SIL06C SERIES

Single Output

- Wide output voltage trim (0.9 Vdc to 5.0 Vdc, 6 A max.)
- Power good output signal (open collector)
- Input undervoltage lockout
- Current sink capabilities for termination applications
- Operating ambient temperature up to 80 °C with suitable derating and forced air cooling
- Remote ON/OFF
- No minimum load requirement
- Non-latching over-current protection
- Compact footprint, vertical and horizontal options
- 5 V and 12 V input options
- Available RoHS compliant

The SIL06C is a new high density open frame non-isolated converter series for space sensitive applications. Each model has a wide input range (4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8 Vdc) and offer a wide 0.9 Vdc to 5 Vdc output voltage range with a 6 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to the 5 V maximum. Typical efficiencies for the models are 89% for the 5 V input version and 91% for the 12 V input version.

The SIL06C series offers remote ON/OFF and over-current protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL06C reduces compliance costs and time to market.

[2 YEAR WARRANTY]

ARTESYN TECHNOLOGIES

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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	$V_{in\ (cont)}$	-0.3		13.8	V DC	$V_{in(+)}$ - $V_{in(-)}$
Operating temperature	T_{op}	0		50	°C	Measured at thermal reference points, see Note 1. Higher ambient operation possible with forced air cooling. See de-rating curves
Storage temperature	$T_{storage}$	-40		125	°C	
Output current	Iout (max)			6	A	

All specifications are typical at nominal input Vin = 12V and 5V, full load under any resistive load combination at 25°C unless otherwise stated.

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input voltage - operating (5V)	$V_{in\ (oper)}$	4.5		5.5	V DC	
(12V)	$V_{in\ (oper)}$	10.2		13.8	V DC	
Input current - no load (5V)	I_{in}		20	120	mADC	$V_{in\ (min)}$ - $V_{in\ (max)}$, enabled
(12)			50			
Input current - Quiescent	$I_{in\ (off)}$		3.5	6.5	mADC	Converter disabled
Input voltage variation	dv/dt		1.0		V/ms	Product was tested at 1.2V/ms. Much higher dV/dt is possible (>10V/ms). Consult factory for details

Turn On/Off

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input voltage - turn on (5V)	$V_{in\ (on)}$	4.4	4.5	4.6	V DC	
(12V)	$V_{in\ (on)}$	8.7	9.0	9.3	V DC	
Input voltage - turn off (5V)	$V_{in\ (off)}$	4.2	4.3	4.4	V DC	
(12V)	$V_{in\ (off)}$	7.2	7.5	7.8	V DC	
Turn on delay - enabled, then power applied	T_{delay} (power)			20	msec	With the Remote ON/OFF signal asserted, this is the time from when the input voltage reaches the minimum specified operating voltage until the Power Good is asserted high
Turn on delay - power applied, then Remote ON/OFF asserted	T_{delay} (Remote ON/OFF)			25	msec	V_{in} = $V_{in\ (nom)}$, then Remote ON/OFF asserted. This is the time taken until the power good is asserted high.
Output to power good delay	T_{delay} (power good)			8	ms	Output voltage in full regulation to power good asserted high.
Rise time (5V)	T_{rise}			10	msec	From 10% to 90%; full resistive load, 680µF capacitance
Rise time (12V)				5		

Signal Electrical Interface

Characteristic - Signal Name	Symbol	Min	Typ	Max	Units	Notes and Conditions
At remote/control ON/OFF pin						**See Notes 2 and 3** See Application Note 131 for Remote On/Off details
Control pin open circuit voltage	V_{ih}		2.27	2.5	V	I_{ih} = 0 µA; open circuit voltage
High level input current	I_{ih}			1.0	µA	Current flowing into control pin when pin is pulled high (max. at V_{ih} = 13.8V)
High level input voltage	V_{ih}	2.4			V	Converter guaranteed on when control pin is greater than V_{ih} (min)
Low level input voltage	V_{il}			0.8	V	Converter guaranteed off when control pin is less than V_{il} (max)
Low level input current (5V) (12V)	I_{il} (max)			133 500	µA µA	V_{il} = 0.0 V;

Reliability and Service Life

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Mean time between failure	MTBF	1,307,257			Hours	MIL-HDBK-217F, V_{in} = $V_{in\ (nom)}$; I_{out} = I_{out} (max); ambient 40°C; ground benign environment
Mean time between failure	MTBF	7,562,142			Hours	Telcordia SR-332 Issue 3, ground benign, temp. = 40°C, V_{in} = $V_{in\ (nom)}$, I_{out} = I_{out} (max)

Other Specifications

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Switching frequency	F_{sw}		200		kHz	Fixed frequency
Weight			9.3		g	

Environmental Specifications

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Thermal performance		0	50			°C See Notes 1, 4 and individual derating curves

Type	Parameter	Reference	Test Level	Notes and Conditions
Air temperature operating	10°C to 50°C			Max. rate of change is 30 degrees per hour while operating and 20 degrees per hour while non-operating
Air temperature non-operating	-40°C to 120°C			
Relative humidity - operating	80%			With non-condensing
Relative humidity - non-operating	100%			Excluding rain during parts shipment
Vibration - operating				Sinusoidal vibration, 0.5G (0 to peak) acceleration. See Note 5
Vibration - non-operating				Sinusoidal vibration, 1.0G (0 to peak). See Note 5
Shock	Acceleration			
Non-operating square wave				40G, square wave at 200in/sec (508cm/sec); on all six sides
Non-operating half sine				Half sine pulse for 70in/sec (178cm/sec) for 2ms; on all sides except top)
Operating half sine				Half sine pulse for 40in/sec (102cm/sec) for 2ms; on all sides except top

Characteristic	Altitude	Percentage Derating		
Altitude Derating	3000m (9,843 ft)	20%		Altitude is defined as height above sea level
	10000m (32,808 ft)	50%		

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.

Safety Agency Approvals

Characteristic	
UL/cUL	UL/cUL 60950
TUV Product Service	IEC 60950

Material Ratings

Characteristic - Signal Name	*Notes and Conditions*
Flammability rating	UL94V-0
Material type	FR4 PCB

Model Numbers

Model Number	*Input Voltage*	*Output Voltage*	*Output Current (Max.)*	*Typical Efficiency*	*Max. Load Regulation*
SIL06C-05SADJ-VJ	5VDC	0.9V - 3.3V	6A	89%	±0.5%
SIL06C-05SADJ-HJ	5VDC	0.9V - 3.3V	6A	89%	±0.5%
SIL06C-12SADJ-VJ	12VDC	0.9V - 5V	6A	91%	±0.5%
SIL06C-12SADJ-HJ	12VDC	0.9V - 5V	6A	91%	±0.5%

RoHS Compliance Ordering Information

The 'J' at the end of the part number indicates that the part is Pb-free (RoHS 6/6 compliant). TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.

5V and 12V Model 0.9V Setpoint

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating						
(Source) (5V)	I_{in}		1.500		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out}$ (max.); $V_o = V_o$ (nom)
(Sink) (5V)	I_{in}		-0.645		A DC	
(Source) (12V)	I_{in}		0.650		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out}$ (max.); $V_o = V_o$ (nom)
(Sink) (12V)	I_{in}		-0.285		A DC	
Reflected ripple current (5V)	$I_{in\ (ripple)}$		10.0		mA RMS	$I_{out} = I_{out\ (max.)}$, measured with external filter. See Application Note 131 for details
(5V)			51.0		mA pk-pk	
(12V)			7.0		mA RMS	
(12V)			48.0		mA pk-pk	
Input capacitance - internal filter	C_{input}		1.0		µF	
Input capacitance - external input	C_{bypass}		270		µF	Recommended customer added capacitance. Maximum ESR = 20mΩ See Application Note 131 for ripple current requirements

5V and 12V Model 0.9V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	Vo (nom)	0.8775	0.9	0.9225	V DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (nom)}$
Line regulation				±0.2	%	$I_{out} = I_{out\ (nom)}$; $V_{in\ (min)}$ to $V_{in\ (max)}$
Load regulation				±0.5	%	$V_{in} = V_{in\ (nom)}$; $I_{out\ (min)}$ to $I_{out\ (max)}$
Output current continuous	Iout	0		±6.0	A DC	Minus indicates Sink Mode
Output current - short circuit						
(5V)	I_{sc}		1			Continuous, unit auto recovers
(12V)			1.1			
Output voltage - noise						
(5V) 0.9V	V_{p-p}			30	mV pk-pk	Measurement bandwidth 20 MHz
	V_{rms}			15	mV rms	See Application Note 131 for details
(12V) 0.9V	V_{p-p}			40	mV pk-pk	
	V_{rms}			20	mV rms	

5V and 12V Model 0.9V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Load transient response - peak deviation	$V_{dynamic}$		75		mV	Peak deviation for 50% to 75% step load, di/dt = 10A/µsec
Load transient response - recovery	$T_{recovery}$		150		µsec	Settling time to within 1% of output set point voltage for 50% to 75% step load
External load capacitance (5V) (12V)	C_{ext}		680	11,500 6,080	µF	Max ESR = 12mΩ See Application Note 131 for output capitance values vs. stability

5V and 12V Model 0.9V Setpoint

Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overcurrent limit inception (5V) (12V)	I_{oc} I_{oc}		8.95 9.95		A DC A DC	V_o = 90% of V_o (nom)

5V and 12V Model 0.9V Setpoint

Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency 5V (source mode) 5V (sink mode)	η	70 58	72 60		%	I_{out} = 100% Iout (max), V_{in} = V_{in} (nom)
Efficiency 12V (source mode) 12V (sink mode)	η	68 60	70 62		%	
Efficiency 5V (source mode) 5V (sink mode)	η	78 72	80 74		%	I_{out} = 50% I_{out} (max), V_{in} = V_{in} (nom)
Efficiency 12V (source mode) 12V (sink mode)	η	72 68	74 70		%	

5V Model 1.8V Setpoint

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating (Source) (Sink)	I_{in}		2.62 -1.73		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (max.)}$; $V_o = V_{o\ (nom)}$
Reflected ripple current	$I_{in\ (ripple)}$		11.8 55		mA RMS mA pk-pk	$I_{out} = I_{out\ (max.)}$, measured with external filter. See Application Note 131 for details
Input capacitance - internal filter	C_{input}		1		µF	Internal to converter
Input capacitance - external bypass	C_{bypass}		270		µF	Recommended customer added capacitance. Maximum ESR = 20mΩ See Application Note 131 for ripple current requirements

5V Model 1.8V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_{o\ (nom.)}$	1.755	1.800	1.845	VDC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (nom)}$
Line regulation				±0.2	%	$I_{out} = I_{out\ (nom)}$; $V_{in\ (min)}$ to $V_{in\ (max)}$
Load regulation				±0.5	%	$V_{in} = V_{in\ (nom)}$; $I_{out\ (min)}$ to $I_{out\ (max)}$
Output current continuous	I_{out}	0		±6	ADC	
Output current - short circuit	I_{sc}		1		A RMS	Continuous, unit auto recovers
Output voltage - noise	V_{p-p} V_{rms}			30 15	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 131 for set-up details

