

# EXQ125 48V SERIES

## Single Output

Embedded Power for  
Business-Critical Continuity

## EXQ125 48V SERIES

Total Power: 100 W  
Input Voltage: 33 - 75 VDC  
# of Outputs: Single

### Special Features

- High efficiency topology, 91% typical at 3.3 V, 92% typical at 5 V
- High output current, high useable power
- Industry standard footprint
- Wide operating temperature, -40 °C to +100 °C (baseplate temperature)
- 90% to 110% output trim
- No minimum load
- Overvoltage protection
- Remote ON/OFF
- Approvals to EN60950 (TÜV Rheinland) and UL/cUL1950
- Complies with ETS 300 019-1 3/2-3
- Complies with ETS 300 132-2 (input voltage and current requirements)
- Complies with ETS 300 386-1
- Available RoHS compliant
- 2 year warranty



Rev.10.17.07  
exq125 48v series  
1 of 36

### NOTICE SOME MODELS LISTED IN THIS DOCUMENT HAVE BEEN DISCONTINUED

Please contact your local Artesyn representative or use the on line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

The EXQ125 is a new high efficiency, open frame, isolated 100 Watt converter series in an industry standard quarter-brick footprint. The EXQ125 delivers very high output current at low voltages, and excellent useable output power for today's high-end applications. The design takes advantage of open-frame construction to provide a low mass, low thermal impedance baseplate design. The simplicity of the baseplate design enables customers to easily manage cooling of the product, eliminating the guesswork associated with competing products. The seven models in the series feature an input voltage range of 33 Vdc to 75 Vdc and are available in output voltages of 12 V, 5 V, 3.3 V, 2.5 V, 1.8 V, 1.5 V and 1.2 V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 91% for the 3.3 V, 90% for the 2.5 V, and 88% for the 1.8 V version. The EXQ125 series also has a remote ON/OFF capability. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 (TÜV Rheinland) and cUL1950, the EXQ125 reduces compliance costs and time to market.

**ARTESYN®**

**EMERSON**  
Network Power

Stresses in excess of the maximum ratings can cause permanent damage to the device. Operation of the device is not implied at these or any other conditions in excess of those given in the specification. Exposure to absolute maximum ratings can adversely affect device reliability.

Absolute Maximum Ratings						
Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input voltage - continuous	V <sub>in</sub> (cont)	-0.3		75	Vdc	V <sub>in</sub> (+) - V <sub>in</sub> (-)
Input voltage - peak/surge	V <sub>in</sub> (peak)	-0.3		100	Vdc	Peaks of any duration, converter OFF above 80 V, non-latching, unit ON once V <sub>in</sub> < 75 V
Input voltage - remote pin	V <sub>rrem</sub> (peak)	-0.3		75	Vdc	Peaks of any duration
Operating temperature	T <sub>op</sub>	-40		100	°C	Measured at baseplate
Storage temperature	T <sub>storage</sub>	-40		125	°C	
Output power (12 V)	P <sub>out</sub> (max)			100	W	
Output power (5 V)	P <sub>out</sub> (max)			100	W	
Output power (3.3 V)	P <sub>out</sub> (max)			82.5	W	
Output power (2.5 V)	P <sub>out</sub> (max)			75	W	
Output power (1.8 V)	P <sub>out</sub> (max)			54	W	
Output power (1.5 V)	P <sub>out</sub> (max)			45	W	
Output power (1.2 V)	P <sub>out</sub> (max)			36	W	

All specifications are typical at nominal input Vin = 48 V, full rated load at 25 °C unless otherwise specified.

Input Characteristics						
Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input voltage - operating	V <sub>in</sub> (oper)	33	48	75	Vdc	
Input current - no load (1.2 V)	I <sub>in</sub>		35	60	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (1.5 V)	I <sub>in</sub>		45	65	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (1.8 V)	I <sub>in</sub>		60	70	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (2.5 V)	I <sub>in</sub>		60	75	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (3.3 V)	I <sub>in</sub>		65	80	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (5 V)	I <sub>in</sub>		70	88	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - no load (12 V)	I <sub>in</sub>		65	85	mAdc	V <sub>in</sub> (min) - V <sub>in</sub> (max), enabled
Input current - Quiescent	I <sub>in</sub> (off)		13	20	m Adc	Converter disabled
Input voltage variation	dv/dt			5	V/ms	Complies with ETS300 132 Part 4.4
Inrush current ( $i^2t$ )	I <sub>inrush</sub>		0.022		A <sup>2</sup> s	Complies with ETS300 132 Part 4.7, with recommended LISN and recommended external bypass capacitor
Inrush current ratio	I <sub>t</sub> /I <sub>m</sub>		11.7			Complies with ETS300 132 Part 4.7, with recommended LISN and recommended external bypass capacitor
Input ripple rejection			50		dB	Frequency < 1 kHz
Input fuse				5	A	Slow Blow/Antisurge HRC recommended 200 V Rating. See Application Note 118

### Turn On/Off

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input voltage - turn on	V <sub>in</sub> (on)	30	32.5	34	Vdc	
Input voltage - turn off	V <sub>in</sub> (off)	29	30.5	33	Vdc	
Hysteresis			2.5		Vdc	
Turn on delay - enabled, then power applied	T <sub>delay</sub> (power)		6	10	ms	With the Remote ON/OFF signal asserted, time from when V <sub>in</sub> > V <sub>in</sub> (oper) until V <sub>out</sub> is within total regulation band
Turn on delay - power applied, then enabled	T <sub>delay</sub> (enable)		2	5	ms	With V <sub>in</sub> = V <sub>in</sub> (nom), then Remote ON/OFF asserted, time until V <sub>o</sub> is within total error band
Rise time	T <sub>rise</sub>		1	2	ms	From 10% to 90%, full resistive load, no external capacitance

**Signal Electrical Interface**

Characteristic - Signal Name	Symbol	Min	Typ	Max	Units	Notes and Conditions
At Remote ON/OFF pin Open collector or equivalent compatible						See Notes 1 and 2
Control pin open circuit voltage	V <sub>ih</sub>		4.5	5.0	V	I <sub>ih</sub> = 0 µA; open circuit voltage
High level input voltage	V <sub>ih</sub>	4.0			V	Converter guaranteed ON when control pin is greater than V <sub>ih</sub> (min)
High level input current	I <sub>ih</sub>			10	µA	Current flowing into control pin when pin is pulled high (max. at V <sub>ih</sub> = 75 V)
Acceptable high level leakage current	I <sub>ih</sub> (leakage)			-10	µA	Acceptable leakage current from signal pin into the open collector driver (neg = from converter)
Low level input voltage	V <sub>il</sub>	-0.3		1.2	V	Converter guaranteed off when control pin is less than V <sub>il</sub> (max)
Low level input current	I <sub>il</sub>		-0.2	-0.4	mA	V <sub>il</sub> = 0.4 V
Low level input current	I <sub>il</sub> (max)		-0.2	-0.4	mA	V <sub>il</sub> = 0.0 V, maximum source current from converter with short circuit

**Common Protection/Control**

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overtemperature shutdown threshold	T <sub>ots</sub>	110	115	120	°C	Baseplate temperature, non-latching shutdown protection
Overtemperature shutdown - restart hysteresis			5		°C	
Remote sense compensation				10	%	% of V <sub>o</sub> (nom), compensation includes trim. See Application Note 118

**Reliability and Service Life**

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Mean time between failure	MTBF	2,284,281			Hours	Telcordia SR-332 V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (max); ambient 25 °C; ground benign environment
HALT testing						Completed
Asynchronous dynamic testing						Completed

**Isolation**

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input to output test voltage				1500	Vdc	Test duration 1 s
Input to output capacitance			2000		pF	
Input to output resistance		100			MΩ	
Input to output insulation system			Operational			Measured with 500 Vdc

### Other Specifications

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Switching frequency	f <sub>sw</sub>	340	400	460	kHz	Fixed frequency (all models)
Weight			45	48	g	Statistical weight data available

### Environmental Requirements

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Thermal performance		-40		100	°C	Baseplate temperature
Altitude				3000	m	Derate total max. output current by 20%
				9843	ft	Derate total max. output current by 20%
				10000	m	Derate total max. output current by 50%
				32808	ft	Derate total max. output current by 50%
Type	Parameter	Reference		Test Level		Notes and Conditions
Air temperature	Low	IEC 68-2-1		-40 °C		All characteristics and parameters extracted from ETS 300 019 classes 3.1, 3.2, 3.3, 3.4 and 3.5
	High	IEC 68-2-2		+70 °C		
	Change	IEC 68-2-14		-40 °C to +70 °C		T <sub>max.</sub> = +65 °C for T3.4
Relative humidity	Low			10%		
	High	IEC 68-2-56		100%		
	Condensation	IEC 68-2-30		90% to 100%		
Vibration IEC class 3M5	Freq. velocity	IEC 68-2-6		5-9 Hz 5 mm/s		
	Freq. acceleration	IEC 68-2-6		9-200 Hz 1 g		
Shocks IEC class 3M5	Acceleration	IEC 68-2-29		10 g		

### Referenced ETSI standards:

ETS 300 019: Environmental conditions and environmental tests for telecommunications equipment  
 ETS 300 019: Part 1-3 (1997) Classification of environmental conditions stationary use at weather protected locations  
 ETS 300 019: Part 2-3 (1997) Specification of environmental tests stationary use at weather protected locations

### EMC Electromagnetic Compatibility

Phenomenon	Port	Standard	Test level	Criteria	Notes and conditions
<b>Immunity:</b>					
ESD	Enclosure	EN61000-4-2	6 kV contact 8 kV air	NP RP	As per ETS 300 386-1 table 5
EFT	DC power	EN61000-4-4	2 kV 4 kV	NP LFS	As per ETS 300 386-1 table 5
	Signal	EN61000-4-4	1 kV 2 kV	NP LFS	See Application Note 118 See Application Note 118
Radiated field	Enclosure	EN61000-4-3	10 V/m	NP	As per ETS 300 386-1 table 5
Conducted	Dc power	EN61000-4-6	10 V	NP	As per ETS 300 386-1 table 5
	Signal	EN61000-4-6	10 V	NP	See Application Note 118
Input transients	DC power	ETS 300 132 ETR 283			

## EMC Electromagnetic Compatibility

Phenomenon	Port	Standard	Test level	Criteria	Notes and conditions
Emission:					
Conducted	DC power	EN55022	Level A		With recommended external filter for compliance bandwidth 20 kHz to 30 MHz, as per ETS 300 386-1
			EN55022	Level B	With recommended external filter for compliance bandwidth 20 kHz to 30 MHz, as per ETS 300 386-1
Radiated	Signal	EN55022	TBD		Bandwidth 150 kHz to 30MHz, as per ETS 300 386-1
		EN55022	TBD		Bandwidth 30 MHz to 1 GHz, as per ETS 300 386-1

### Performance criteria:

NP: Normal Performance: EUT shall withstand applied test and operate within relevant limits as specified without damage

RP: Reduced Performance: EUT shall withstand applied test. Reduced performance is permitted within specified limits, resumption to normal performance shall occur at the cessation of the test

LFS: Loss of Function (self recovery): EUT shall withstand applied test without damage, temporary loss of function permitted during test. Unit will self recover to normal performance after test

### Referenced ETSI standards:

ETSI 300 386-1 table 5 (1997): Public telecommunication network equipment, EMC requirements

ETSI 300 132-2 (1996): Power supply interface at the input to telecommunication equipment: Part 2 operated by direct current (dc)

ETR 283 (1997): Transient voltages at interface A on telecommunication direct current (dc) power distributions

## Standards Compliance List

Characteristic	
EN60950	
UL/cUL 1950	3rd edition
TÜV Rheinland	

## Safety Agency Approvals

Standard	Category
UL/cUL 1950 File Number	E135734
TÜV Rheinland Certificate No.	R72050216

## Material Ratings

Characteristic - Signal Name	Notes and Conditions
Flammability rating	UL94V-0
Material type	FR4 PCB, T - LAM IMS - Baseplate

## Model Numbers

Model Number	Input Voltage	Output Voltage	Oversupply Protection	Output Current (Max.)	Typical Efficiency
EXQ125-48S1V2J	33-75 Vdc	1.2 V	1.45 V	30 A	86.5%
EXQ125-48S1V5J	33-75 Vdc	1.5 V	1.8 V	30 A	87.5%
EXQ125-48S1V8J	33-75 Vdc	1.8 V	2.25 V	30 A	88%
EXQ125-48S2V5J	33-75 Vdc	2.5 V	3 V	30 A	90%
EXQ125-48S3V3J	33-75 Vdc	3.3 V	3.9 V	25 A	91%
EXQ125-48S05J	33-75 Vdc	5 V	5.9 V	20 A	92%
EXQ125-48S12J	33-75 Vdc	12 V	14.4 V	8.3 A	93%

## EXQ125-48S1V2J Model

### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	$I_{in}$		0.87	0.89	Adc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$
Input current - maximum	$I_{in}(\text{max.})$		1.28	1.30	Adc	$V_{in} = V_{in}(\text{min})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$ , measured at converter
Input Capacitor ripple current	$I_{in}(\text{ripple})$		50 130		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured without standard filter. See Application Note 118
Reflected ripple current	$I_{in}(\text{refl})$		2 5.5		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured with standard filter. See Application Note 118
Input capacitance - Internal	$C_{input}$	2.4	3	5.4	$\mu\text{F}$	Internal to converter
Input capacitance - External bypass	$C_{bypass}$		33		$\mu\text{F}$	Recommended customer added capacitance <0.7 Ohm ESR

