Ripple and Noise.**

Vin=Vin(nom), Full Load

Transient Response to Dynamic Load Change from

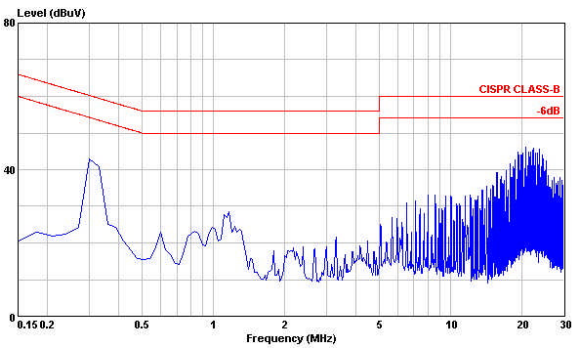**100% to 75% to 100% of Full Load ; Vin=Vin(nom)**

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 identical for PXF40-12S15

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 identical for PXF40-12S15

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

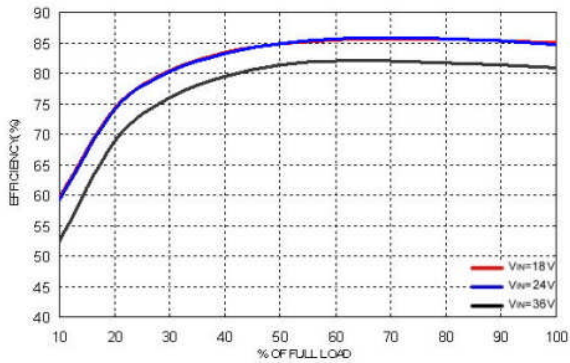**Using ON/OFF Voltage Start-Up and Vo Rise Characteristic**

Vin=Vin(nom), Full Load

Conduction Emission of EN55022 Class A

Vin=Vin(nom), Full Load

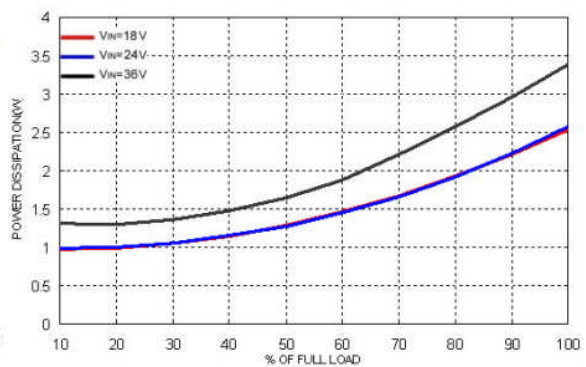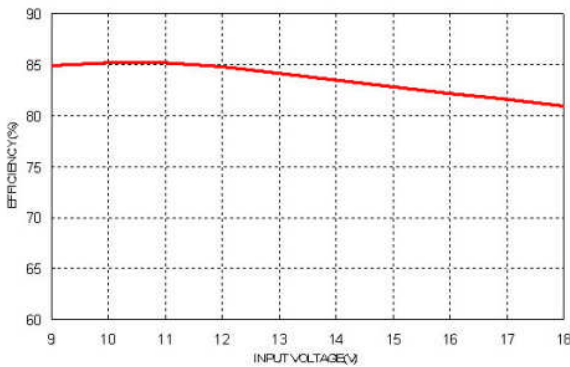**Conduction Emission of EN55022 Class B**

Vin=Vin(nom), Full Load

Characteristic Curves (Continued)

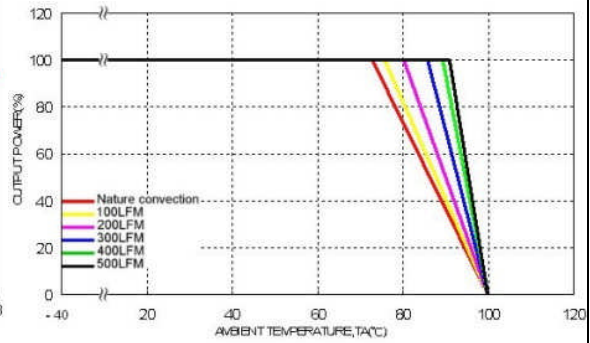All test conditions are at 25°C.The figures are identical for PXF40-24S1P5 **PRODUCT NOT AVAILABLE**