5V Model 1.8V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Load transient response - peak deviation	$V_{dynamic}$		75		mV	Peak deviation for 50% to 75% step load, di/dt = 10A/µsec
Load transient response - recovery	$T_{recovery}$		150		µsec	Settling time to within 1% of output set point voltage for 50% to 75% step load
External load capacitance (5V)	C_{ext}		680	11,500	µF	Max ESR = 12mΩ See Application Note 131 for output capitance values vs. stability

5V Model 1.8V Setpoint

Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overcurrent limit inception	I_{oc}		8.75		A DC	V_o = 90% of V_o (nom)

5V Model 1.8V Setpoint

Efficiency

Characteristic		Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	(source) (sink)	η	81.4 77.6	83.4 79.6		%	I_{out} = 100% Iout (max), V_{in} = V_{in} (nom)
Efficiency	(source) (sink)	η	85.9 83.6	87.9 85.6		%	I_{out} = 50% I_{out} (max), V_{in} = V_{in} (nom)

5V Model 3.3V Setpoint

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I_{in}		4.42		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (max.)}$; $V_o = V_{o\ (nom)}$
Reflected ripple current	$I_{in\ (ripple)}$		11.3 52		mA RMS mA pk-pk	$I_{out} = I_{out\ (max.)}$, measured with external filter. See Application Note 131 for details
Input capacitance - internal filter	C_{input}		1		µF	Internal to converter
Input capacitance - external bypass	C_{bypass}		270		µF	Recommended customer added capacitance. Maximum ESR = 20mΩ See Application Note 131 for ripple current requirements

5V Model 3.3V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_{o\ (nom.)}$	3.218	3.300	3.383	VDC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (nom)}$
Line regulation				±0.2	%	$I_{out} = I_{out\ (nom)}$; $V_{in\ (min)}$ to $V_{in\ (max)}$
Load regulation				±0.5	%	$V_{in} = V_{in\ (nom)}$; $I_{out\ (min)}$ to $I_{out\ (max)}$
Output current continuous	I_{out}	0		6	ADC	
Output current - short circuit	I_{sc}		1		A RMS	Continuous, unit auto recovers from short
Output voltage - noise	V_{p-p} V_{rms}			40 15	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 131 for set-up details

5V Model 3.3V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Load transient response - peak deviation	$V_{dynamic}$		75		mV	Peak deviation for 50% to 75% step load, di/dt = 10A/µsec
Load transient response - recovery	$T_{recovery}$		150		µsec	Settling time to within 1% of output set point voltage for 50% to 75% step load
External load capacitance (5V)	C_{ext}		680	10,500	µF	Max ESR = 12mΩ See Application Note 131 for output capitance values vs. stability

5V Model 3.3V Setpoint

Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overcurrent limit inception	I_{oc}		8.3		A DC	V_o = 90% of V_o (nom)

5V Model 3.3V Setpoint

Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency (source)	η	87.9	89.9		%	I_{out} = 100% Iout (max), V_{in} = V_{in} (nom)
Efficiency (source)	η	90.8	92.8		%	I_{out} = 50% I_{out} (max), V_{in} = V_{in} (nom)

12V Model 2.5V Setpoint

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating (source) (sink)	I_{in}		1.48 -1.04		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (max.)}$; $V_o = V_{o\ (nom)}$
Reflected ripple current	$I_{in\ (ripple)}$		9.6 44.8		mA RMS mA pk-pk	$I_{out} = I_{out\ (max.)}$, measured with external filter. See Application Note 131 for details
Input capacitance - internal filter	C_{input}		1		µF	Internal to converter
Input capacitance - external bypass	C_{bypass}		270		µF	Recommended customer added capacitance. Maximum ESR = 20mΩ See Application Note 131 for ripple current requirements

12V Model 2.5V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_{o\ (nom.)}$	2.438	2.500	2.563	VDC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (nom)}$
Line regulation				±0.2	%	$I_{out} = I_{out\ (nom)}$; $V_{in\ (min)}$ to $V_{in\ (max)}$
Load regulation				±0.5	%	$V_{in} = V_{in\ (nom)}$; $I_{out\ (min)}$ to $I_{out\ (max)}$
Output current continuous	I_{out}	0		±6	ADC	
Output current - short circuit	I_{sc}		1.1		A RMS	Continuous, unit auto recovers from short
Output voltage - noise	V_{p-p} V_{rms}			40 20	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 131 for set-up details

12V Model 2.5V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Load transient response - peak deviation	$V_{dynamic}$		75		mV	Peak deviation for 50% to 75% step load, di/dt = 10A/µsec
Load transient response - recovery	$T_{recovery}$		150		µsec	Settling time to within 1% of output set point voltage for 50% to 75% step load
External load capacitance (5V)	C_{ext}		680	5,080	µF	Max ESR = 12mΩ See Application Note 131 for output capitance values vs. stability

12V Model 2.5V Setpoint

Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overcurrent limit inception	I_{oc}		9.52		A DC	V_o = 90% of V_o (nom)

12V Model 2.5V Setpoint

Efficiency

Characteristic		Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency	(source) (sink)	η	82.7 80.2	84.7 82.2		%	I_{out} = 100% Iout (max), V_{in} = V_{in} (nom)
Efficiency	(source) (sink)	η	83.8 81.8	85.8 83.8		%	I_{out} = 50% I_{out} (max), V_{in} = V_{in} (nom)

12V Model 5V Setpoint

Input Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Input current - operating	I_{in}		2.77		A DC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (max.)}$; $V_o = V_{o\ (nom)}$
Reflected ripple current	$I_{in\ (ripple)}$		11.8 56.4		mA RMS mA pk-pk	$I_{out} = I_{out\ (max.)}$, measured with external filter. See Application Note 131 for details
Input capacitance - internal filter	C_{input}		1		µF	Internal to converter
Input capacitance - external bypass	C_{bypass}		270		µF	Recommended customer added capacitance. Maximum ESR = 20mΩ See Application Note 131 for ripple current requirements

12V Model 5V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Nominal set-point voltage	$V_{o\ (nom.)}$	4.875	5	5.125	VDC	$V_{in} = V_{in\ (nom)}$; $I_{out} = I_{out\ (nom)}$
Line regulation				±0.2	%	$I_{out} = I_{out\ (nom)}$; $V_{in\ (min)}$ to $V_{in\ (max)}$
Load regulation				±0.5	%	$V_{in} = V_{in\ (nom)}$; $I_{out\ (min)}$ to $I_{out\ (max)}$
Output current continuous	I_{out}	0		6	ADC	
Output current - short circuit	I_{sc}		1.1		A RMS	Continuous, unit auto recovers from short
Output voltage - noise	V_{p-p} V_{rms}			50 25	mV pk-pk mV rms	Measurement bandwidth 20 MHz See Application Note 131 for set-up details

12V Model 5V Setpoint

Electrical Characteristics – O/P

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Load transient response - peak deviation	$V_{dynamic}$		75		mV	Peak deviation for 50% to 75% step load, di/dt = 10A/µsec
Load transient response - recovery	$T_{recovery}$		150		µsec	Settling time to within 1% of output set point voltage for 50% to 75% step load
External load capacitance (5V)	C_{ext}		680	3,880	µF	Max ESR = 12mΩ See Application Note 131 for output capitance values vs. stability

12V Model 5V Setpoint

Protection and Control Features

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Overcurrent limit inception	I_{oc}		9.27		A DC	V_o = 90% of V_o (nom)

12V Model 5V Setpoint

Efficiency

Characteristic	Symbol	Min	Typ	Max	Units	Notes and Conditions
Efficiency (source)	η	88.9	90.9		%	I_{out} = 100% Iout (max), V_{in} = V_{in} (nom)
Efficiency (source)	η	88.9	90.9		%	I_{out} = 50% I_{out} (max), V_{in} = V_{in} (nom)