## EXQ125-48S1V2J Model

### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_o(\text{nom})$	1.182	1.200	1.218	Vdc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{nom})$
Total regulation band	$V_o$	1.164		1.236	Vdc	For all line, static load and temperature until end of life.
Line regulation			0.01	0.1	%	$I_{out} = I_{out}(\text{nom})$ , $V_{in}(\text{min})$ to $V_{in}(\text{max})$
Load regulation			0.02	0.2	%	$V_{in} = V_{in}(\text{nom})$ , $I_{out}(\text{min})$ to $I_{out}(\text{max})$
Temperature regulation			0.002	0.02	$\pm\%/\text{ }^{\circ}\text{C}$	$V_{in} = V_{in}(\text{nom})$ , $I_{out} = I_{out}(\text{max})$
Output current continuous	$I_{out}$	0		30	Adc	
Output current - short circuit	$I_{sc}$	32	35	38	A rms	Continuous, unit auto recovers from short, $V_o < 100 \text{ mV}$
Load transient response - peak deviation	$V_{dynamic}/V_o(\text{nom})$		6		%	Peak deviation for 50% to 75% step load, $di/dt = 100 \text{ mA}/\mu\text{s}$ , % of $V_o(\text{nom})$
Load transient response - recovery	$T_{recovery}$		100	150	$\mu\text{s}$	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	$C_{ext}$	0		10,000	$\mu\text{F}$	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	$V_{p-p}$ $V_{rms}$		45 15	60 20	$\text{mV pk-pk}$ $\text{mV rms}$	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S1V2J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	V <sub>ov</sub>	1.35		1.55	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	I <sub>oc</sub>	32	35	38	Adc	V <sub>O</sub> = 90% of V <sub>O</sub> (nom)
Output voltage trim range		90		110	%	Trim up (% of V <sub>O</sub> nom) Trim down (% of V <sub>O</sub> nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		1.15	1.20	1.30	Vdc	

## EXQ125-48S1V2J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	h	85	86.5		%	I <sub>out</sub> = 100% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)
Efficiency	h	85.5	86.5		%	I <sub>out</sub> = 50% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)

### EXQ125-48S1V5J Model

#### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I <sub>in</sub>		1.28	1.31	Adc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom)
Input current - maximum	I <sub>in</sub> (max.)		1.07	1.09	Adc	V <sub>in</sub> = V <sub>in</sub> (min); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom), measured at converter
Input Capacitor ripple current	I <sub>in</sub> (ripple)		70 200		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured without standard filter. See Application Note 118
Reflected ripple current	I <sub>in</sub> (refl)		2 5.5		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured with standard filter. See Application Note 118
Input capacitance - Internal	C <sub>input</sub>	2.4	3	5.4	μF	Internal to converter
Input capacitance - External bypass	C <sub>bypass</sub>		33		μF	Recommended customer added capacitance

### EXQ125-48S1V5J Model

#### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	V <sub>o</sub> (nom)	1.477	1.500	1.523	Vdc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (nom)
Total regulation band	V <sub>o</sub>	1.455		1.545	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	I <sub>out</sub> = I <sub>out</sub> (nom), V <sub>in</sub> (min) to V <sub>in</sub> (max)
Load regulation			0.02	0.2	%	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> (min) to I <sub>out</sub> (max)
Temperature regulation			0.002	0.02	±%/°C	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> = I <sub>out</sub> (max)
Output current continuous	I <sub>out</sub>	0		30	Adc	
Output current - short circuit	I <sub>sc</sub>	32	35	38	A rms	Continuous, unit auto recovers from short, V <sub>o</sub> < 100 mV
Load transient response - peak deviation	V <sub>dynamic</sub> / V <sub>o</sub> (nom)		5		%	Peak deviation for 50% to 75% step load, di/dt = 100 mA/μs, % of V <sub>o</sub> (nom)
Load transient response - recovery	T <sub>recovery</sub>		100	150	μs	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	C <sub>ext</sub>	0		10,000	μF	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	V <sub>p-p</sub> V <sub>rms</sub>		45 15	60 20	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S1V5J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	V <sub>ov</sub>	1.70		1.95	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	I <sub>oc</sub>	32	35	38	Adc	V <sub>O</sub> = 90% of V <sub>O</sub> (nom)
Output voltage trim range		90		110	%	Trim up (% of V <sub>O</sub> nom) Trim down (% of V <sub>O</sub> nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		1.45	1.50	1.55	Vdc	

## EXQ125-48S1V5J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	h	86	87.5		%	I <sub>out</sub> = 100% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)
Efficiency	h	86	87.5		%	I <sub>out</sub> = 50% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)

### EXQ125-48S1V8J Model

#### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I <sub>in</sub>		1.28	1.31	Adc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom)
Input current - maximum	I <sub>in</sub> (max.)		1.89	1.92	Adc	V <sub>in</sub> = V <sub>in</sub> (min); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom), measured at converter
Input Capacitor ripple current	I <sub>in</sub> (ripple)		70 200		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured without standard filter. See Application Note 118
Reflected ripple current	I <sub>in</sub> (refl)		2 5.5		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured with standard filter. See Application Note 118
Input capacitance - Internal	C <sub>input</sub>	2.4	3	5.4	μF	Internal to converter
Input capacitance - External bypass	C <sub>bypass</sub>		33		μF	Recommended customer added capacitance

### EXQ125-48S1V8J Model

#### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	V <sub>o</sub> (nom)	1.773	1.800	1.827	Vdc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (nom)
Total regulation band	V <sub>o</sub>	1.746		1.854	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	I <sub>out</sub> = I <sub>out</sub> (nom), V <sub>in</sub> (min) to V <sub>in</sub> (max)
Load regulation			0.02	0.2	%	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> (min) to I <sub>out</sub> (max)
Temperature regulation			0.002	0.02	±% / °C	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> = I <sub>out</sub> (max)
Output current continuous	I <sub>out</sub>	0		30	Adc	
Output current - short circuit	I <sub>sc</sub>	32	35	38	A rms	Continuous, unit auto recovers from short, V <sub>o</sub> < 100 mV
Load transient response - peak deviation	V <sub>dynamic</sub> / V <sub>o</sub> (nom)		3		%	Peak deviation for 50% to 75% step load, di/dt = 100 mA/μs, % of V <sub>o</sub> (nom)
Load transient response - recovery	T <sub>recovery</sub>		100	150	μs	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	C <sub>ext</sub>	0		10,000	μF	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	V <sub>p-p</sub> V <sub>rms</sub>		45 15	60 20	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S1V8J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	V <sub>ov</sub>	2.0		2.3	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	I <sub>oc</sub>	32	35	38	Adc	V <sub>O</sub> = 90% of V <sub>O</sub> (nom)
Output voltage trim range		90		110	%	Trim up (% of V <sub>O</sub> nom) Trim down (% of V <sub>O</sub> nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		1.77	1.83	1.89	Vdc	

## EXQ125-48S1V8J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	h	86.5	88		%	I <sub>out</sub> = 100% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)
Efficiency	h	87	88		%	I <sub>out</sub> = 50% I <sub>out</sub> (max), V <sub>in</sub> = V <sub>in</sub> (nom)

## EXQ125-48S2V5J Model

### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	$I_{in}$		1.75	1.78	Adc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$
Input current - maximum	$I_{in}(\text{max.})$		2.57	2.60	Adc	$V_{in} = V_{in}(\text{min})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$ (measured at converter)
Input Capacitor ripple current	$I_{in}(\text{ripple})$		90 250		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured without standard filter. See Application Note 118
Reflected ripple current	$I_{in}(\text{refl})$		3 7		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured with standard filter. See Application Note 118
Input capacitance - Internal	$C_{input}$	2.4	3	5.4	$\mu\text{F}$	Internal to converter
Input capacitance - External bypass	$C_{bypass}$		33		$\mu\text{F}$	Recommended customer added capacitance

## EXQ125-48S2V5J Model

### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_o(\text{nom})$	2.462	2.500	2.538	Vdc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{nom})$
Total regulation band	$V_o$	2.425		2.575	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	$I_{out} = I_{out}(\text{nom})$ , $V_{in}(\text{min})$ to $V_{in}(\text{max})$
Load regulation			0.02	0.2	%	$V_{in} = V_{in}(\text{nom})$ , $I_{out}(\text{min})$ to $I_{out}(\text{max})$
Temperature regulation			0.002	0.02	$\pm\%/\text{ }^{\circ}\text{C}$	$V_{in} = V_{in}(\text{nom})$ , $I_{out} = I_{out}(\text{max})$
Output current continuous	$I_{out}$	0		30	Adc	
Output current - short circuit	$I_{sc}$	32	35	38	A rms	Continuous, unit auto recovers from short, $V_o < 100 \text{ mV}$
Load transient response - peak deviation	$V_{dynamic}/V_o(\text{nom})$		2		%	Peak deviation for 50% to 75% step load, $di/dt = 100 \text{ mA}/\mu\text{s}$ , % of $V_o(\text{nom})$
Load transient response - recovery	$T_{recovery}$		100	150	$\mu\text{s}$	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	$C_{ext}$	0		10,000	$\mu\text{F}$	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	$V_{p-p}$ $V_{rms}$		45 15	60 20	$\text{mV pk-pk}$ $\text{mV rms}$	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S2V5J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	$V_{ov}$	2.8		3.1	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	$I_{oc}$	32	35	38	Adc	$V_O = 90\% \text{ of } V_O (\text{nom})$
Output voltage trim range		90		110	%	Trim up (% of $V_O$ nom) Trim down (% of $V_O$ nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		2.50	2.54	2.62	Vdc	

## EXQ125-48S2V5J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	$\eta$	89	90		%	$I_{out} = 100\% I_{out} (\text{max})$ , $V_{in} = V_{in} (\text{nom})$
Efficiency	$\eta$	89	90		%	$I_{out} = 50\% I_{out} (\text{max})$ , $V_{in} = V_{in} (\text{nom})$

### EXQ125-48S3V3J Model

#### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	$I_{in}$		1.89	1.92	Adc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$
Input current - maximum	$I_{in}(\text{max.})$		2.78	2.81	Adc	$V_{in} = V_{in}(\text{min})$ ; $I_{out} = I_{out}(\text{max})$ ; $V_o = V_o(\text{nom})$ (measured at converter)
Input Capacitor ripple current	$I_{in}(\text{ripple})$		90 250		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured without external Pi filter
Reflected ripple current	$I_{in}(\text{refl})$		3 7		mA rms mA pk-pk	$I_{out} = I_{out}(\text{max})$ , measured with standard filter. See Application Note 118
Input capacitance - Internal	$C_{input}$	2.4	3	5.4	$\mu\text{F}$	Internal to converter filter
Input capacitance - External bypass	$C_{bypass}$		33		$\mu\text{F}$	Recommended customer added capacitance

### EXQ125-48S3V3J Model

#### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_o(\text{nom})$	3.250	3.300	3.350	Vdc	$V_{in} = V_{in}(\text{nom})$ ; $I_{out} = I_{out}(\text{nom})$
Total regulation band	$V_o$	3.20		3.40	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	$I_{out} = I_{out}(\text{nom})$ , $V_{in}(\text{min})$ to $V_{in}(\text{max})$
Load regulation			0.02	0.2	%	$V_{in} = V_{in}(\text{nom})$ , $I_{out}(\text{min})$ to $I_{out}(\text{max})$
Temperature regulation			0.002	0.02	$\pm\%/\text{ }^{\circ}\text{C}$	$V_{in} = V_{in}(\text{nom})$ , $I_{out} = I_{out}(\text{max})$
Output current continuous	$I_{out}$	0		30	Adc	
Output current - short circuit	$I_{sc}$	27	29	32	A rms	Continuous, unit auto recovers from short, $V_o < 100 \text{ mV}$
Load transient response - peak deviation	$V_{dynamic}/V_o(\text{nom})$		2		%	Peak deviation for 50% to 75% step load, $di/dt = 100 \text{ mA}/\mu\text{s}$ , % of $V_o(\text{nom})$
Load transient response - recovery	$T_{recovery}$		100	150	$\mu\text{s}$	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	$C_{ext}$	0		10,000	$\mu\text{F}$	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	$V_{p-p}$ $V_{rms}$		45 15	60 20	$\text{mV pk-pk}$ $\text{mV rms}$	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

### EXQ125-48S3V3J Model

#### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	$V_{ov}$	3.65		4.10	Vdc	Non-latching. See Application Note for details
Overcurrent limit inception	$I_{oc}$	27	28.5	32	Adc	$V_o = 90\% \text{ of } V_{o(\text{nom})}$
Output voltage trim range		90		110	%	Trim up (% of $V_{o(\text{nom})}$ ) Trim down (% of $V_{o(\text{nom})}$ ) See Application Note for details of trim equations and trim curves
Open sense voltage		3.30	3.38	3.45	Vdc	

### EXQ125-48S3V3J Model

#### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	$\eta$	90	91		%	$I_{out} = 100\% I_{out(\text{max})}$ , $V_{in} = V_{in(\text{nom})}$
Efficiency	$\eta$	90	91		%	$I_{out} = 50\% I_{out(\text{max})}$ , $V_{in} = V_{in(\text{nom})}$

### EXQ125-48S05J Model

#### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I <sub>in</sub>		2.27	2.30	Adc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom)
Input current - maximum	I <sub>in</sub> (max.)		3.34	3.38	Adc	V <sub>in</sub> = V <sub>in</sub> (min); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom), measured at converter
Input Capacitor ripple current	I <sub>in</sub> (ripple)		150 500		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured without standard filter. See Application Note 118
Reflected ripple current	I <sub>in</sub> (refl)		4 8		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured with standard filter. See Application Note 118
Input capacitance - Internal	C <sub>input</sub>	2.4	3	5.4	μF	Internal to converter
Input capacitance - External bypass	C <sub>bypass</sub>		33		μF	Recommended customer added capacitance

### EXQ125-48S05J Model

#### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	V <sub>o</sub> (nom)	4.925	5.000	5.075	Vdc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (nom)
Total regulation band	V <sub>o</sub>	4.850		5.150	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	I <sub>out</sub> = I <sub>out</sub> (nom), V <sub>in</sub> (min) to V <sub>in</sub> (max)
Load regulation			0.02	0.2	%	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> (min) to I <sub>out</sub> (max)
Temperature regulation			0.002	0.02	±%/°C	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> = I <sub>out</sub> (max)
Output current continuous	I <sub>out</sub>	0		20	Adc	
Output current - short circuit	I <sub>sc</sub>	22	24	26	A rms	Continuous, unit auto recovers from short, V <sub>o</sub> < 100 mV
Load transient response - peak deviation	V <sub>dynamic</sub> / V <sub>o</sub> (nom)		2		%	Peak deviation for 50% to 75% step load, di/dt = 100 mA/μs, % of V <sub>o</sub> (nom)
Load transient response - recovery	T <sub>recovery</sub>		100	150	μs	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	C <sub>ext</sub>	0		2,200	μF	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	V <sub>p-p</sub> V <sub>rms</sub>		45 15	60 20	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S05J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	V <sub>ov</sub>	5.6		6.1	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	I <sub>oc</sub>	22	24	26	Adc	V <sub>O</sub> = 90% of V <sub>O</sub> (nom)
Output voltage trim range		90		110	%	Trim up (% of V <sub>O</sub> nom) Trim down (% of V <sub>O</sub> nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		4.85	5.00	5.25	Vdc	