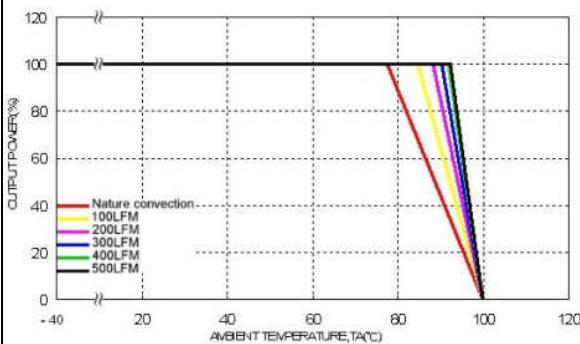**Efficiency Versus Output Current**

Power Dissipation Versus Output Current

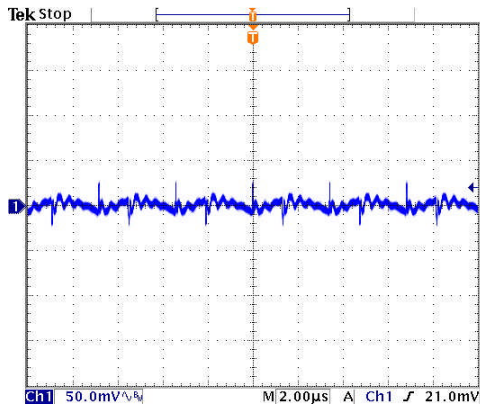**Efficiency Versus Input Voltage. Full Load**

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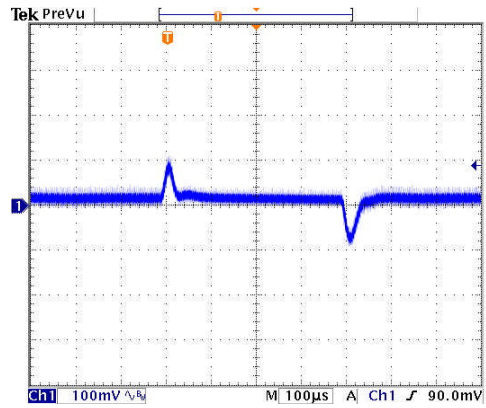**Vin=Vin(nom)**

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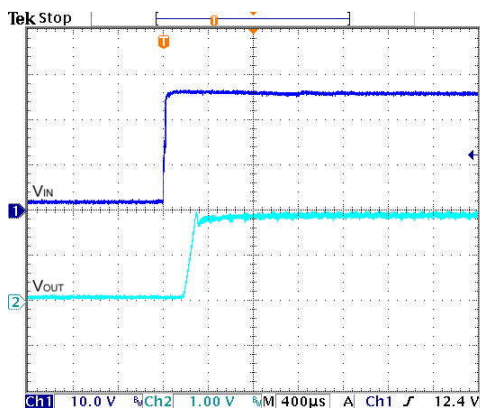
Characteristic Curves (Continued)

All test conditions are at 25°C.The figures are identical for PXF40-24S1P5 **PRODUCT NOT AVAILABLE**
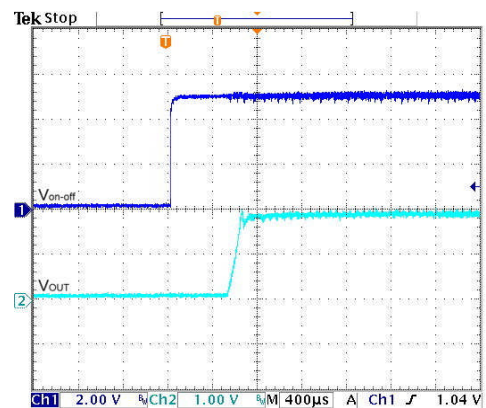
Typical Output Ripple and Noise.
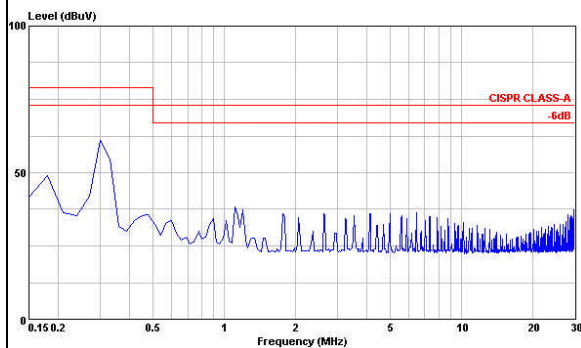
Vin=Vin(nom), Full Load