5V Model 0.9V Setpoint

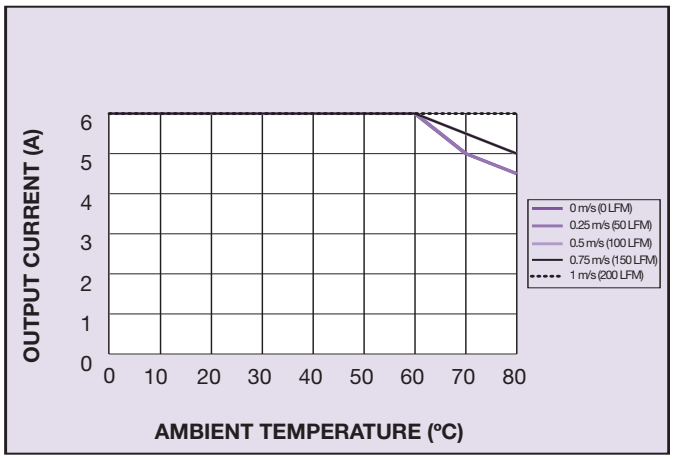

Figure 1: Thermal De-rating Curve

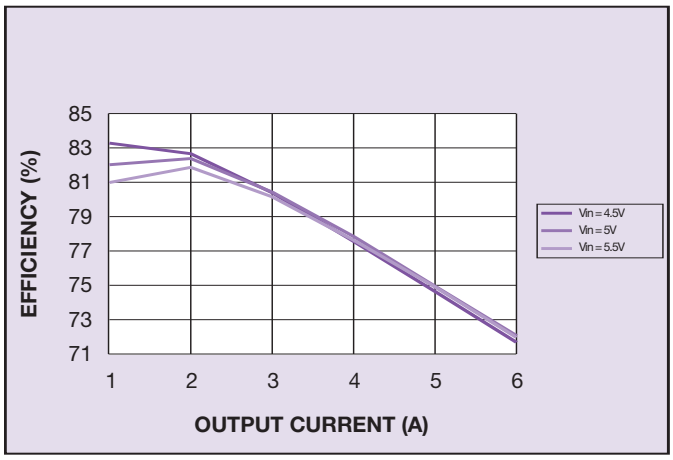

Figure 2: Efficiency when Sourcing

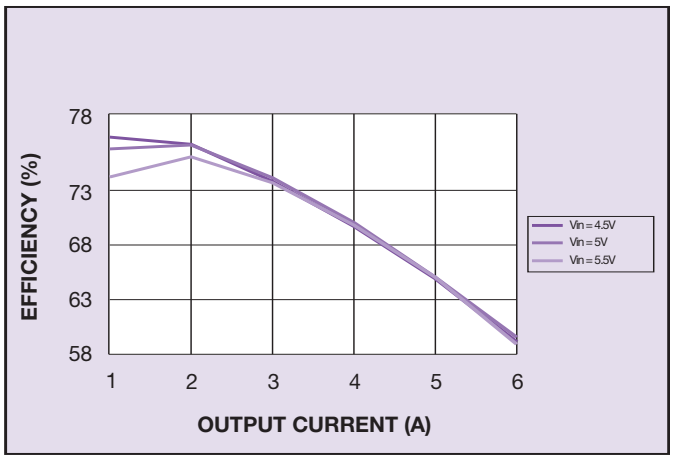

Figure 3: Efficiency when Sinking

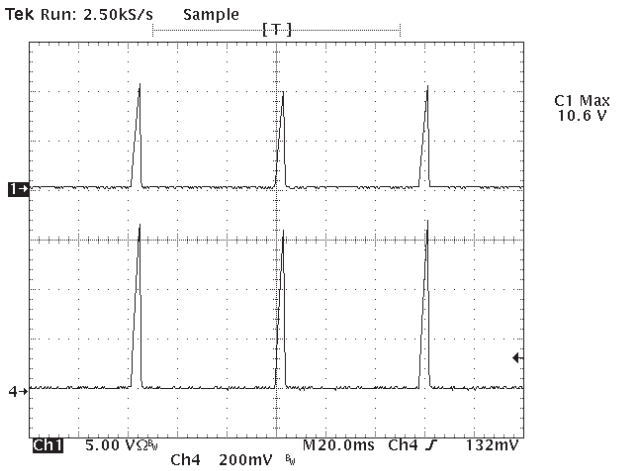

Figure 4: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

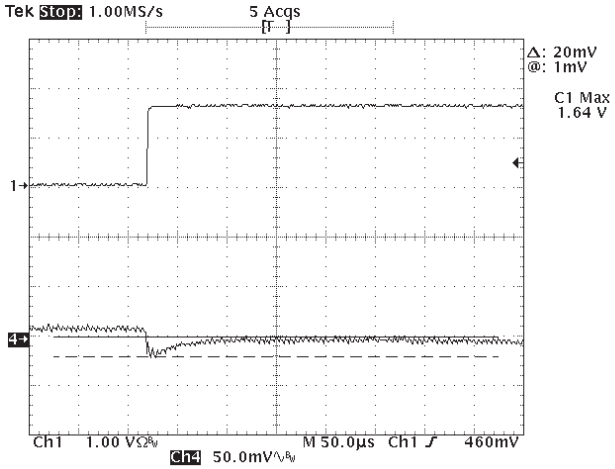

Figure 5: Transient Response 50-75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

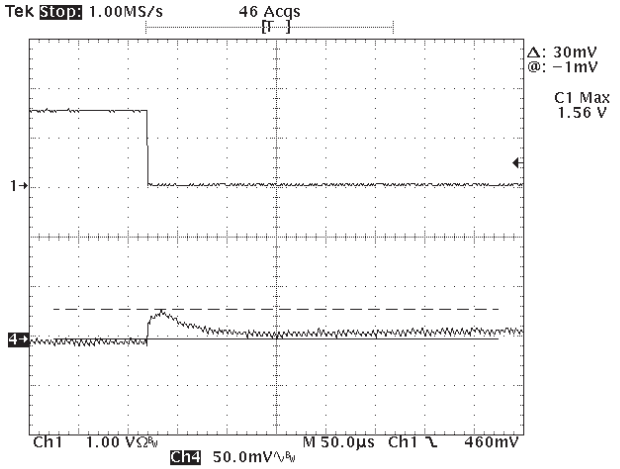

Figure 6: Transient Response 75-50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