## EXQ125-48S05J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	h	90.8	92		%	I <sub>out</sub> = 100% I <sub>out</sub> (max); V <sub>in</sub> = V <sub>in</sub> (nom)
Efficiency	h	91	92.2		%	I <sub>out</sub> = 50% I <sub>out</sub> (max); V <sub>in</sub> = V <sub>in</sub> (nom)

## EXQ125-48S12J Model

### Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I <sub>in</sub>		2.23	2.26	Adc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom)
Input current - maximum	I <sub>in</sub> (max.)		3.30	3.33	Adc	V <sub>in</sub> = V <sub>in</sub> (min); I <sub>out</sub> = I <sub>out</sub> (max); V <sub>o</sub> = V <sub>o</sub> (nom), measured at converter
Input Capacitor ripple current	I <sub>in</sub> (ripple)		150 500		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured without standard filter. See Application Note 118
Reflected ripple current	I <sub>in</sub> (refl)		4 8		mA rms mA pk-pk	I <sub>out</sub> = I <sub>out</sub> (max), measured with standard filter. See Application Note 118
Input capacitance - Internal	C <sub>input</sub>	2.4	3	5.4	μF	Internal to converter
Input capacitance - External bypass	C <sub>bypass</sub>		33		μF	Recommended customer added capacitance

## EXQ125-48S12J Model

### Electrical Characteristics - O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	V <sub>o</sub> (nom)	11.82	12	12.18	Vdc	V <sub>in</sub> = V <sub>in</sub> (nom); I <sub>out</sub> = I <sub>out</sub> (nom)
Total regulation band	V <sub>o</sub>	11.64		12.36	Vdc	For all line, static load and temperature until end of life
Line regulation			0.01	0.1	%	I <sub>out</sub> = I <sub>out</sub> (nom), V <sub>in</sub> (min) to V <sub>in</sub> (max)
Load regulation			0.02	0.2	%	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> (min) to I <sub>out</sub> (max)
Temperature regulation			0.002	0.02	±% / °C	V <sub>in</sub> = V <sub>in</sub> (nom), I <sub>out</sub> = I <sub>out</sub> (max)
Output current continuous	I <sub>out</sub>	0		8.3	Adc	
Output current - short circuit	I <sub>sc</sub>	8.8	9.5	11	A rms	Continuous, unit auto recovers from short, V <sub>o</sub> < 100 mV
Load transient response - peak deviation	V <sub>dynamic</sub> / V <sub>o</sub> (nom)		2		%	Peak deviation for 50% to 75% step load, di/dt = 100 mA/μs, % of V <sub>o</sub> (nom)
Load transient response - recovery	T <sub>recovery</sub>		100	150	μs	Settling time to within 1% of output set point voltage for 50% to 75% load step
External load capacitance	C <sub>ext</sub>	0		1,000	μF	Higher load capacitance values may be possible. Contact Artesyn Technologies for details
Output voltage - noise	V <sub>p-p</sub> V <sub>rms</sub>		60 20	100 30	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 118 for test set-up

## EXQ125-48S12J Model

### Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overvoltage clamp voltage	V <sub>ov</sub>	13.5		14.6	Vdc	Non-latching. See Application Note 118 for details
Overcurrent limit inception	I <sub>oc</sub>	8.8	9.5	11	Adc	V <sub>O</sub> = 90% of V <sub>O</sub> (nom)
Output voltage trim range		90		110	%	Trim up (% of V <sub>O</sub> nom) Trim down (% of V <sub>O</sub> nom) See Application Note 118 for details of trim equations and trim curves
Open sense voltage		11.6	12	12.5	Vdc	

## EXQ125-48S12J Model

### Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	h	91.8	93		%	I <sub>out</sub> = 100% I <sub>out</sub> (max); V <sub>in</sub> = V <sub>in</sub> (nom)
Efficiency	h	91.5	92.8		%	I <sub>out</sub> = 50% I <sub>out</sub> (max); V <sub>in</sub> = V <sub>in</sub> (nom)