Transient Response to Dynamic Load Change from

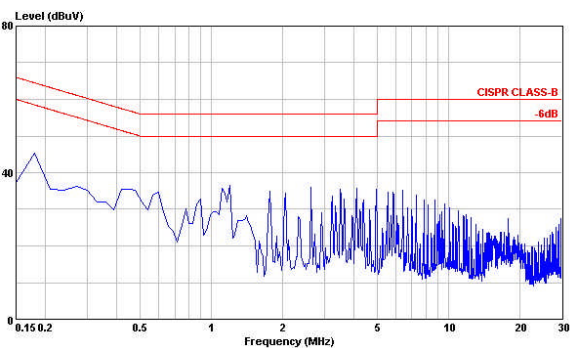**100% to 75% to 100% of Full Load ; Vin=Vin(nom)**

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

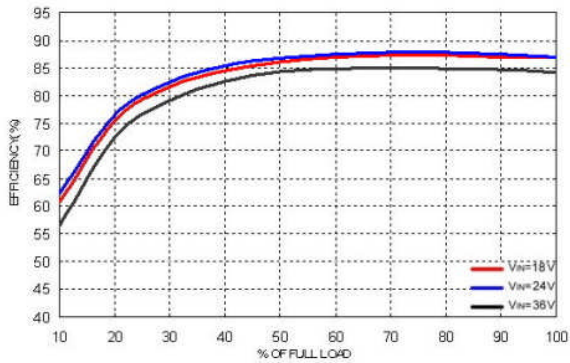**Vin=Vin(nom), Full Load**

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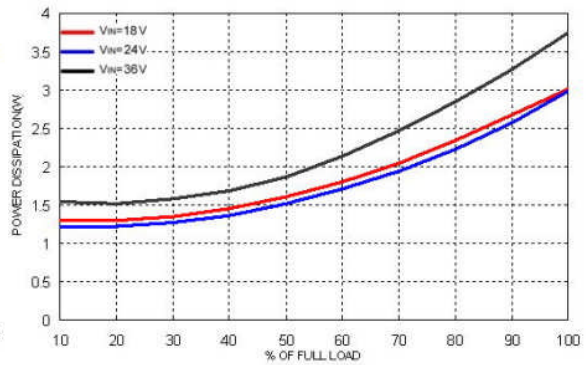
Vin=Vin(nom), Full Load

Characteristic Curves (Continued)
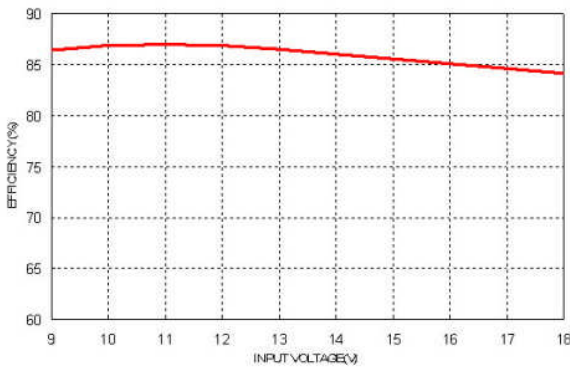
All test conditions are at 25°C.The figures are identical for PXF40-24S1P8

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 identical for PXF40-24S1P8

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)

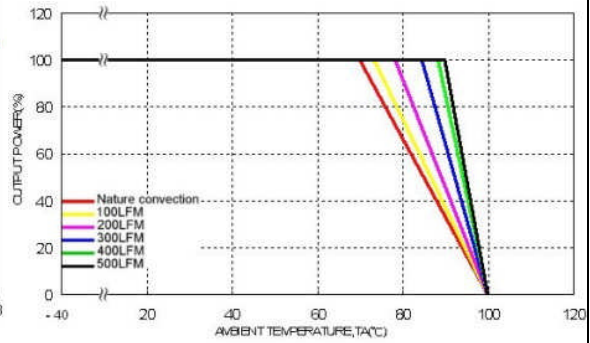All test conditions are at 25°C.The figures are identical for PXF40-24S2P5