5V Model 0.9V Setpoint

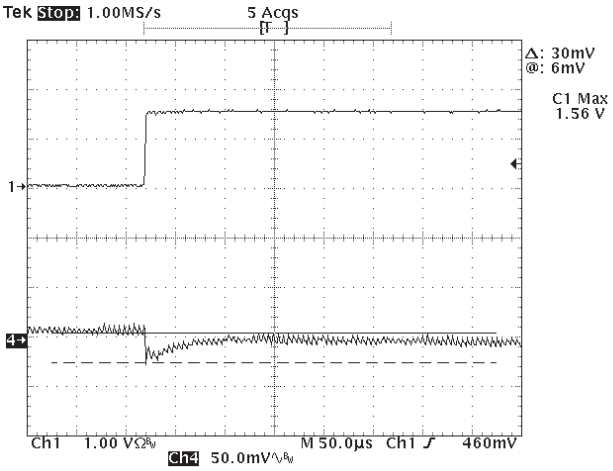

**Figure 7: Transient Response 50 - 75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

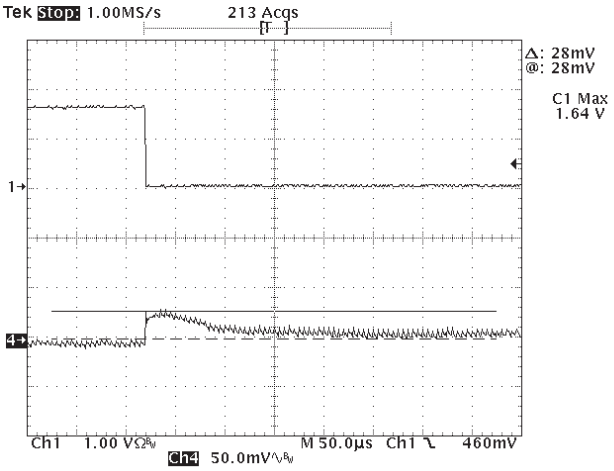

**Figure 8: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

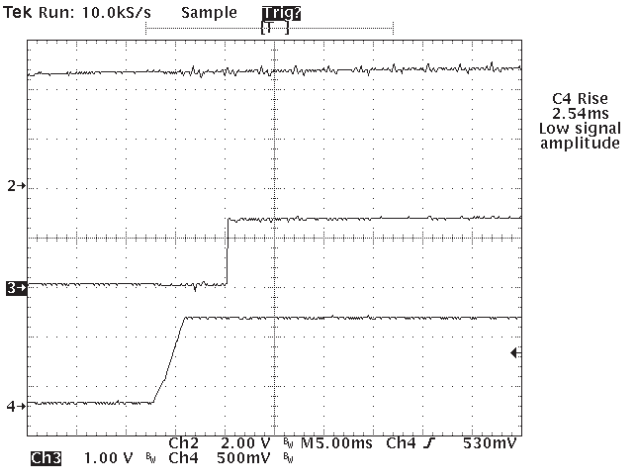

**Figure 9: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)**

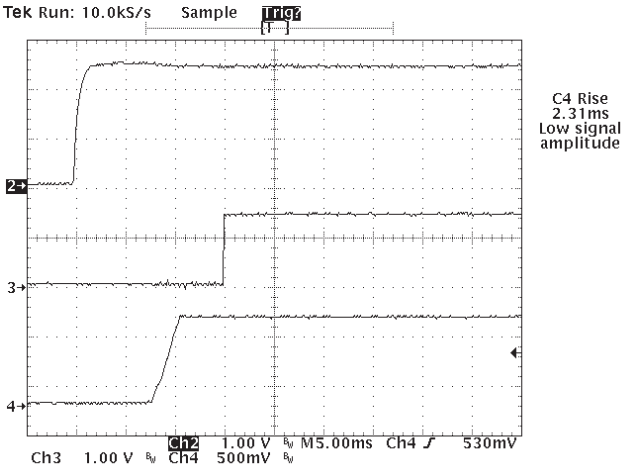

**Figure 10: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)**

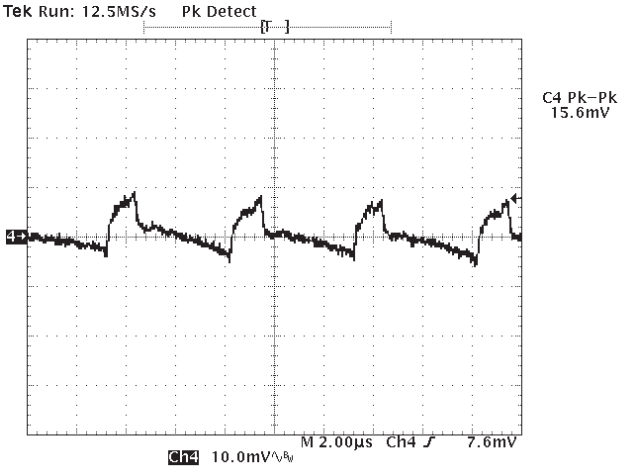

Figure 11: Typical Ripple and Noise

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5V Model 1.8V Setpoint

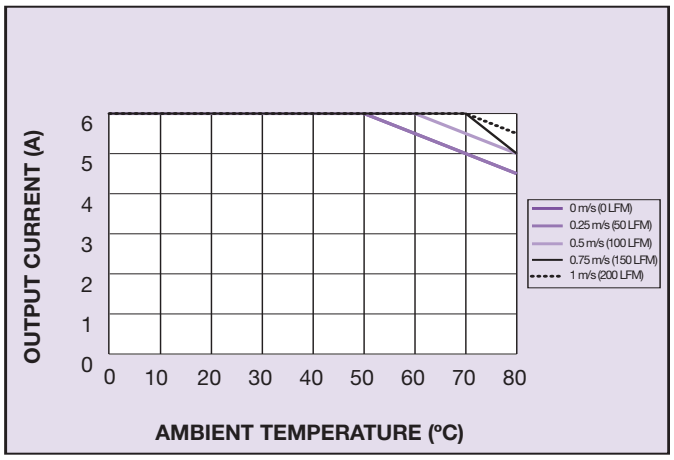

Figure 12: Thermal De-rating Curve

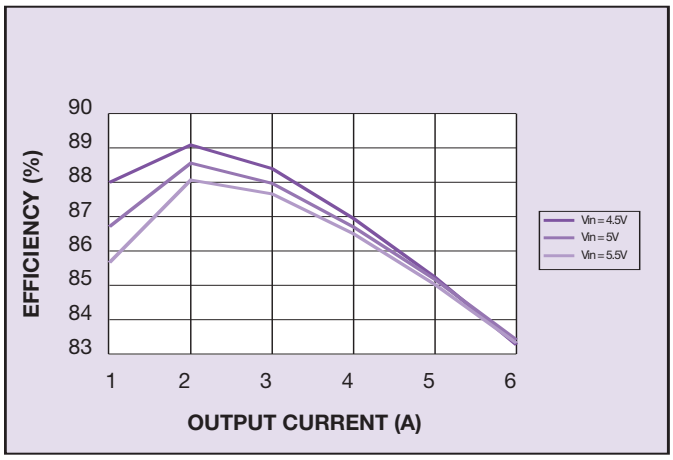

Figure 13: Efficiency when Sourcing

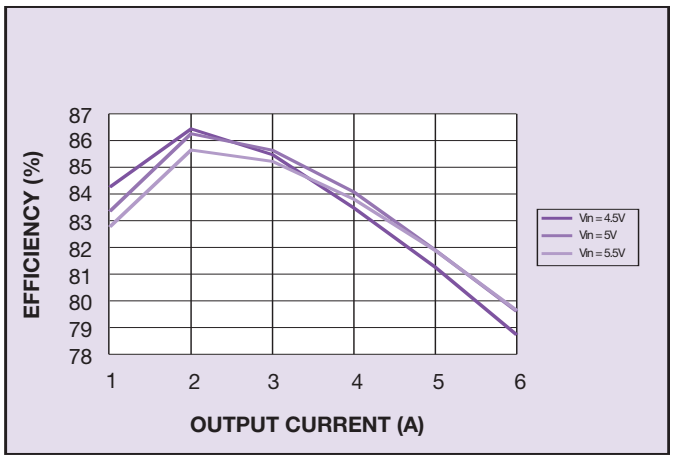

Figure 14: Efficiency when Sinking

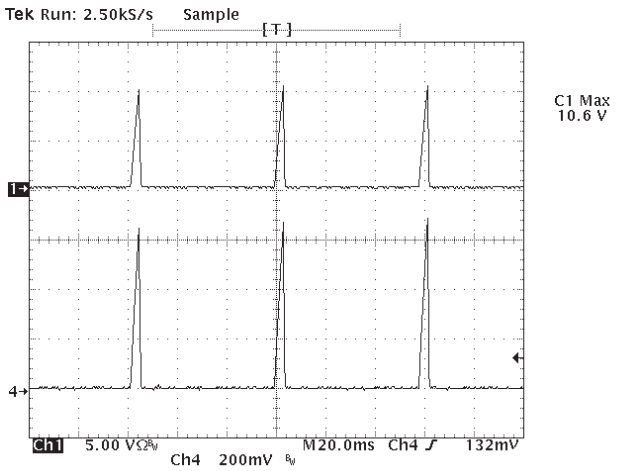

Figure 15: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

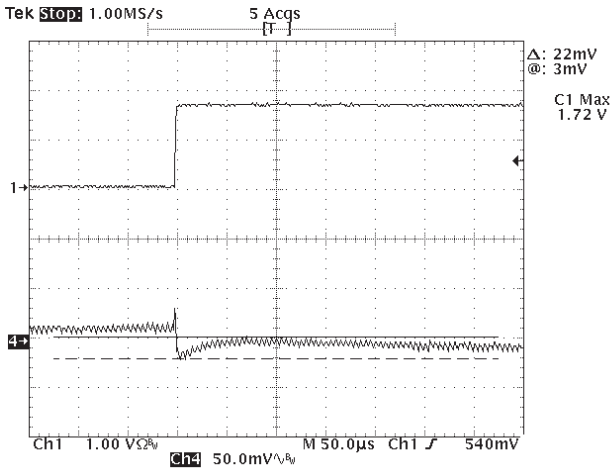

Figure 16: Transient Response 50-75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

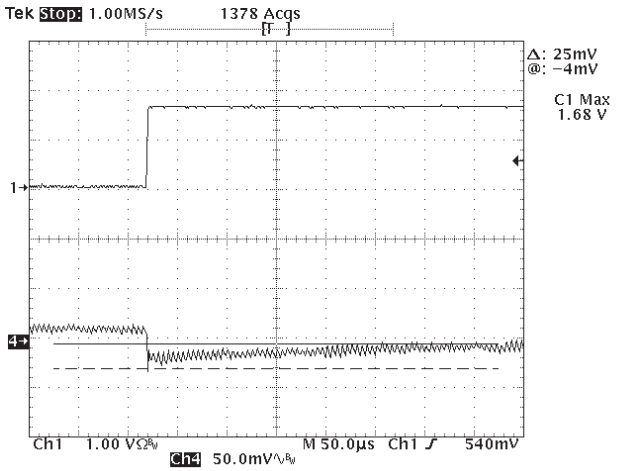

Figure 17: Transient Response 50-75% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

5V Model 1.8V Setpoint

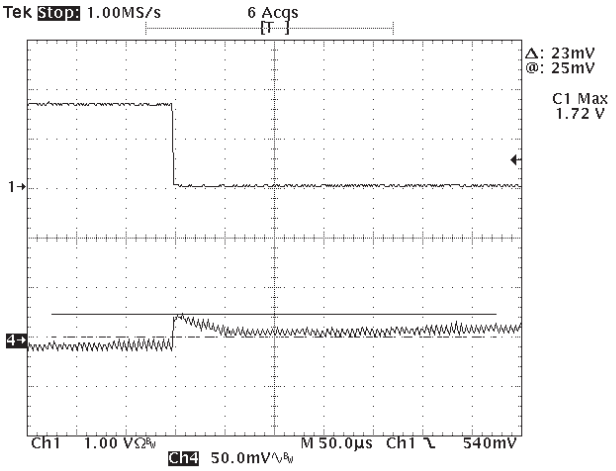

**Figure 18: Transient Response 75 - 50% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

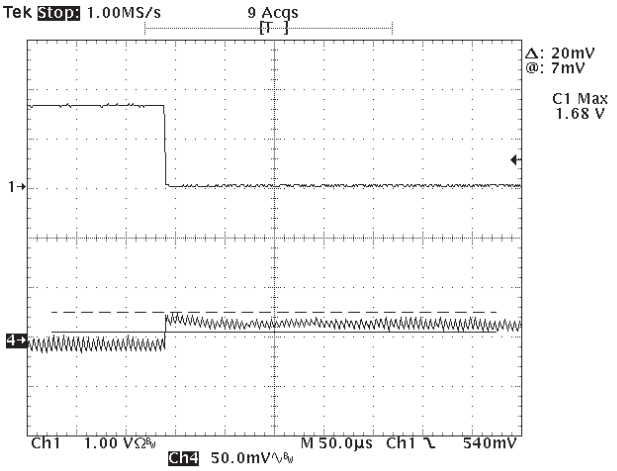

**Figure 19: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

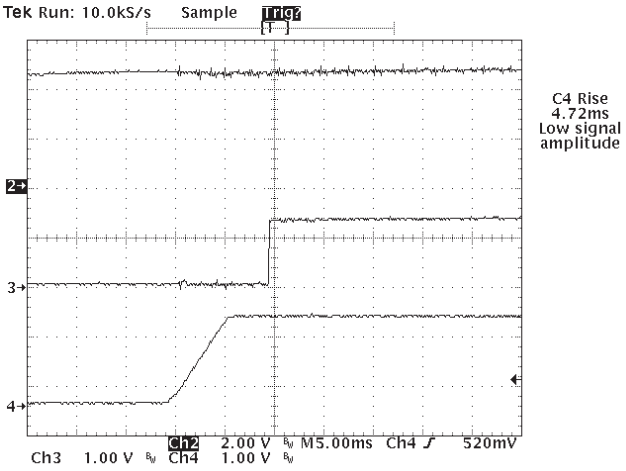

**Figure 20: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)**

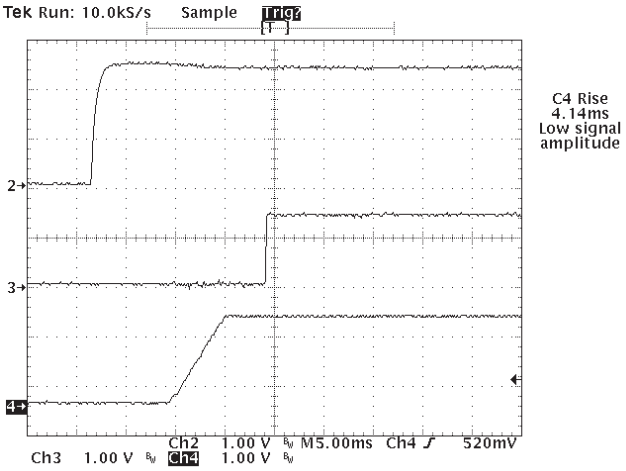

**Figure 21: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)**

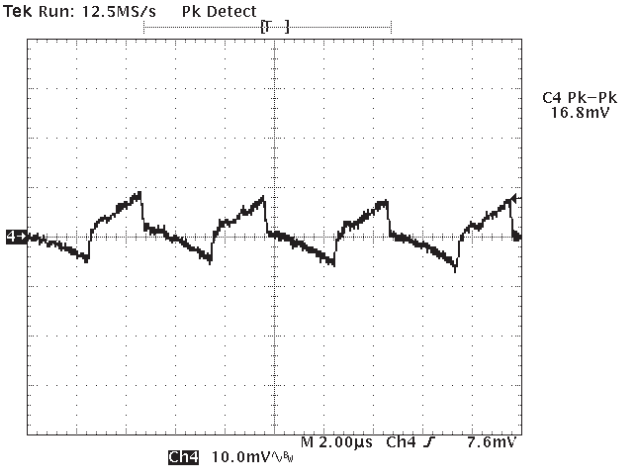

Figure 22: Typical Ripple and Noise

5V Model 3.3V Setpoint

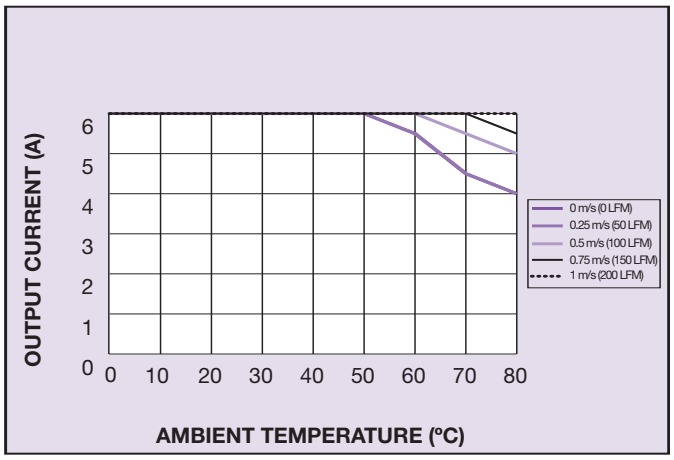

Figure 23: Thermal De-rating Curve

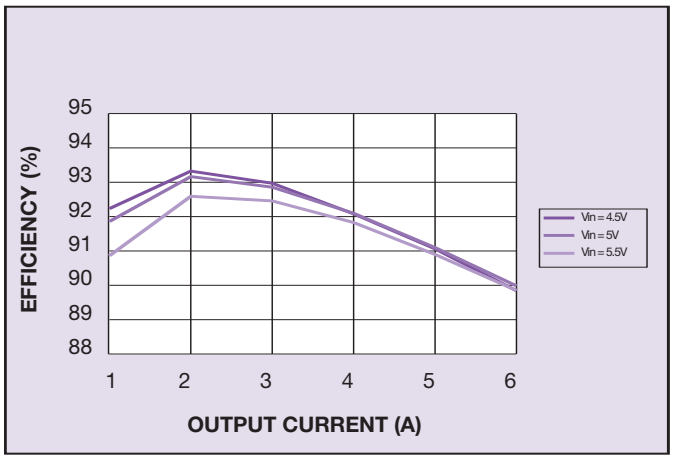

Figure 24: Efficiency when Sourcing

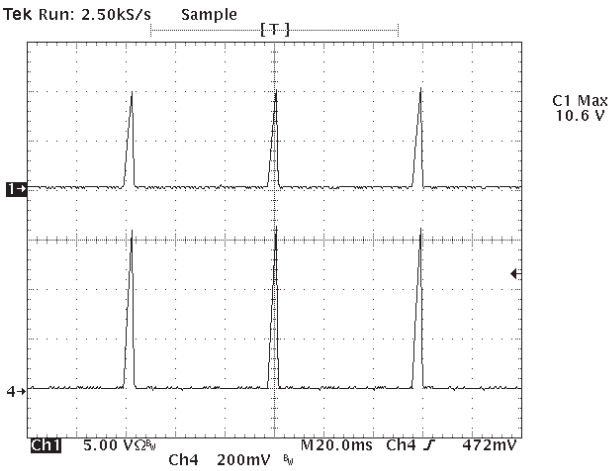

Figure 25: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

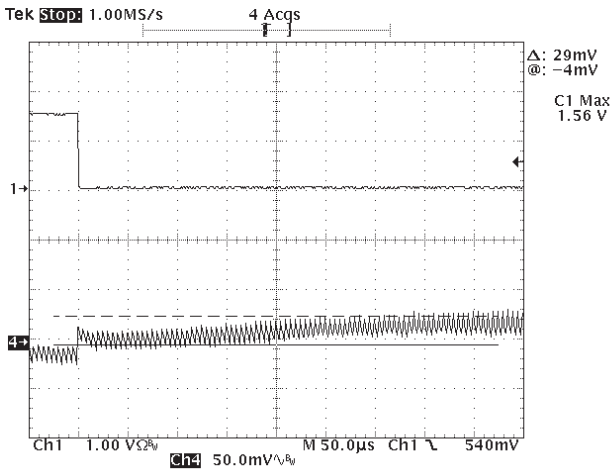

Figure 26: Transient Response 50-75% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