### EXQ125-48S1V2J Model

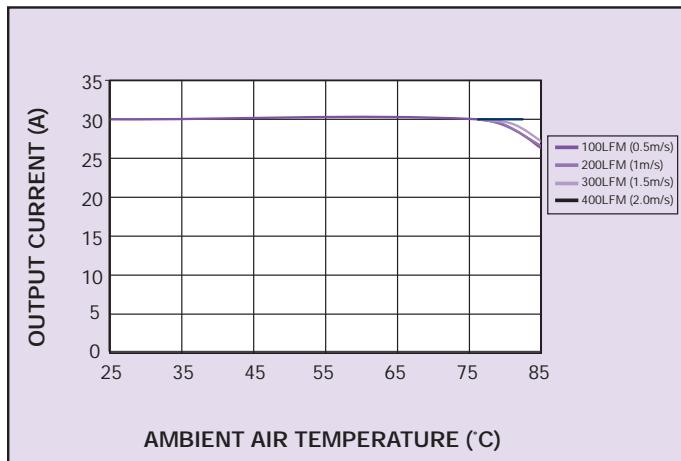


Figure 1: Derating Curve with Forced Air

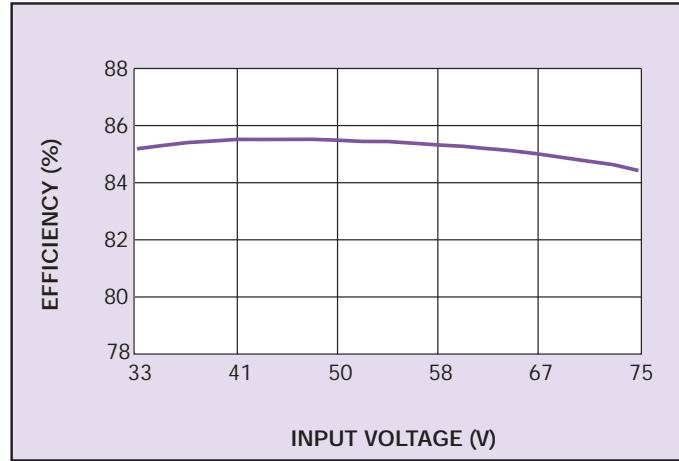


Figure 2: Efficiency vs. Line

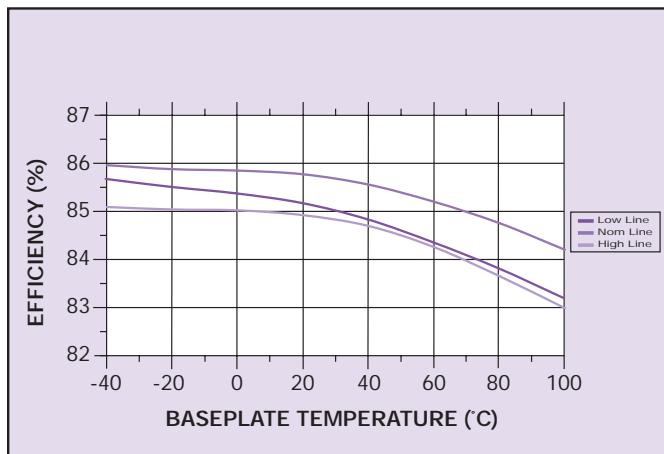


Figure 3: Typical Efficiency vs. Baseplate Temperature

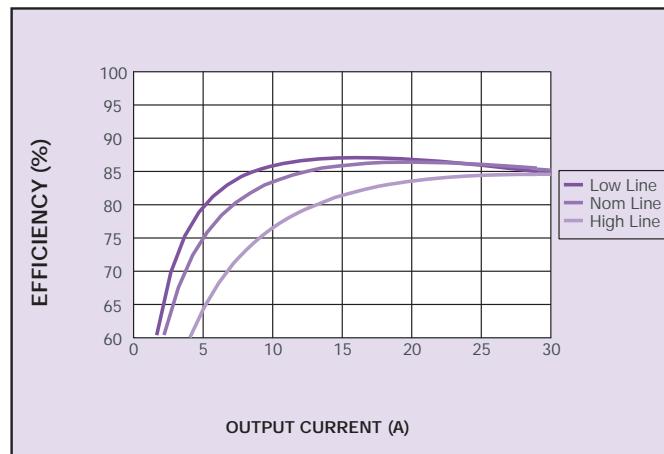


Figure 4: Efficiency vs. Load

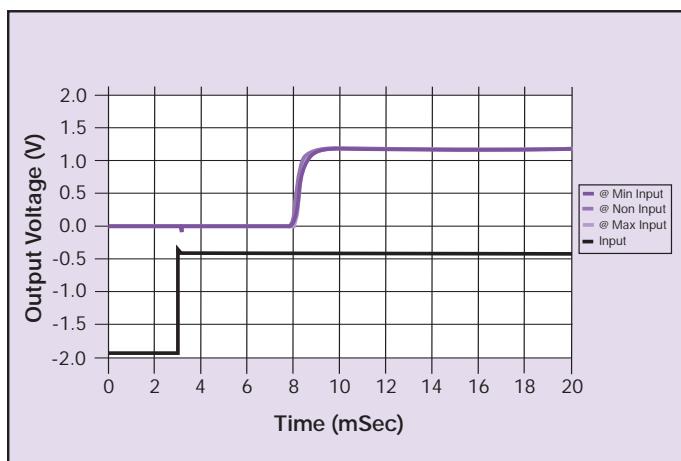


Figure 5: Turn-on Characteristic

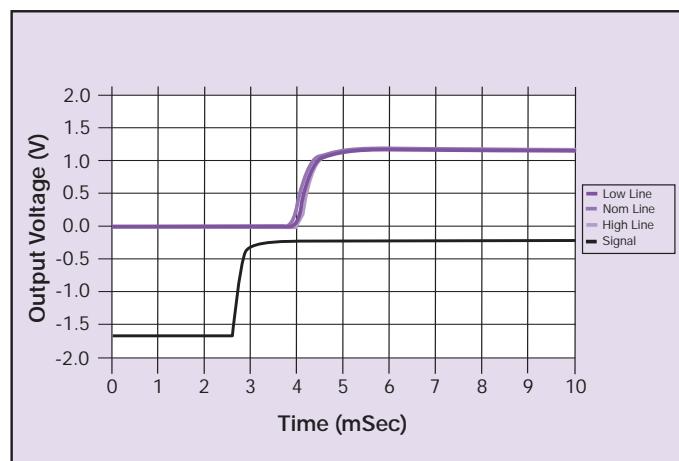


Figure 6: Control On/Off Characteristic

### EXQ125-48S1V2J Model

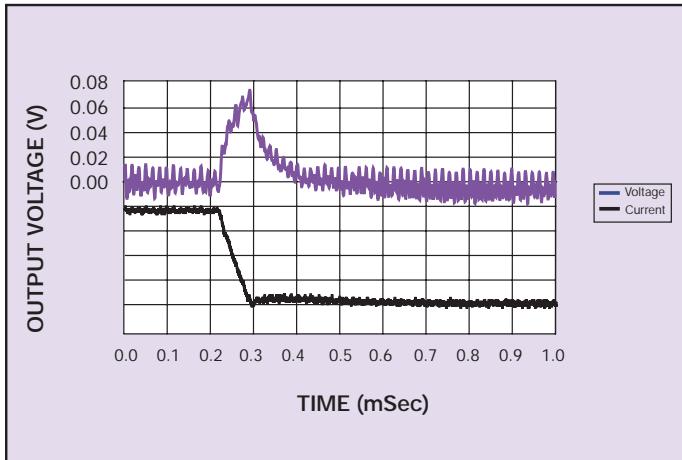


Figure 7: Typical Transient Response 75-50%  
Step Load Change

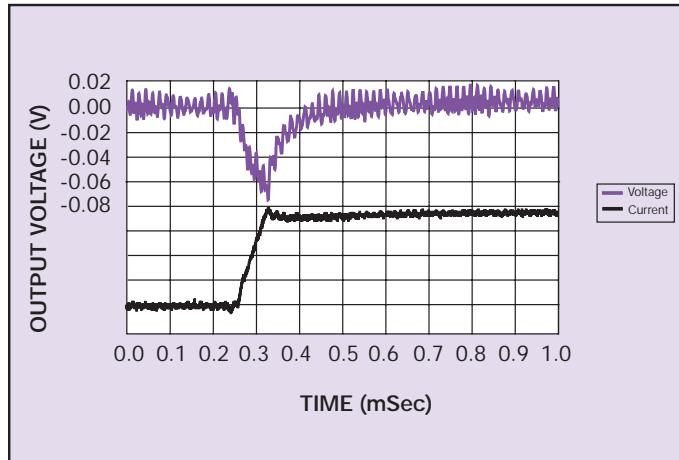


Figure 8: Typical Transient Response 50-75%  
Step Load Change

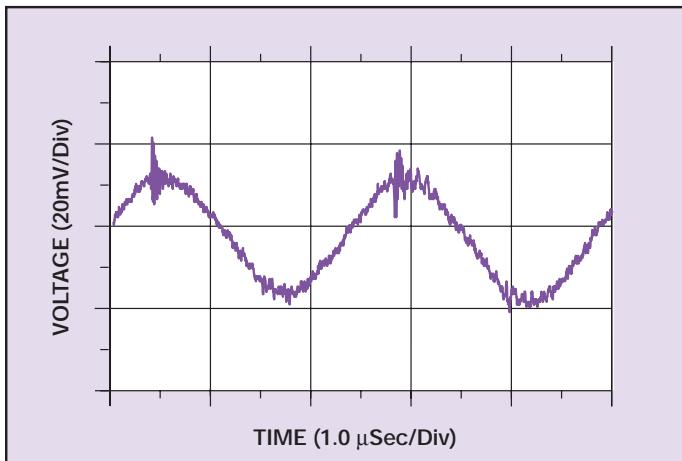


Figure 9: Typical Output Ripple and Noise Measurement

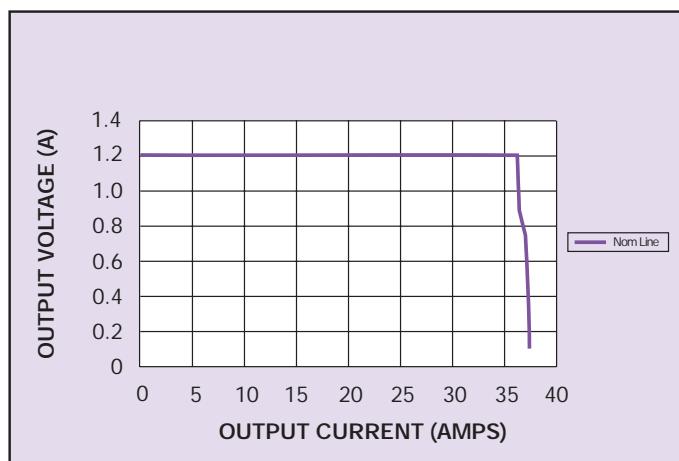


Figure 10: Current Limit Characteristic

### EXQ125-48S1V5J Model

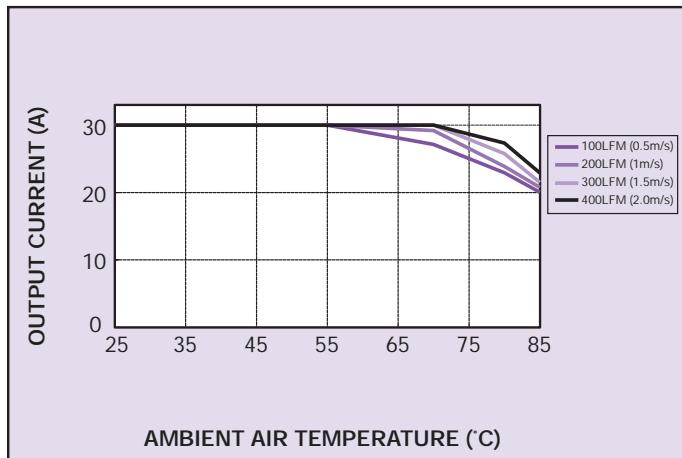


Figure 11: Derating Curve with Forced Air

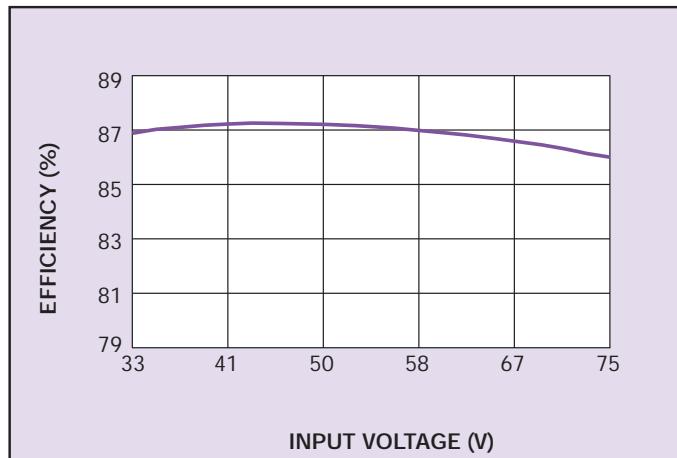


Figure 12: Efficiency vs. Line

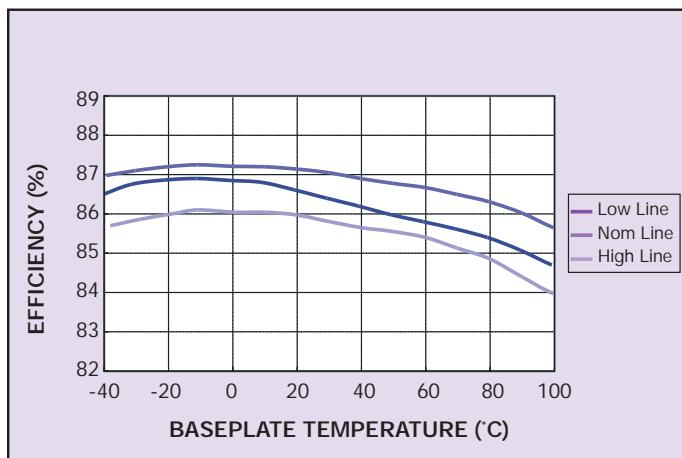


Figure 13: Typical Efficiency vs. Baseplate Temperature

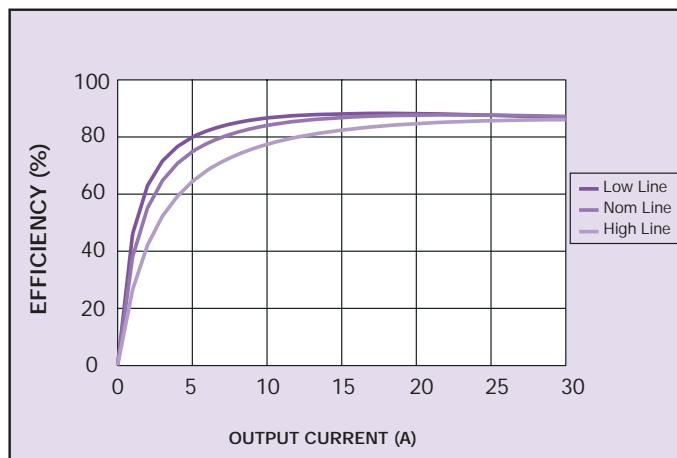


Figure 14: Efficiency vs. Load

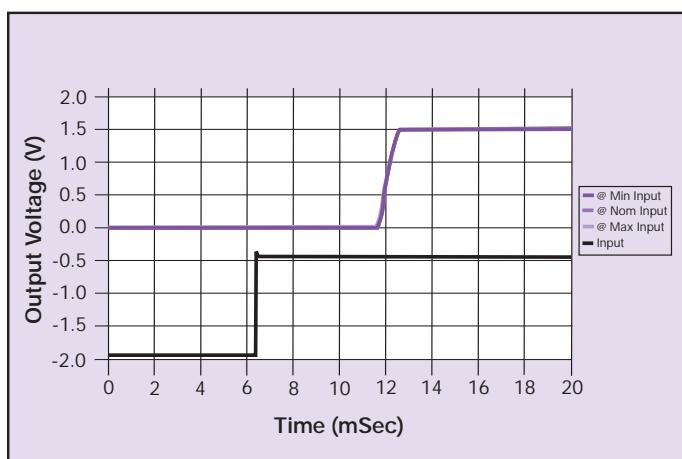


Figure 15: Turn-on Characteristic

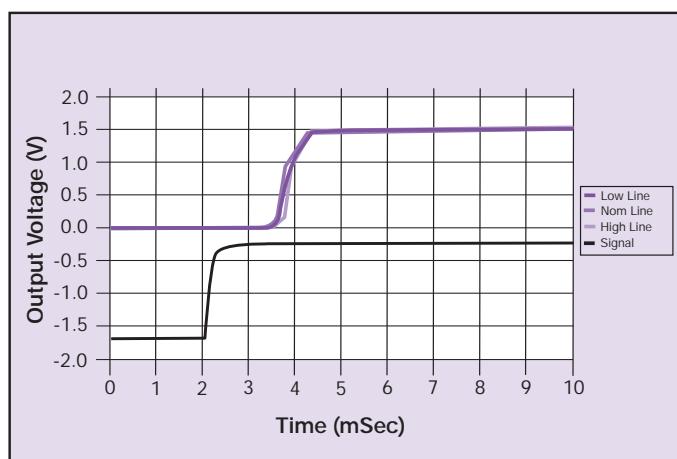


Figure 16: Control On/Off Characteristic

### EXQ125-48S1V5J Model

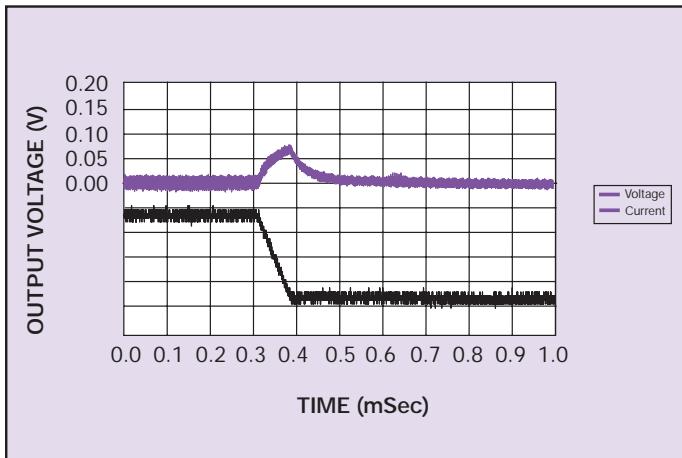


Figure 17: Typical Transient Response 75-50%  
Step Load Change

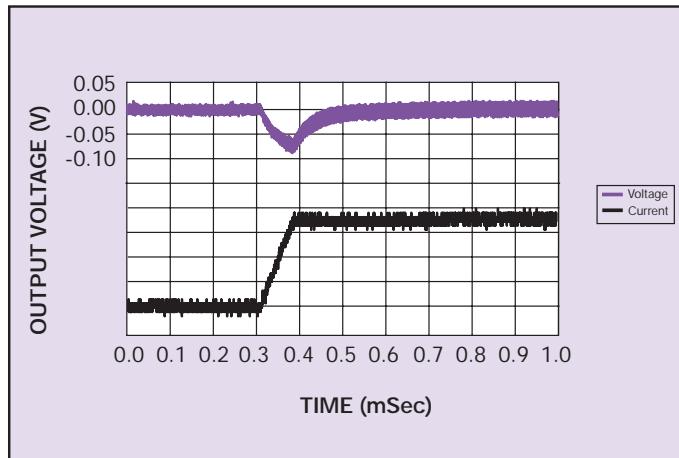


Figure 18: Typical Transient Response 50-75%  
Step Load Change

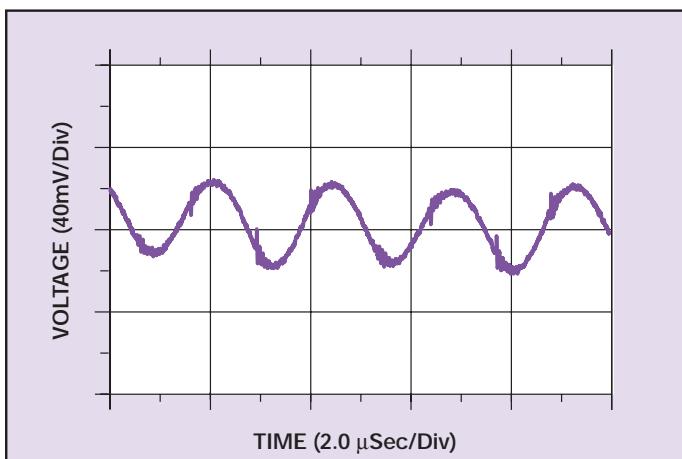