Efficiency Versus Output Current
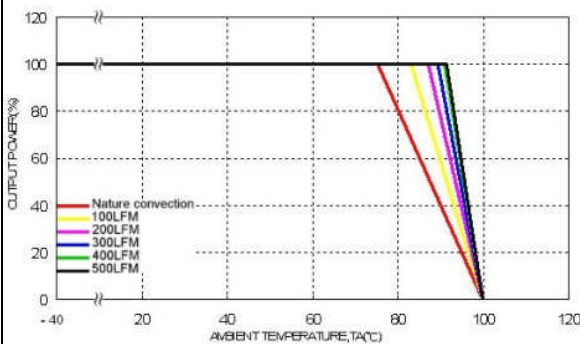

Power Dissipation Versus Output Current

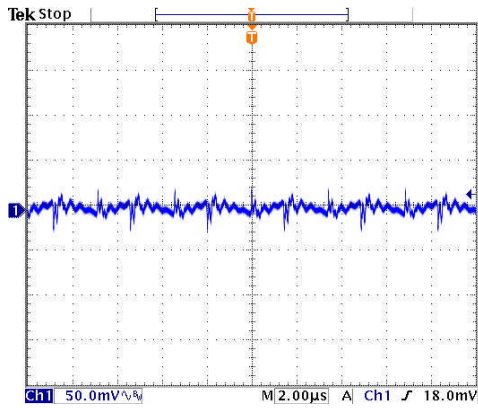**Efficiency Versus Input Voltage. Full Load**

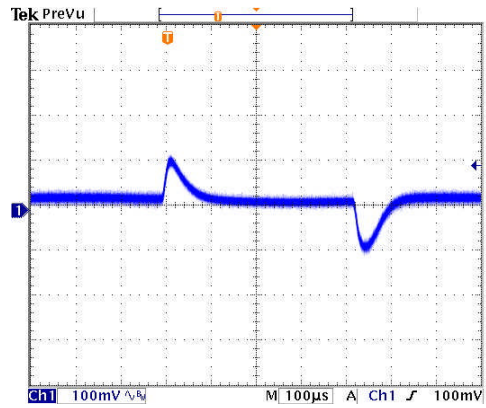**Derating Output Current Versus Ambient Temperature and Airflow Vin=Vin(nom)**

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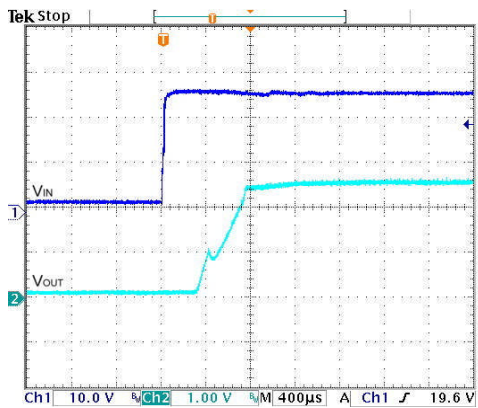
Characteristic Curves (Continued)

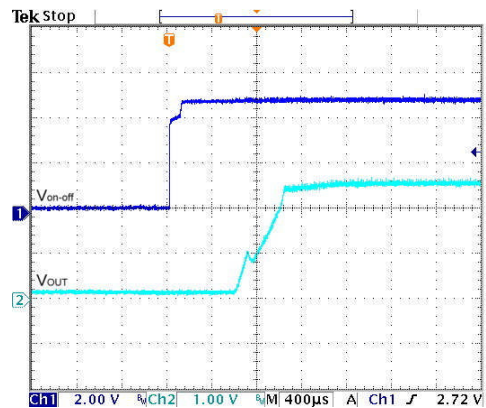All test conditions are at 25°C.The figures are identical for PXF40-24S2P5

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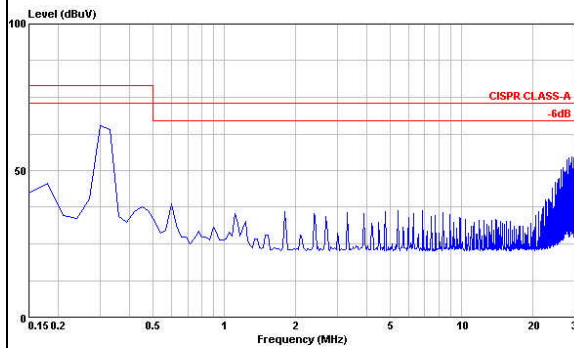
Vin=Vin(nom), Full Load

Transient Response to Dynamic Load Change from

100% to 75% to 100% of Full Load ; Vin=Vin(nom)
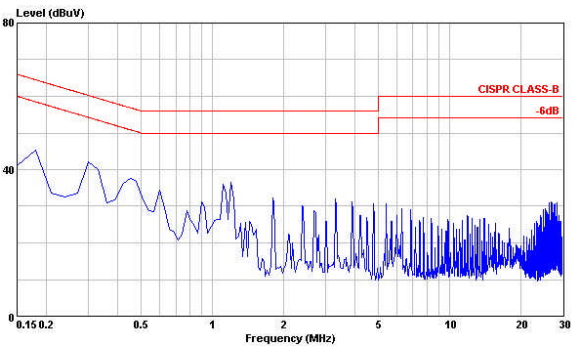
Typical Input Start-Up and Output Rise Characteristic

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