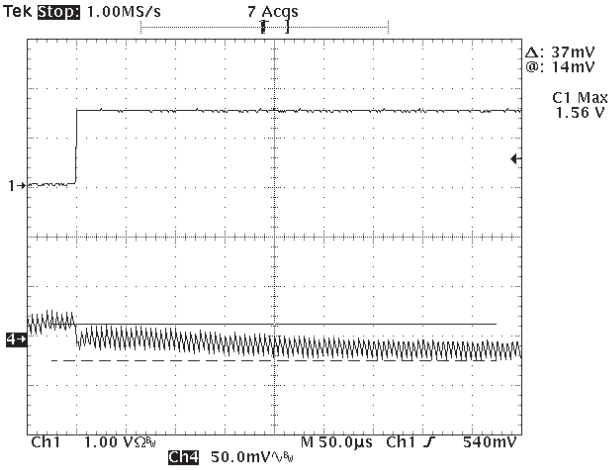

Figure 27: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

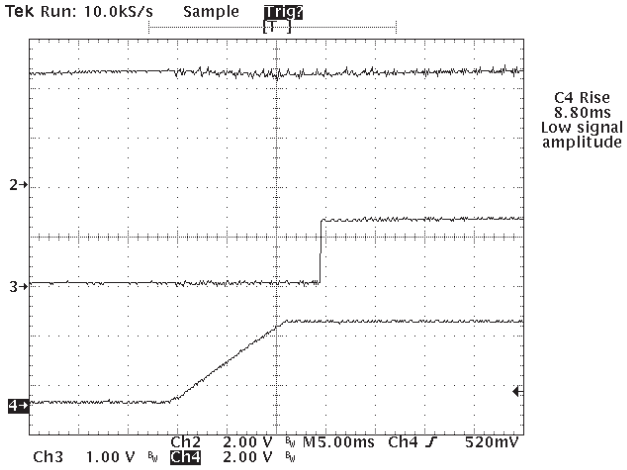

Figure 28: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)

5V Model 3.3V Setpoint

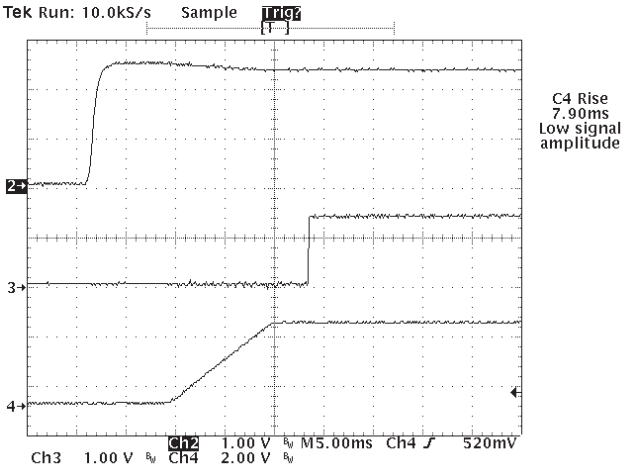

Figure 29: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)

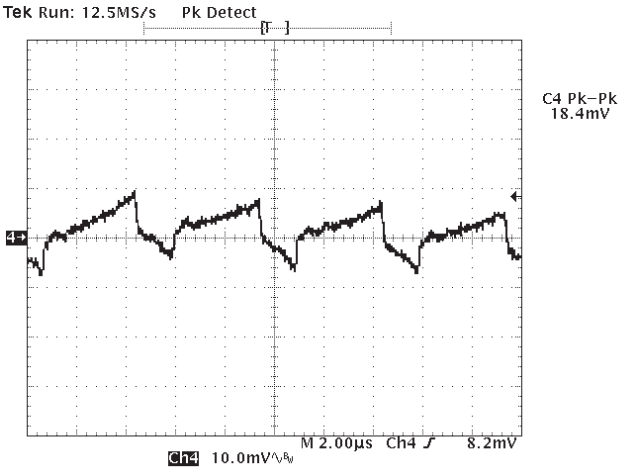

Figure 30: Typical Ripple and Noise

12V Model 0.9V Setpoint

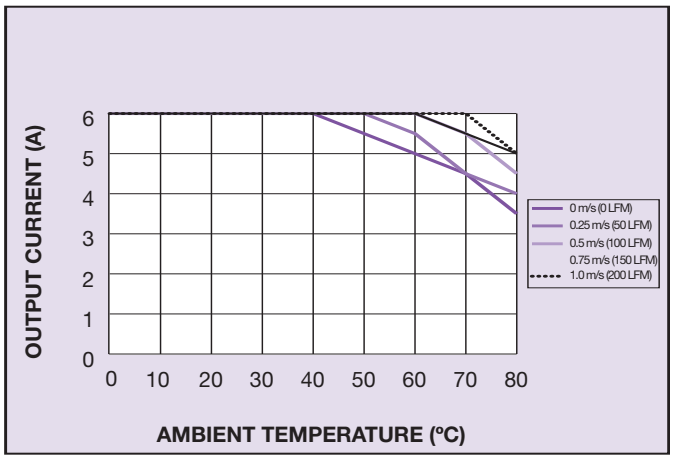

Figure 31: Thermal De-rating Curve

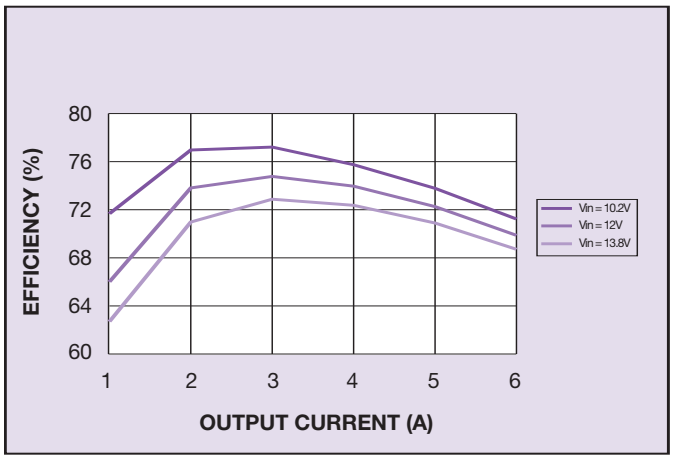

Figure 32: Efficiency when Sourcing

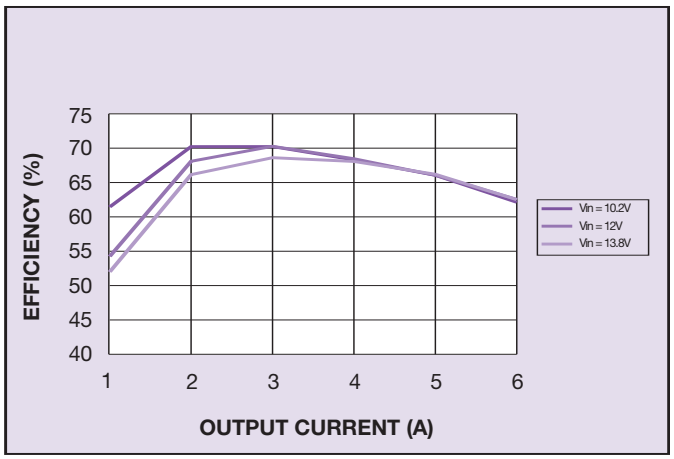

Figure 33: Efficiency when Sinking

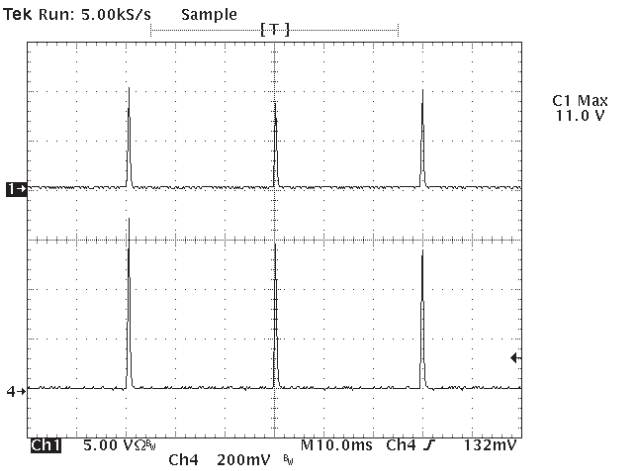

Figure 34: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

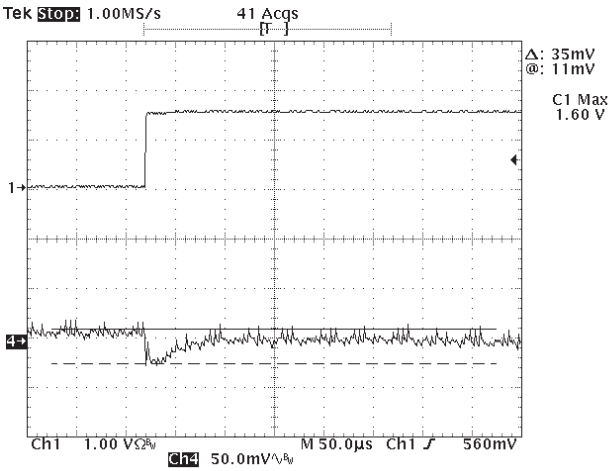

Figure 35: Transient Response 50-75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

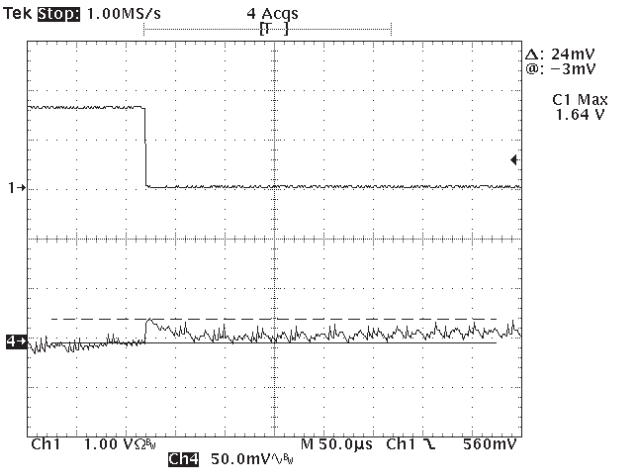

Figure 36: Transient Response 75-50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