Figure 19: Typical Output Ripple and Noise Measurement

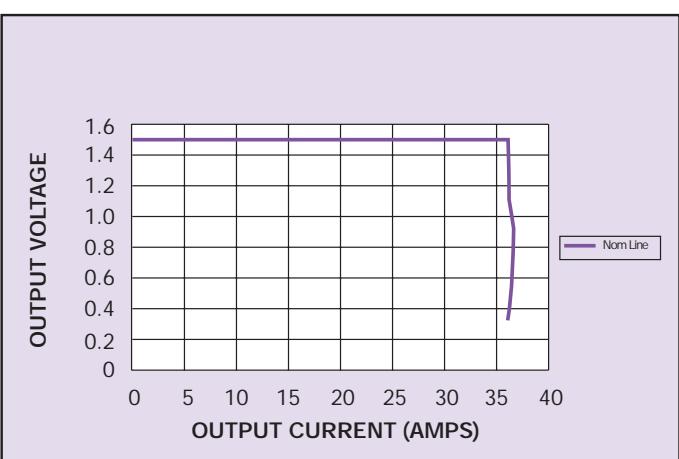


Figure 20: Current Limit Characteristic

### EXQ125-48S1V8J Model

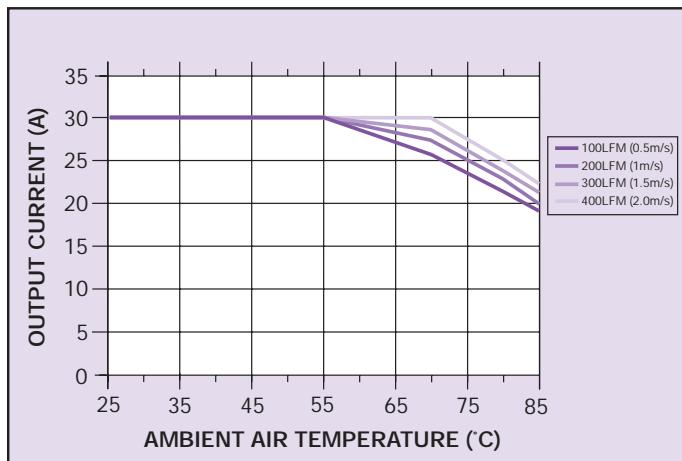


Figure 21: Derating Curve with Forced Air

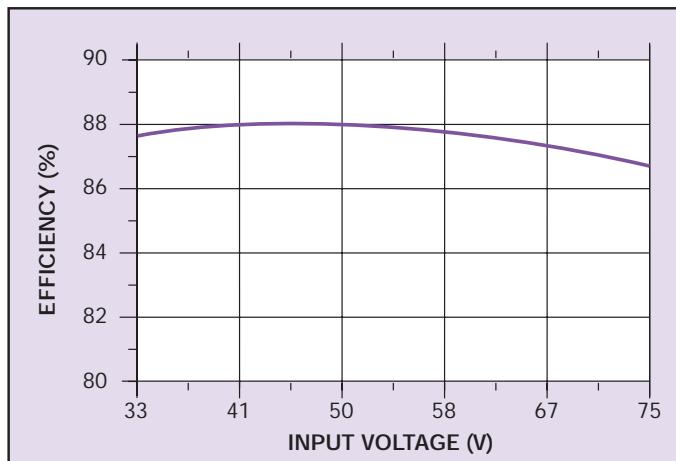


Figure 22: Efficiency vs. Line

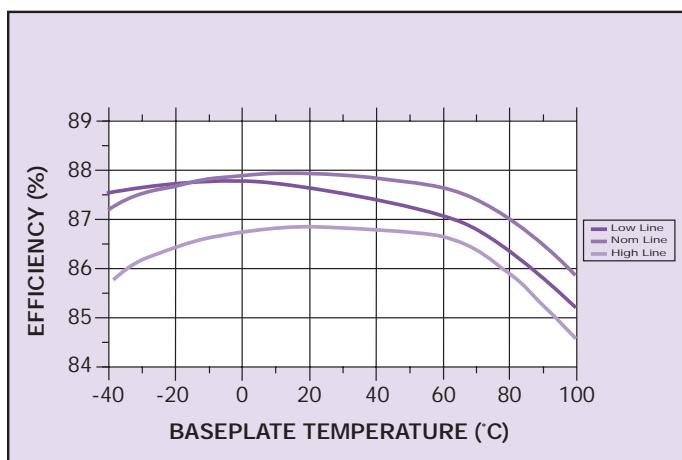


Figure 23: Typical Efficiency vs. Baseplate Temperature

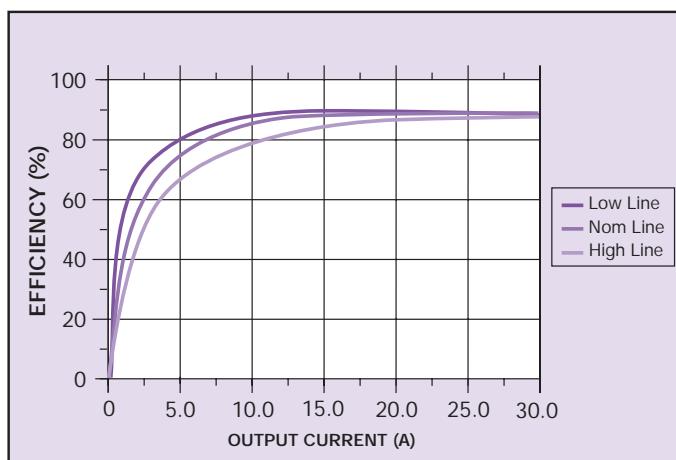


Figure 24: Efficiency vs. Load

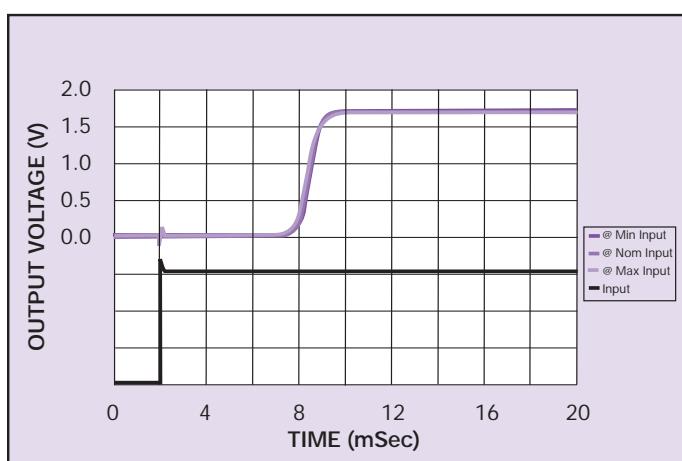


Figure 25: Turn-on Characteristic

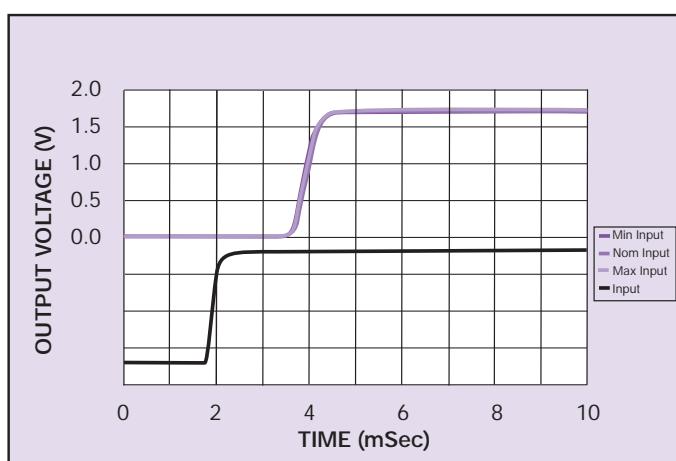


Figure 26: Control On/Off Characteristic

### EXQ125-48S1V8J Model

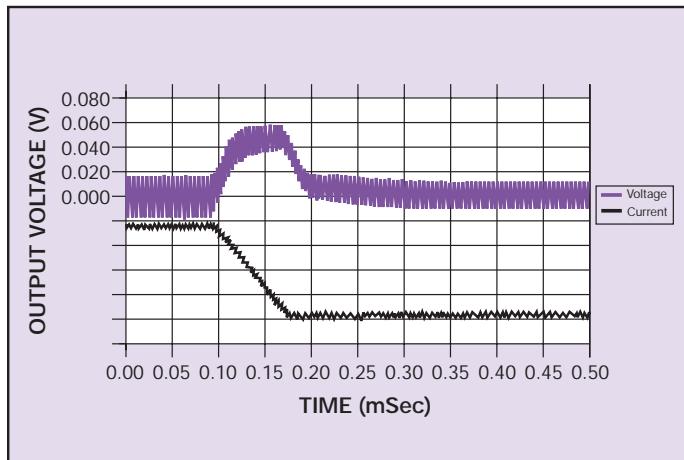


Figure 27: Typical Transient Response 75-50%  
Step Load Change

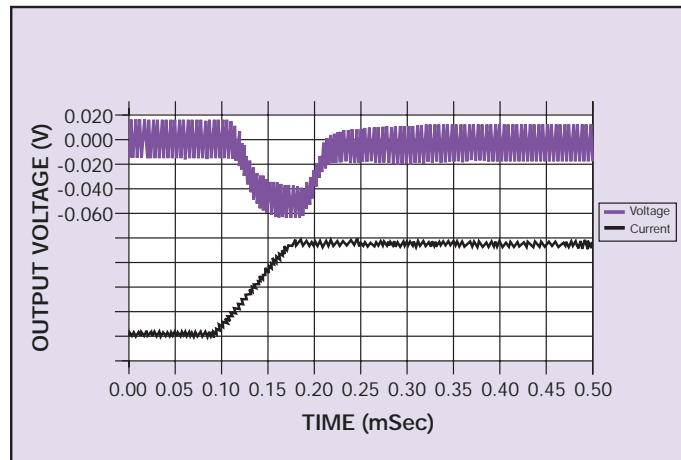


Figure 28: Typical Transient Response 50-75%  
Step Load Change

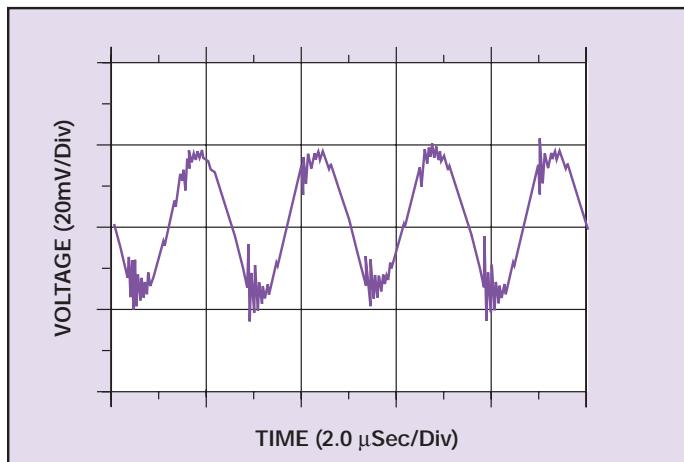


Figure 29: Typical Output Ripple and Noise Measurement

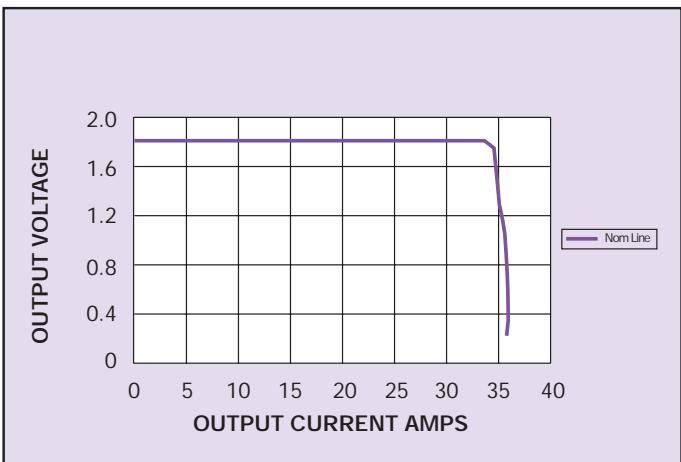


Figure 30: Current Limit Characteristic

### EXQ125-48S2V5J Model

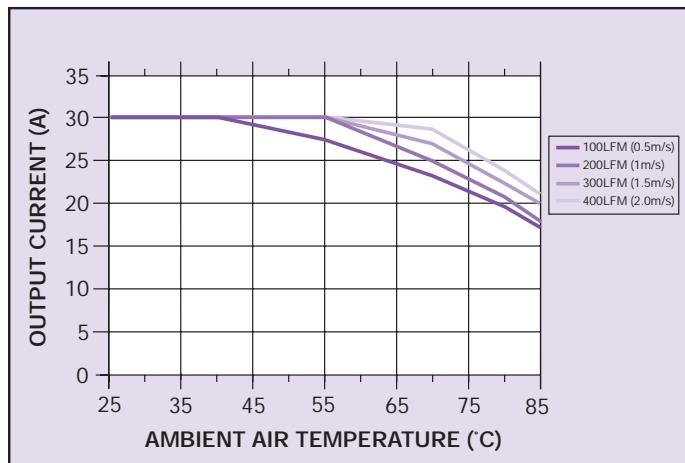


Figure 31: Derating Curve with Forced Air

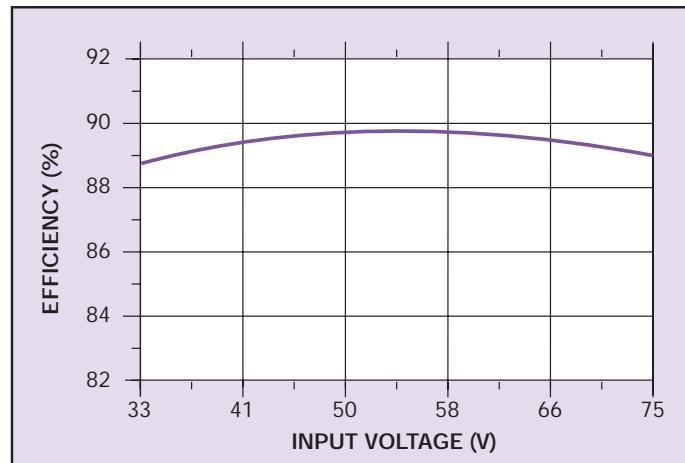


Figure 32: Efficiency vs. Line

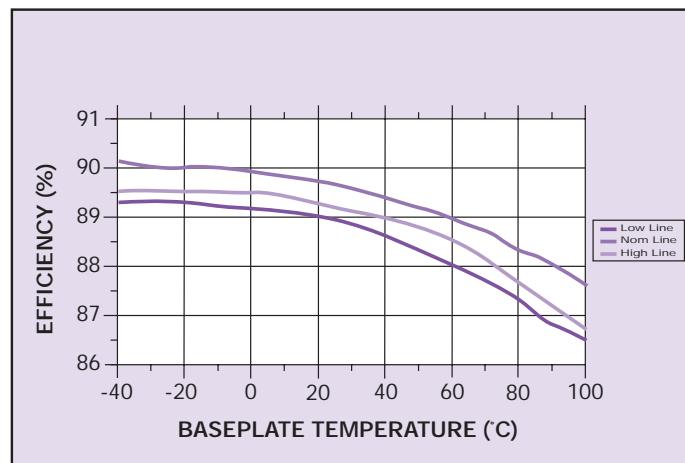


Figure 33: Typical Efficiency vs. Baseplate Temperature

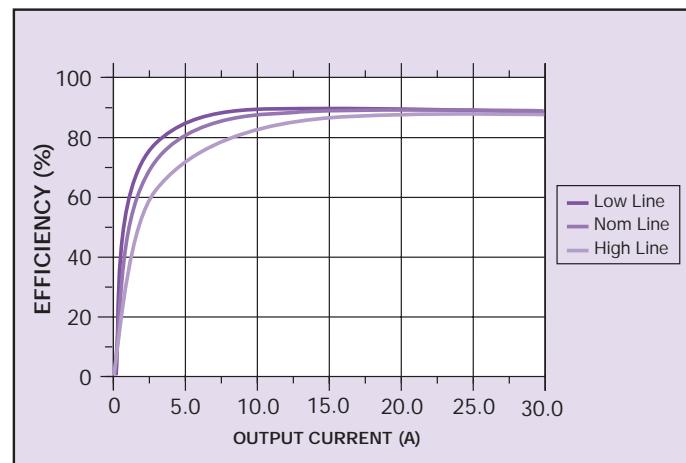


Figure 34: Efficiency vs. Load

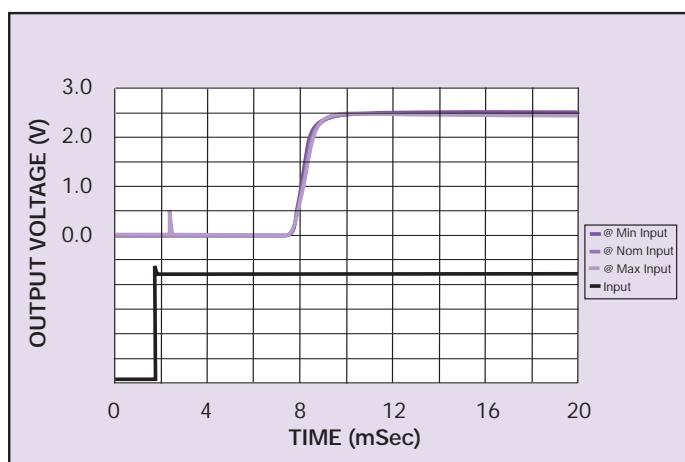


Figure 35: Turn-on Characteristic

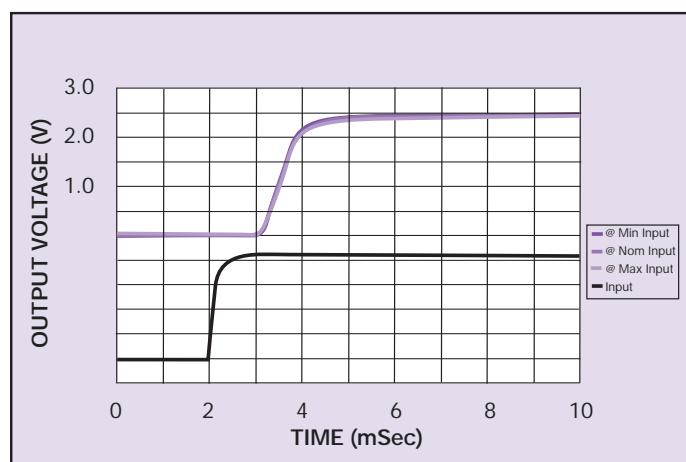


Figure 36: Control On/Off Characteristic

### EXQ125-48S2V5J Model

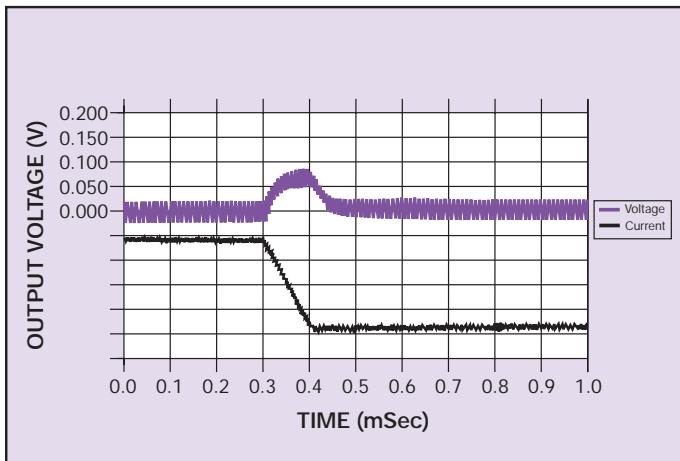


Figure 37: Typical Transient Response 75-50%  
Step Load Change

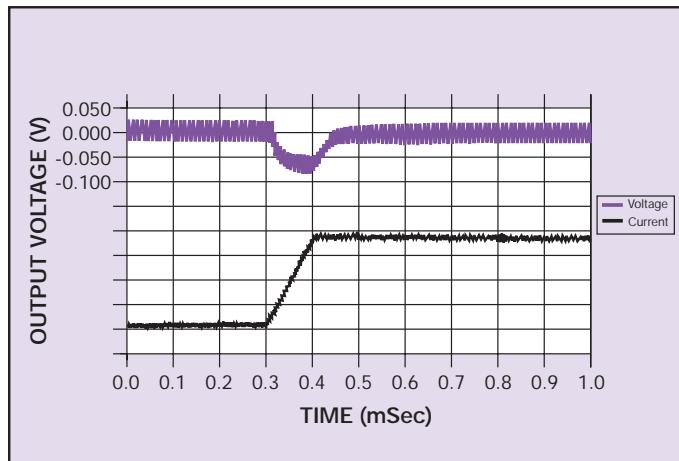


Figure 38: Typical Transient Response 50-75%  
Step Load Change

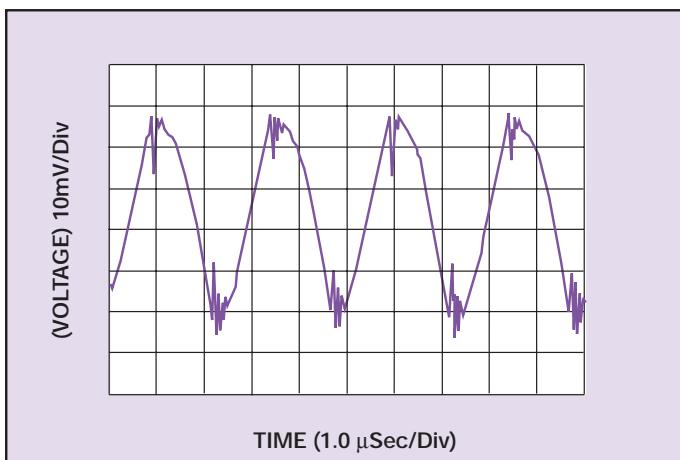


Figure 39: Output Ripple and Noise Measurement

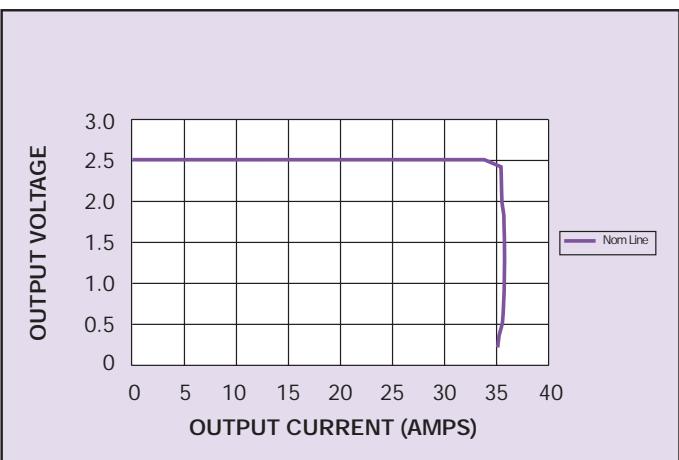


Figure 40: Current Limit Characteristic

### EXQ125-48S3V3J Model

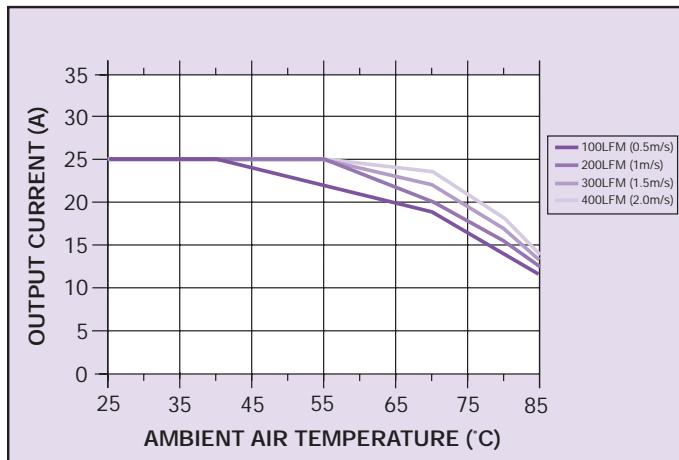


Figure 41: Derating Curve with Forced Air

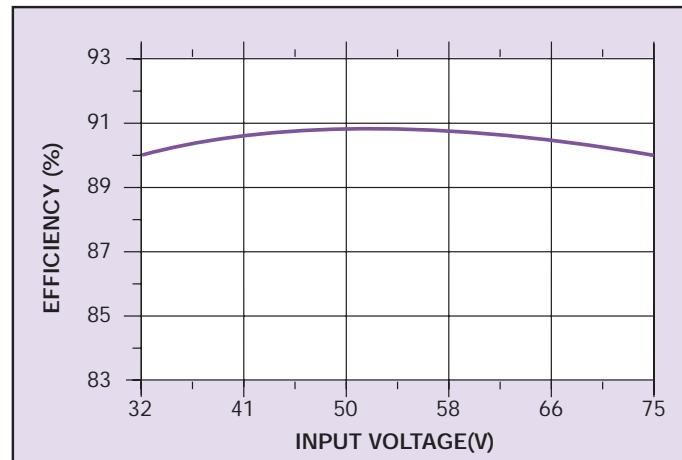


Figure 42: Efficiency vs. Line

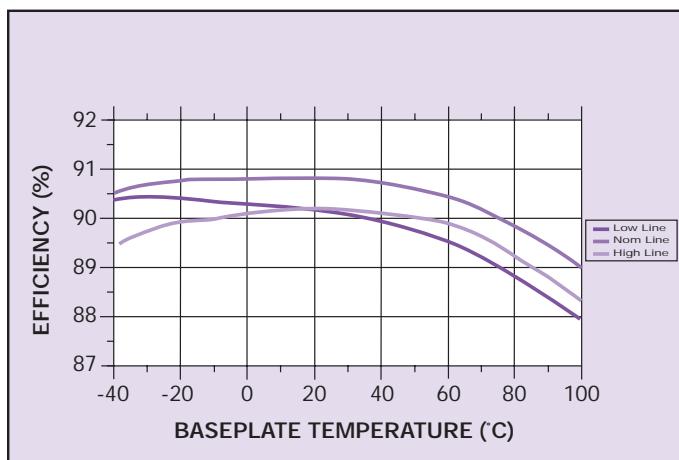


Figure 43: Typical Efficiency vs. Baseplate Temperature

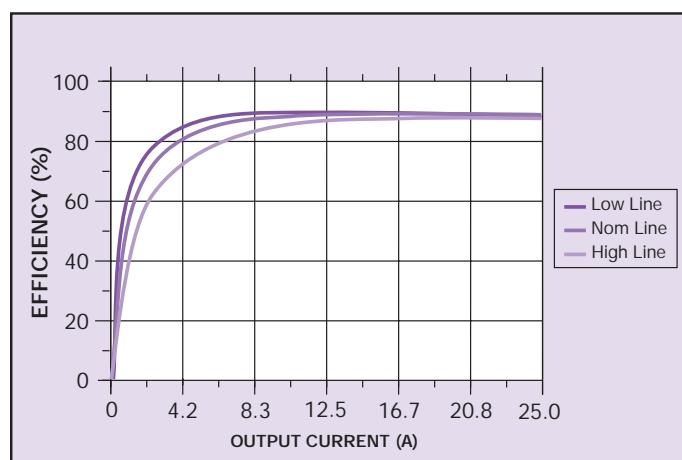


Figure 44: Efficiency vs. Load

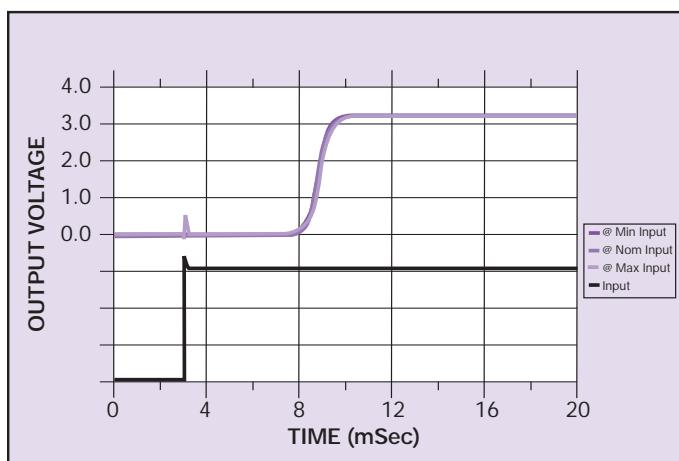


Figure 45: Turn-on Characteristic

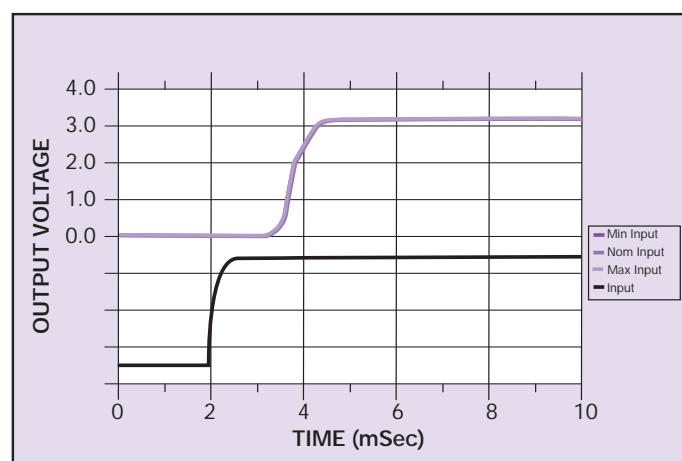


Figure 46: Control On/Off Characteristic

### EXQ125-48S3V3J Model

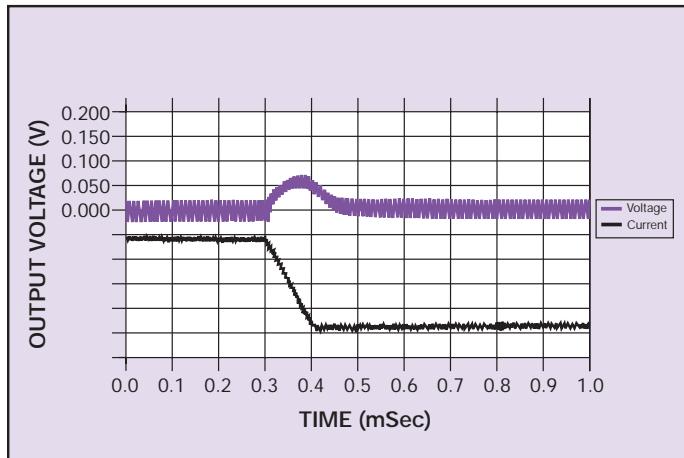


Figure 47: Typical Transient Response 75-50%  
Step Load Change

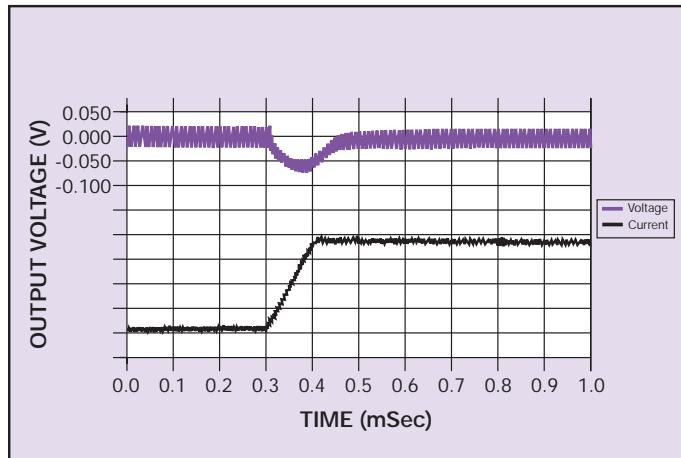


Figure 48: Typical Transient Response 50-75%  
Step Load Change

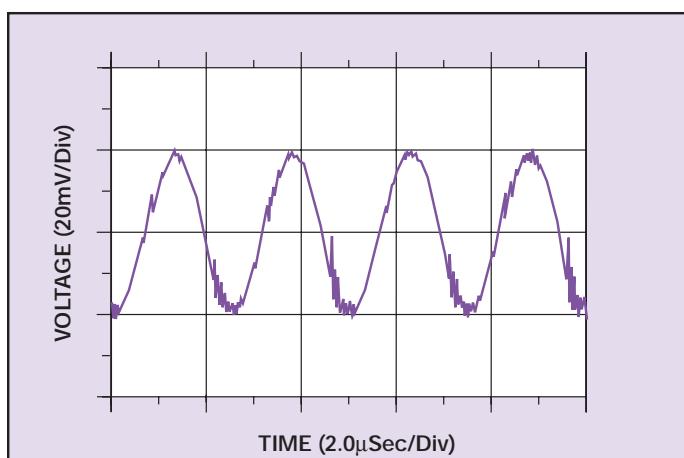


Figure 49: Output Ripple and Noise Measurement

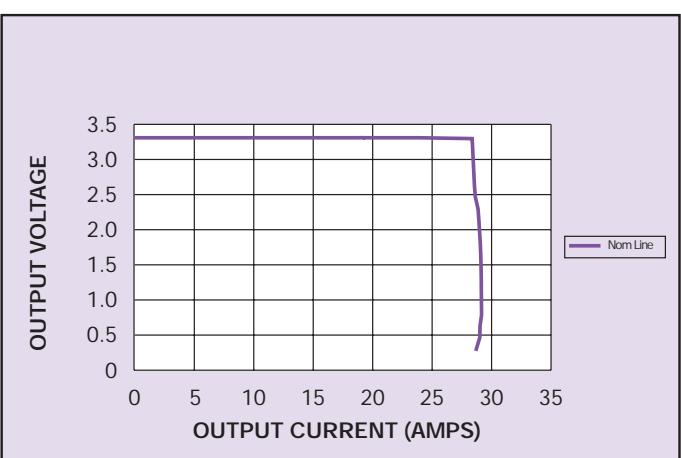


Figure 50: Current Limit Characteristic

### EXQ125-48S05J Model

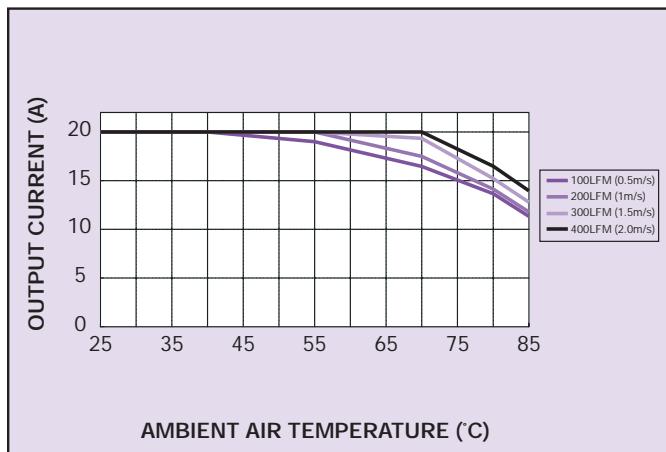


Figure 51: Derating Curve with Forced Air

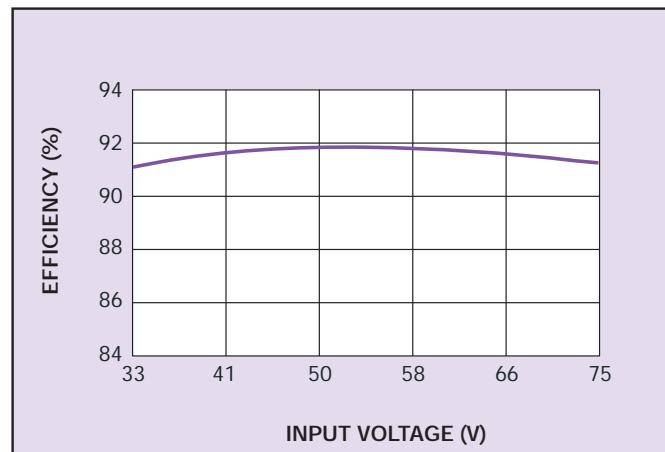


Figure 52: Efficiency vs. Line

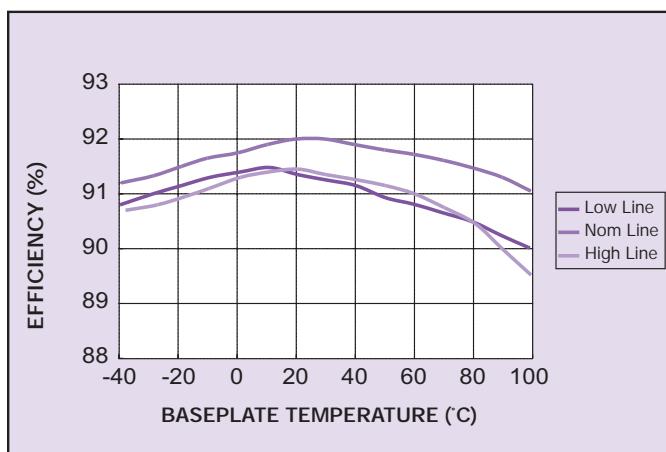


Figure 53: Typical Efficiency vs. Baseplate Temperature

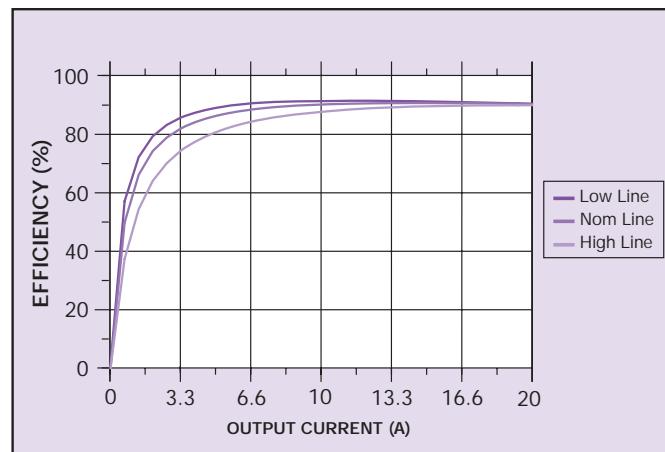


Figure 54: Efficiency vs. Load

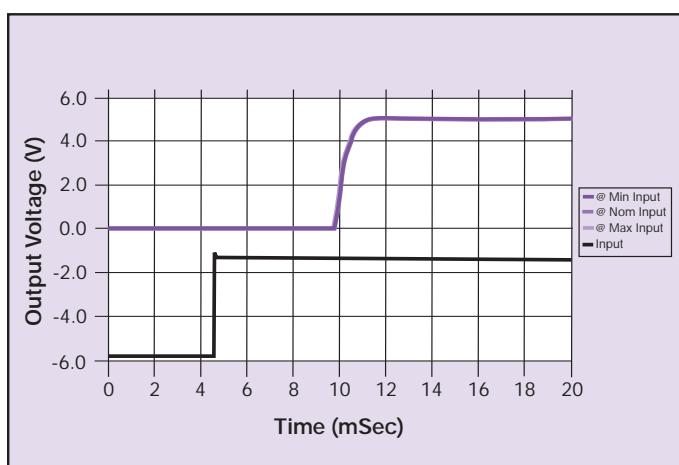


Figure 55: Turn-on Characteristic

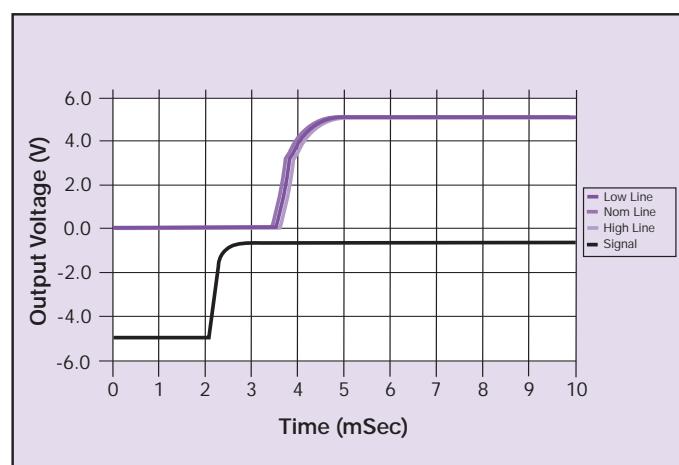


Figure 56: Control On/Off Characteristic