12V Model 0.9V Setpoint

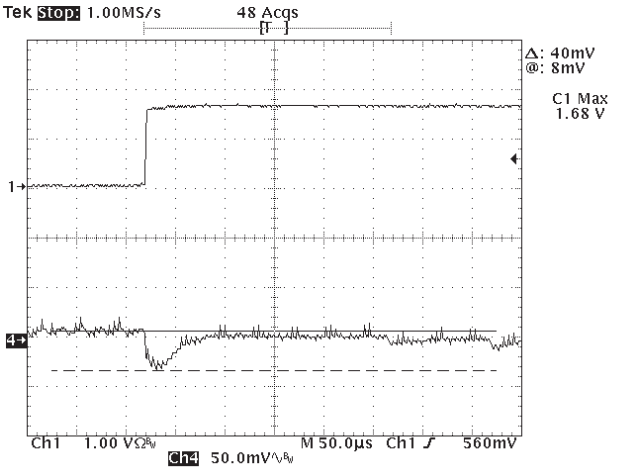

**Figure 37: Transient Response 50 - 75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

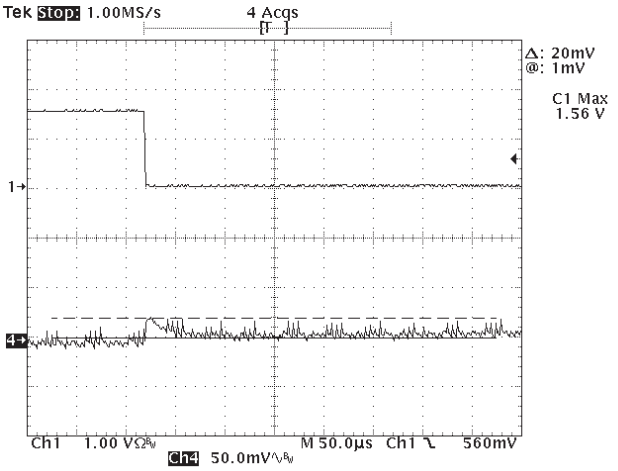

**Figure 38: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

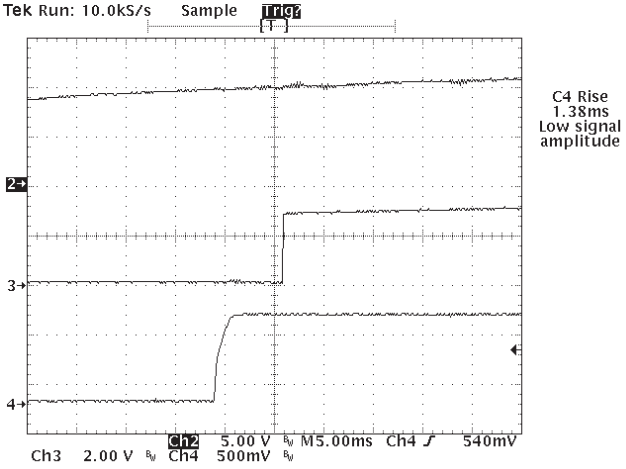

**Figure 39: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)**

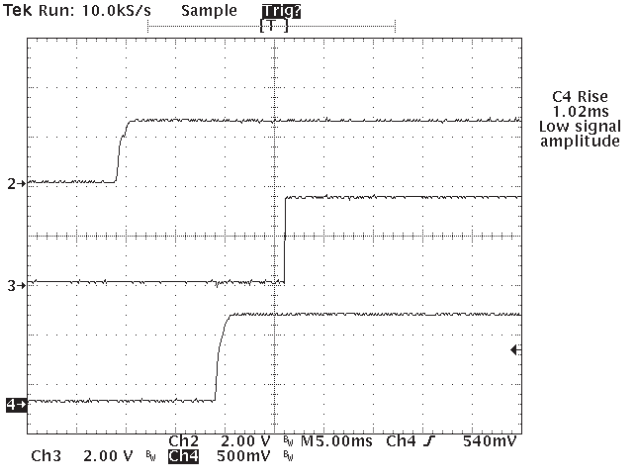

**Figure 40: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)**

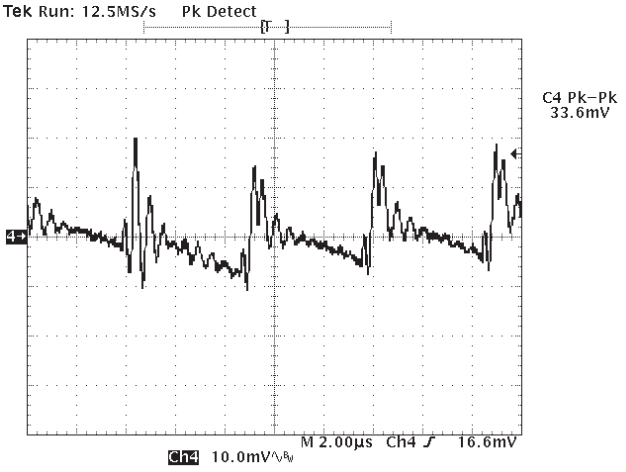

Figure 41: Typical Ripple and Noise

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12V Model 2.5V Setpoint

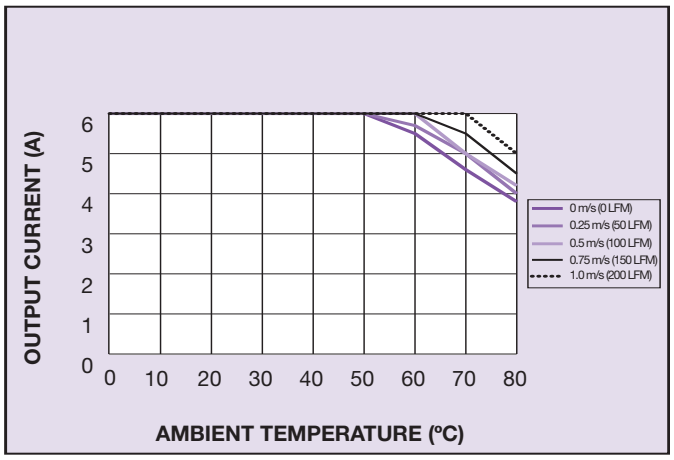

Figure 42: Thermal De-rating Curve

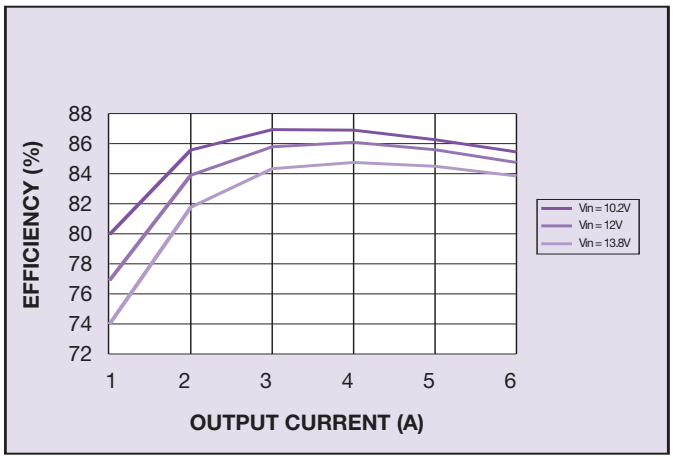

Figure 43: Efficiency when Sourcing

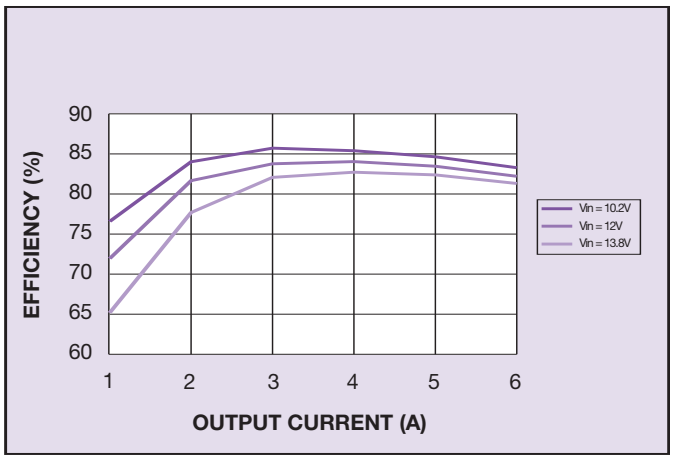

Figure 44: Efficiency when Sinking

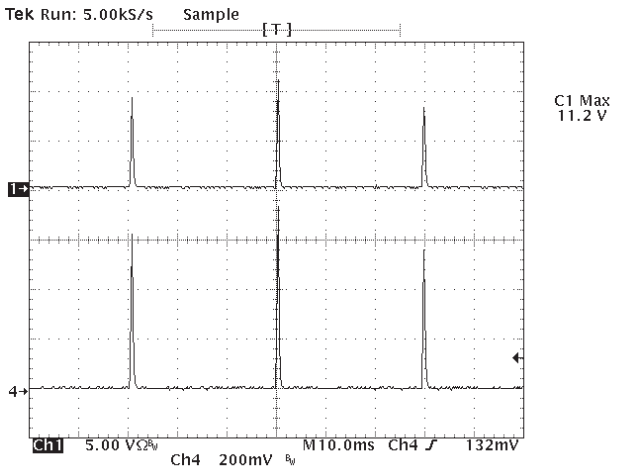

Figure 45: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

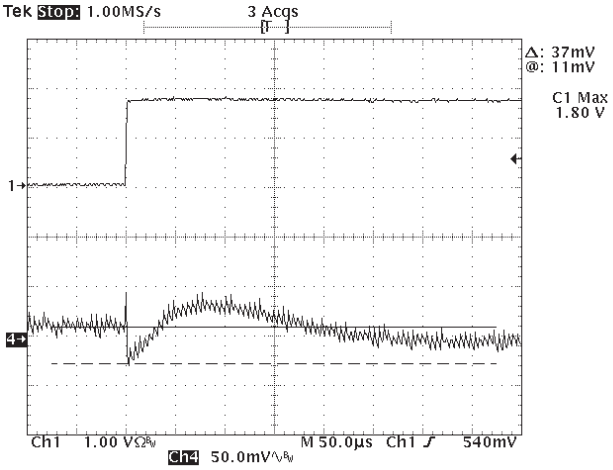

Figure 46: Transient Response 50-75% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

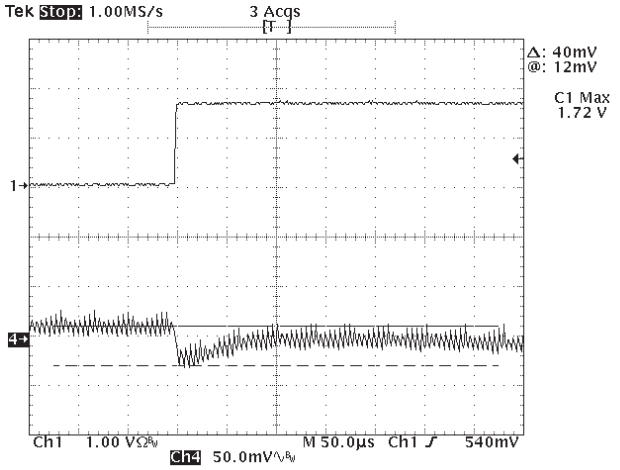

Figure 47: Transient Response 50-75% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

12V Model 2.5V Setpoint

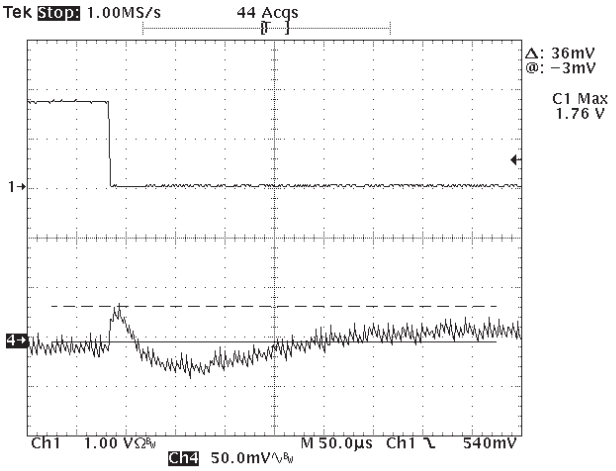

**Figure 48: Transient Response 75 - 50% (Sinking)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

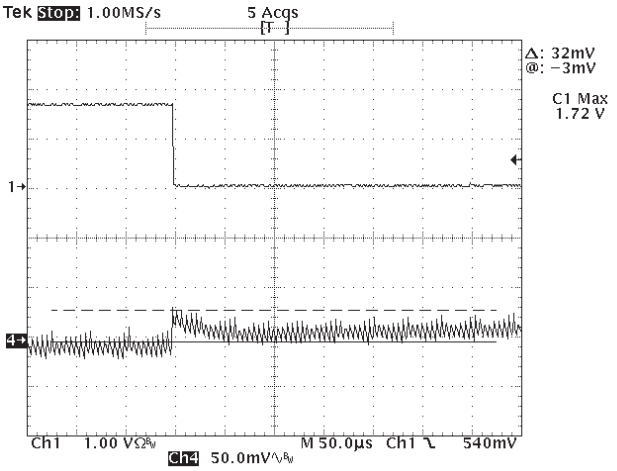

**Figure 49: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)**

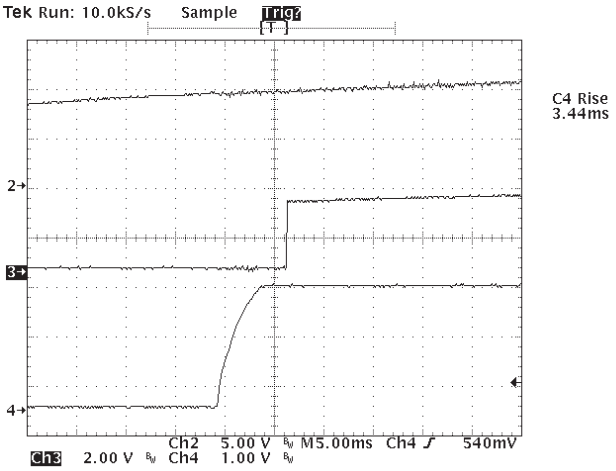

**Figure 50: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)**

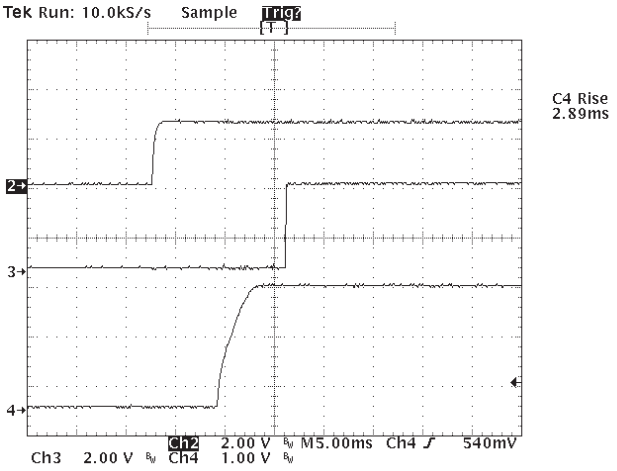

**Figure 51: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)**

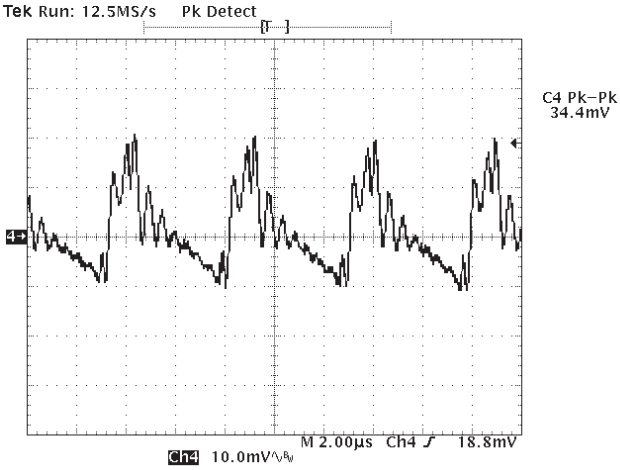

Figure 52: Typical Ripple and Noise

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12V Model 5V Setpoint

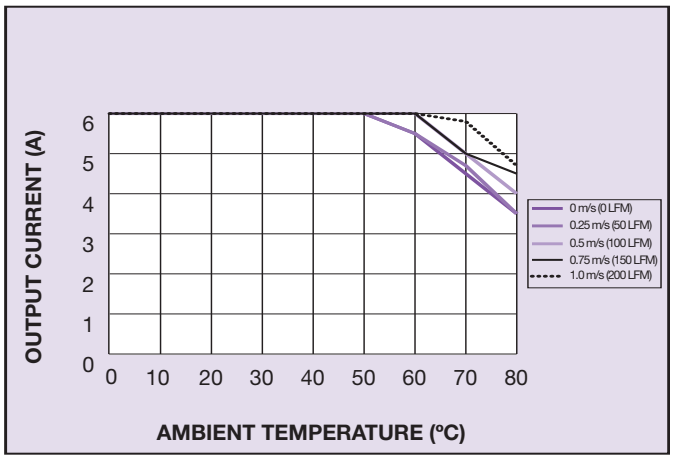

Figure 53: Thermal De-rating Curve

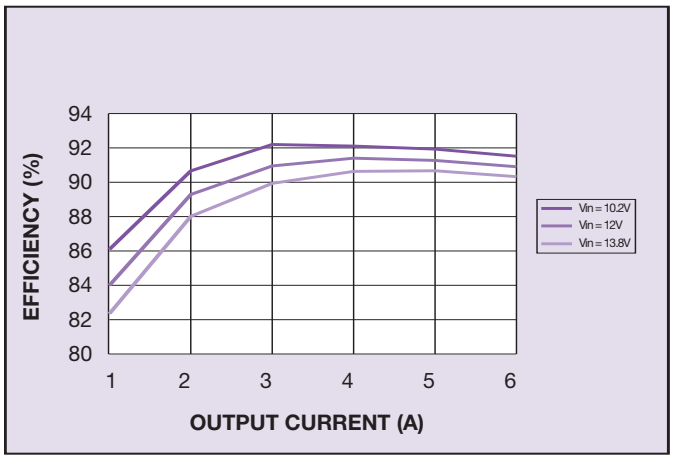

Figure 54: Efficiency when Sourcing

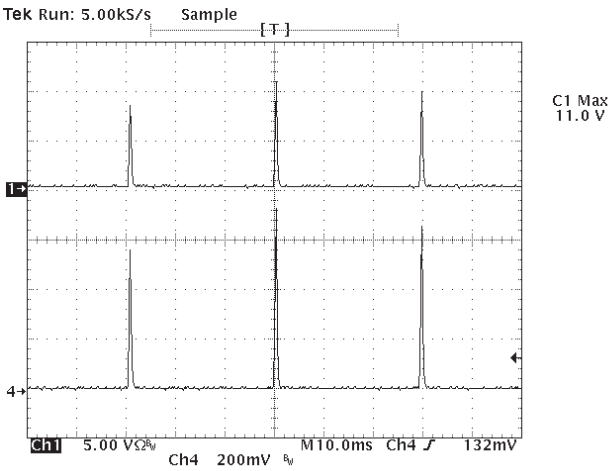

Figure 55: Short Circuit Characteristic
(Channel 1: Output Current at 5A/div, Channel 4: Output Voltage)

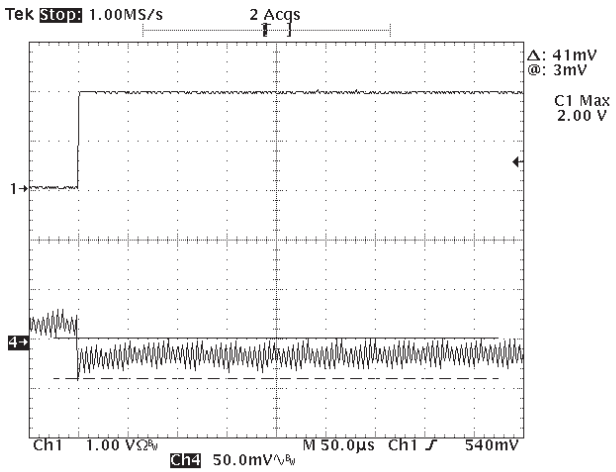

Figure 56: Transient Response 50-75% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

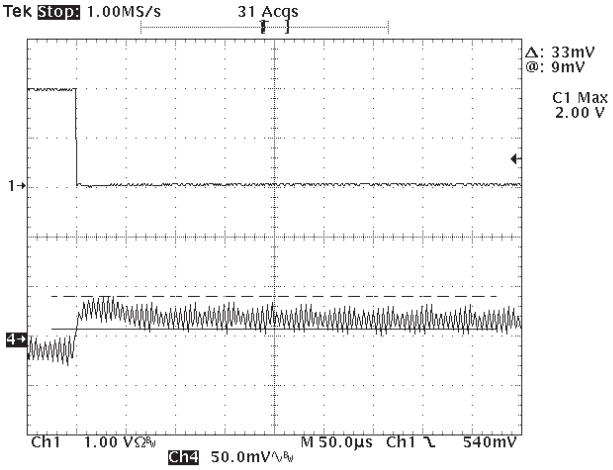

Figure 57: Transient Response 75 - 50% (Sourcing)
(Channel 1: Current load step at 1A/div,
Channel 4: Output Voltage deviation)