### EXQ125-48S05J Model

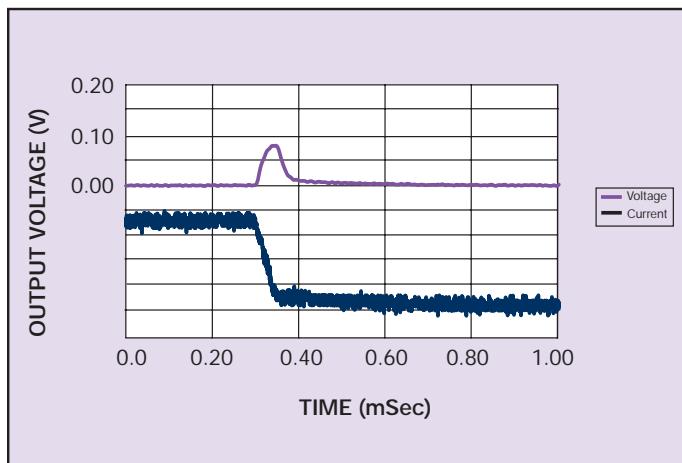


Figure 57: Typical Transient Response 75-50%  
Step Load Change

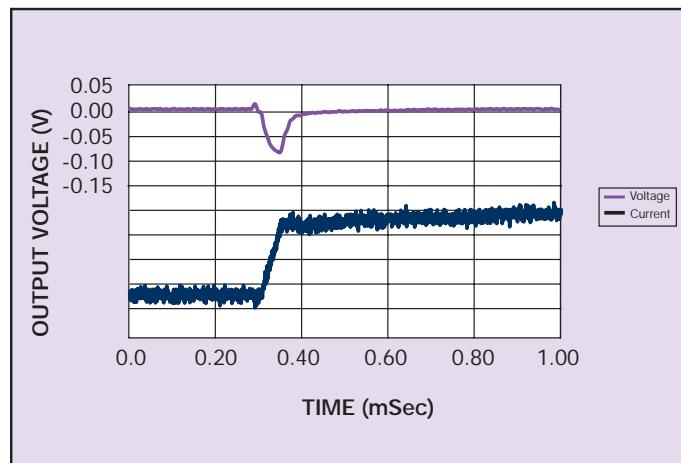


Figure 58: Typical Transient Response 50-75%  
Step Load Change

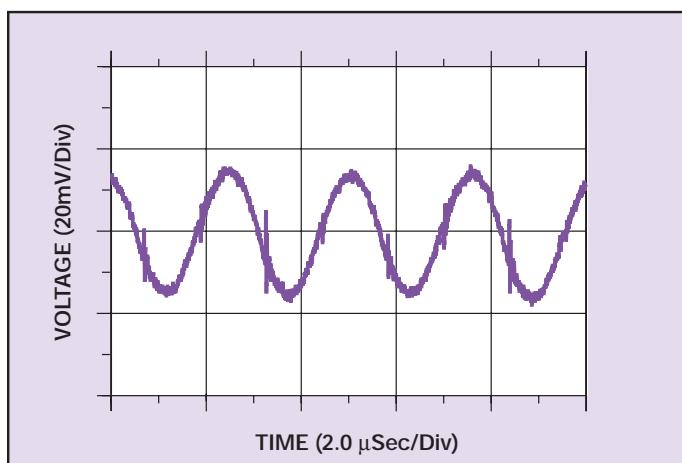


Figure 59: Output Ripple and Noise Measurement

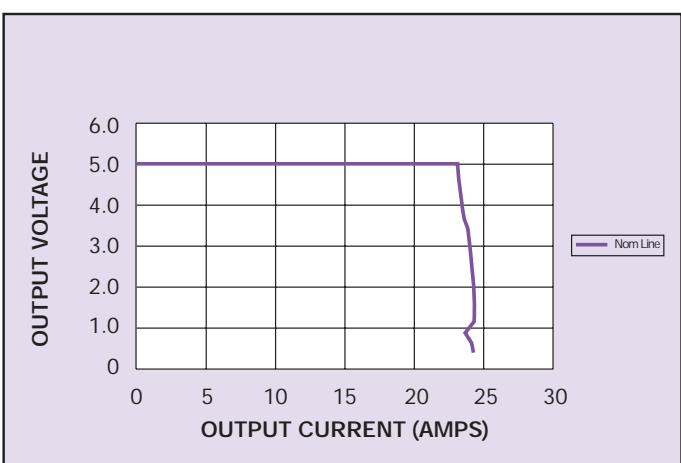


Figure 60: Current Limit Characteristic

### EXQ125-48S12J Model

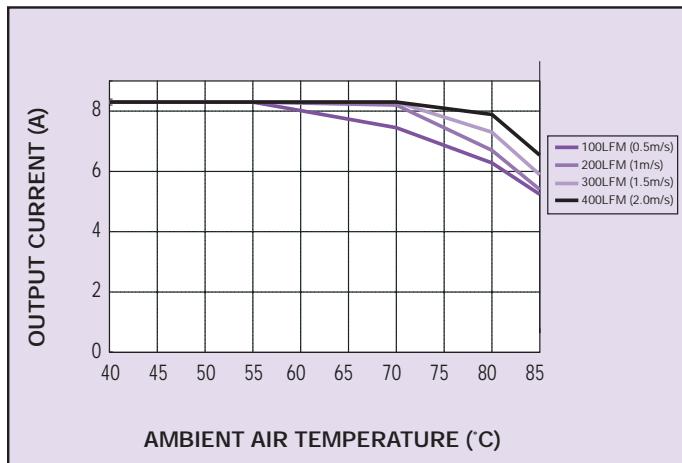


Figure 61: Derating Curve with Forced Air

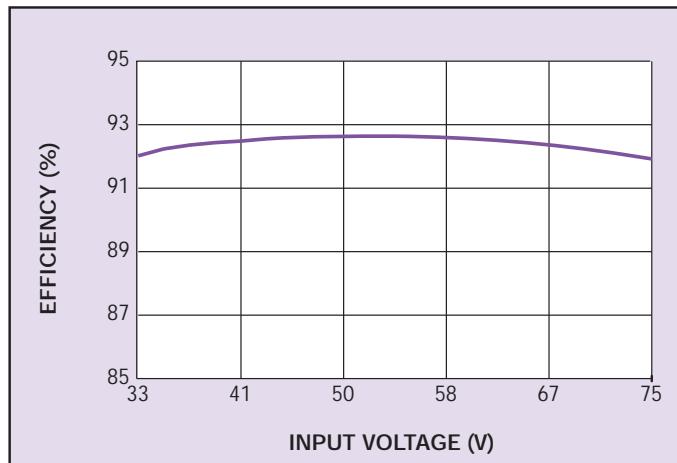


Figure 62: Efficiency vs. Line

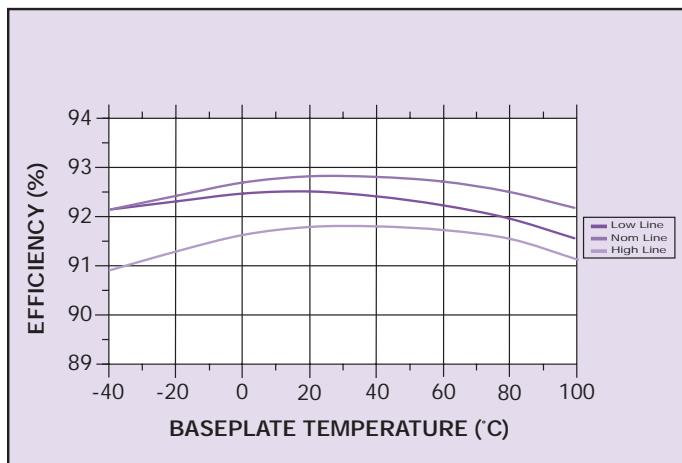


Figure 63: Typical Efficiency vs. Baseplate Temperature

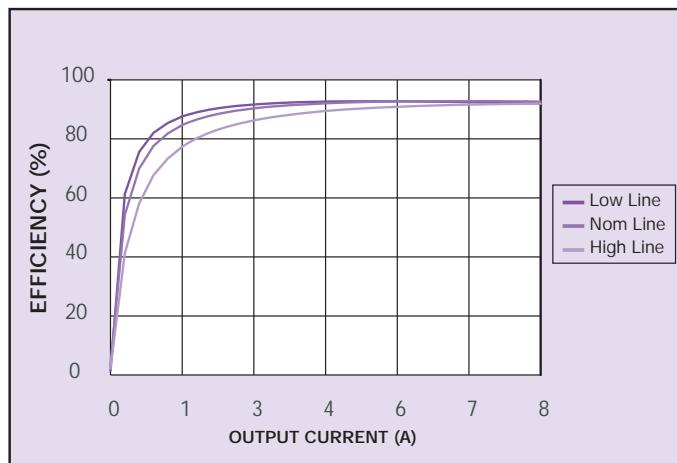


Figure 64: Efficiency vs. Load

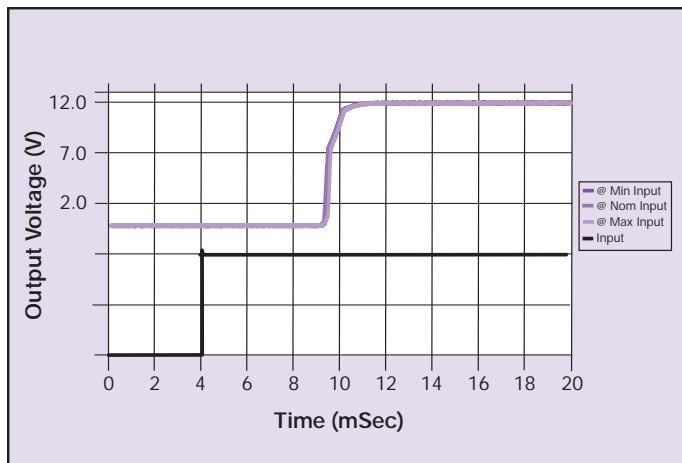


Figure 65: Turn-on Characteristic

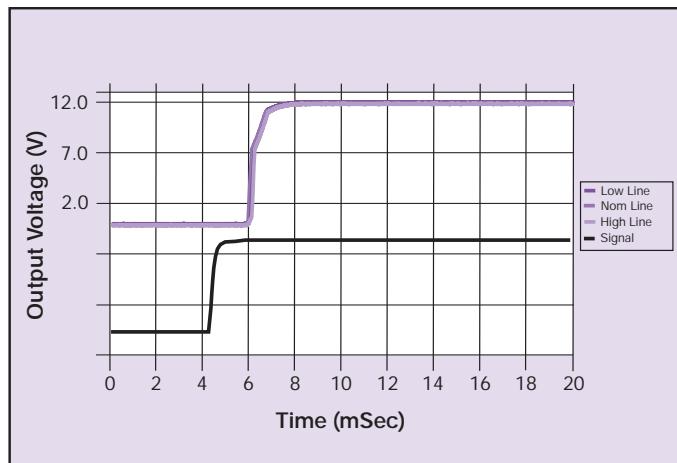


Figure 66: Control On/Off Characteristic

### EXQ125-48S12J Model

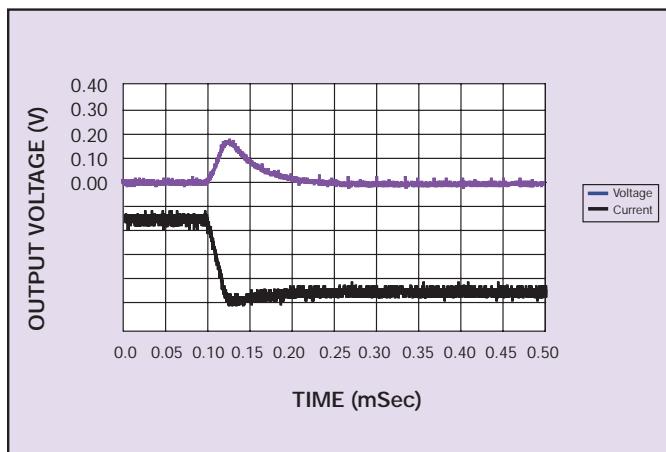


Figure 67: Typical Transient Response 75-50%  
Step Load Change

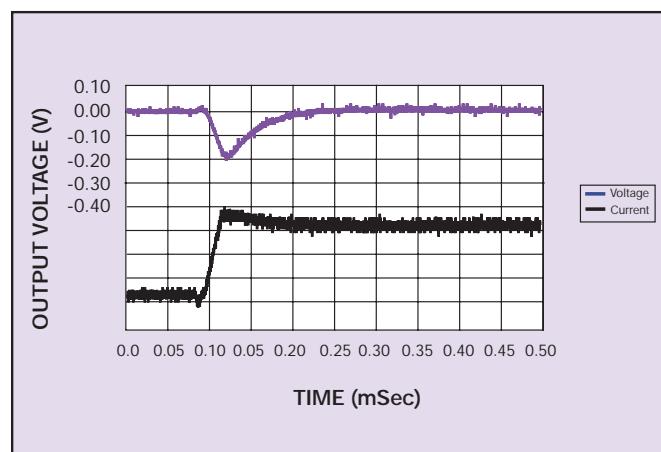


Figure 68: Typical Transient Response 50-75%  
Step Load Change

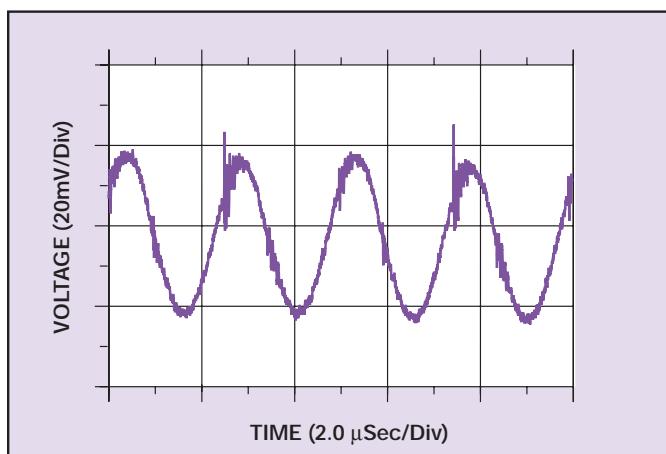


Figure 69: Output Ripple and Noise Measurement

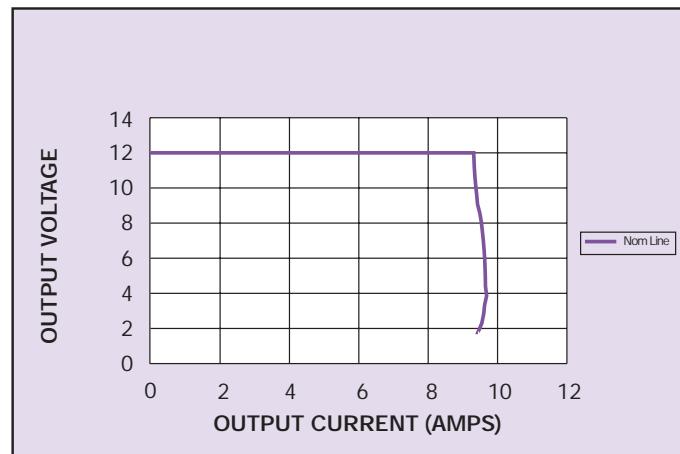
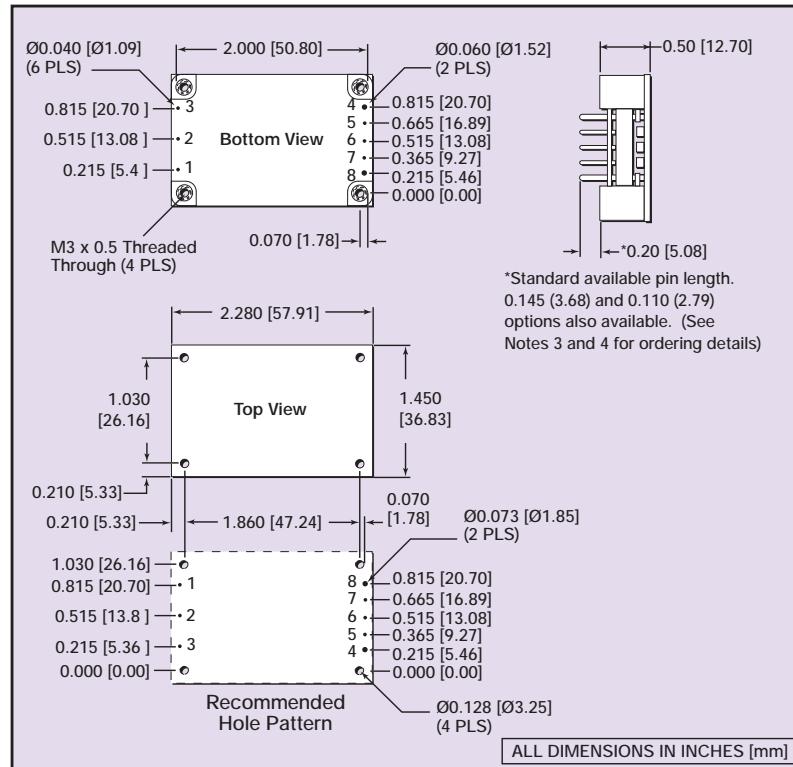


Figure 70: Current Limit Characteristic



#### Pin Connections

Pin No.	Function
1	+ Vin
2	ON/OFF
3	- Vin
4	- Vout
5	- Sense
6	Trim
7	+ Sense
8	+ Vout

Figure 71: Dimensions and Pinout

# EXQ125 48V SERIES

## Single Output

■ Embedded Power for  
Business-Critical Continuity

Rev.10.17.07  
exq125 48v series  
36 of 36

### Notes

- 1 The control pin is referenced to Vin-.