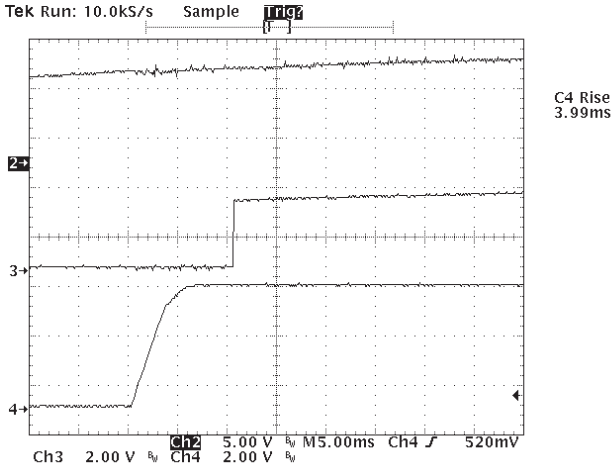

Figure 58: Typical Power Up
(Channel 2: DC Input, Channel 3: Power Good
Channel 4: Output Voltage)

12V Model 5V Setpoint

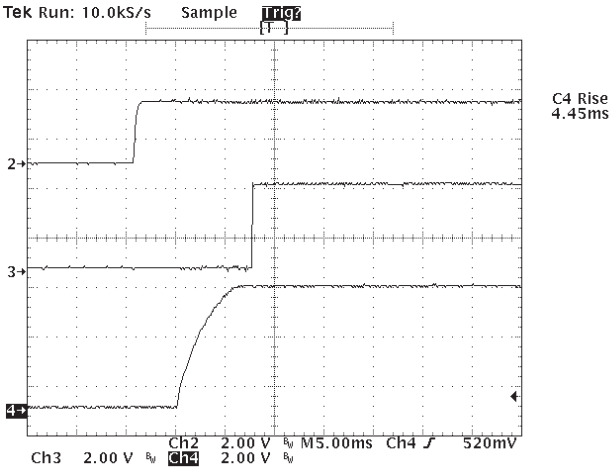

Figure 59: Control On/Off
(Channel 2: Remote ON/OFF, Channel 3: Power Good
Channel 4: Output Voltage)

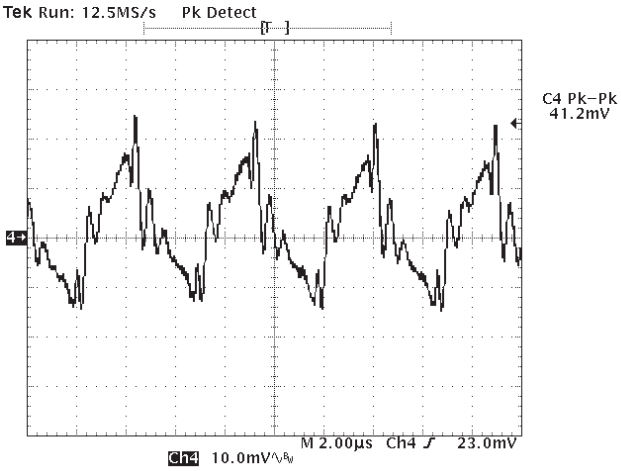

Figure 60: Typical Ripple and Noise

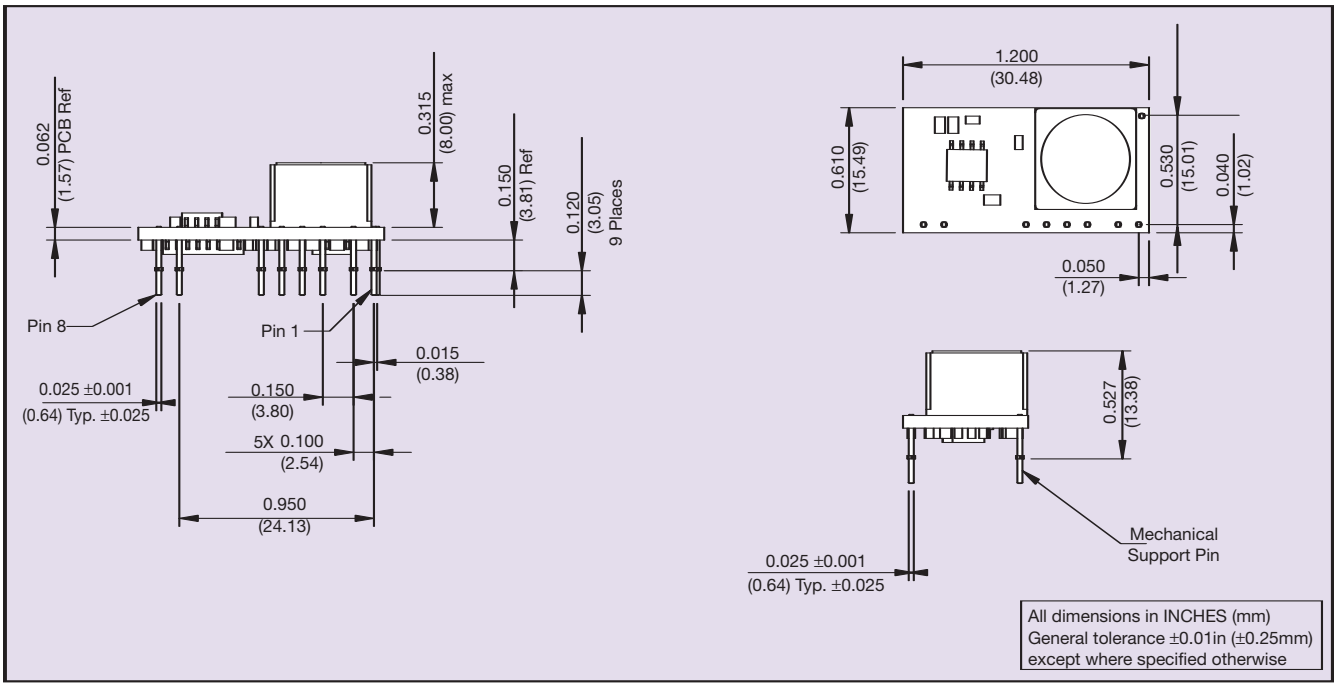

Figure 61: Mechanical Drawing - Horizontal

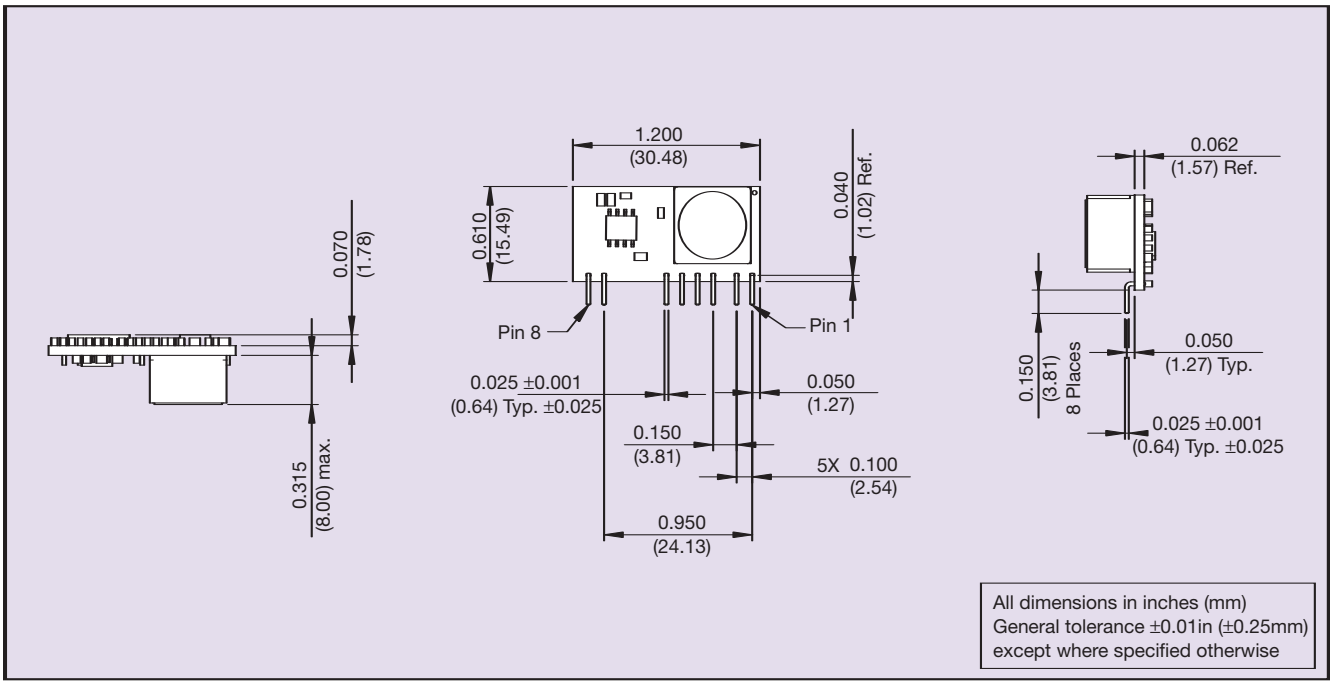

Figure 62: Mechanical Drawing - Vertical

Note 1

Thermal reference points are defined as the highest temperature measured at any one of the specified thermal reference point. See Figure 63: Thermal reference point.

Note 2

The control pin is referenced to Vin-

Note 3

The SIL 06C is supplied as standard with active High logic.
Control input pulled low: Unit Disabled
Control input left open: Unit Enabled

Note 4

Thermal reference set up: Unit mounted on an edge card test board 215mm x 115mm. Test board mounted vertically. For test details and recommended set-up see Application Note 131.

Note 5

3-200Hz, sweep at 1/2 octave/min from low to high frequency, and then from high to low. Thirty minute dwell at all resonant points.

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.

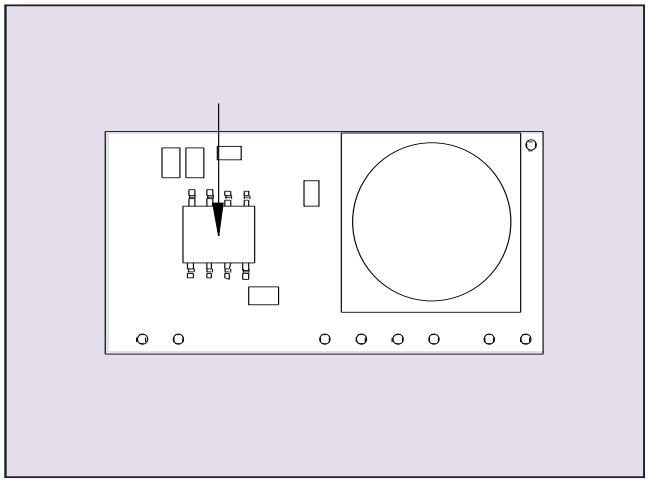

Figure 63: Thermal reference points

Pin Connections

Pin No.	Function
1	Vout
2	Trim
3	Ground
4	Power Good
5	Output Enable
6	Vin
7	Mechanical Support
8	Mechanical Support
9	Mechanical Support on Horizontal version only

Figure 64: Pinout Connections

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