- 2 Active low Remote ON/OFF is available. Standard product is active high. When ordering active low parts, designate with the Suffix '-R' e.g. EXQ125-48S3V3-RJ. See Application Note 118 for detailed information regarding ON/OFF control implementation.
- 3 When ordering 0.145" pin lengths designate with the Suffix '-N',  
e.g. EXQ125-48S3V3-NJ. If the product is already a '-R' suffix product then the suffix will be '-RNJ', e.g. EXQ125-48S3V3-RNJ.
- 4 When ordering 0.110" pin lengths designate with the Suffix '-K',  
e.g. EXQ125-48S3V3-KJ. If the product is already a '-R' suffix product then the suffix will be '-RKJ' e.g. EXQ125-48S3V3-RKJ.

**CAUTION:** Hazardous internal voltages and high temperatures. Ensure that unit is accessible only to trained personnel. The user must provide the recommended fusing in order to comply with safety approvals.

### Americas

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 760 930 4600  
Facsimile: +1 760 930 0698

### Europe (UK)

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

### Asia (HK)

16th - 17th Floors, Lu Plaza  
2 Wing Yip Street, Kwun Tong  
Kowloon, Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

**[www.powerconversion.com](http://www.powerconversion.com)**

**[technicalsupport@powerconversion.com](mailto:technicalsupport@powerconversion.com)**

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

**Emerson Network Power.**  
The global leader in enabling  
business-critical continuity.

- AC Power
- Connectivity
- DC Power
- **Embedded Power**
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

**[EmersonNetworkPower.com](http://EmersonNetworkPower.com)**

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.  
©2007 Emerson Electric Co.