

P R B X

POWERBOX Industrial Line
MAB06 Series
3W 2:1 Single and Dual Output
DC/DC Converter
Manual V1.1

Features

2-3 W isolated output

24-pin Dip package

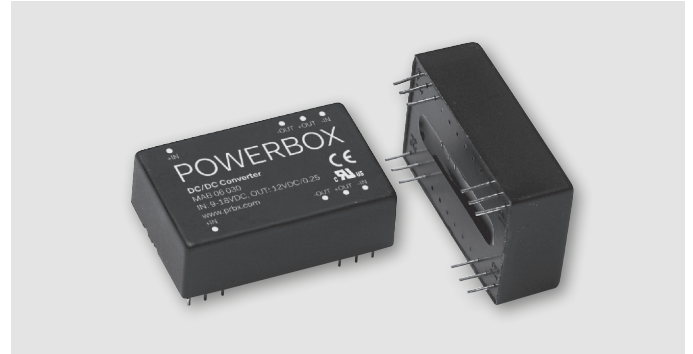
Efficiency to 80%

Continuous short circuit protection

2:1 input range

Regulated output

Pi input filter



Model ¹ Number	Input ² Voltage	Output		Output Current		Input Current		Efficiency ³		Capacitor Load Max	
		Voltage	Voltage	No Load	Full Load	No Load	Full Load	No Load	Full Load		
MAB06 003	4.5-6 VDC	4.5-9 VDC	3.3 VDC	600 mA	15 mA	15 mA	582 mA	550 mA	68%	72%	2200uF
MAB06 006	4.5-6 VDC	4.5-9 VDC	5 VDC	600 mA	15 mA	15 mA	800 mA	779 mA	75%	77%	2200uF
MAB06 009	4.5-6 VDC	4.5-9 VDC	12 VDC	250 mA	15 mA	15 mA	759 mA	750 mA	79%	80%	2200uF
MAB06 012	4.5-6 VDC	4.5-9 VDC	15 VDC	200 mA	15 mA	15 mA	779 mA	750 mA	77%	80%	2200uF
MAB06 015	4.5-6 VDC	4.5-9 VDC	±5 VDC	±300 mA	25 mA	25 mA	779 mA	779 mA	77%	77%	1000uF
MAB06 018	4.5-6 VDC	4.5-9 VDC	±12 VDC	±125 mA	25 mA	25 mA	789 mA	750 mA	76%	80%	1000uF
MAB06 021	4.5-6 VDC	4.5-9 VDC	±15 VDC	±100 mA	25 mA	25 mA	800 mA	750 mA	75%	80%	1000uF
MAB06 024	9-18 VDC		3.3 VDC	600 mA	7.5 mA	7.5 mA	229 mA	212 mA	72%	78%	2200uF
MAB06 027	9-18 VDC		5 VDC	600 mA	7.5 mA	7.5 mA	325 mA	309 mA	77%	81%	2200uF
MAB06 030	9-18 VDC		12 VDC	250 mA	7.5 mA	10 mA	313 mA	298 mA	80%	84%	2200uF
MAB06 033	9-18 VDC		15 VDC	200 mA	7.5 mA	10 mA	316 mA	294 mA	79%	85%	2200uF
MAB06 036	9-18 VDC		±5 VDC	±300 mA	12 mA	15 mA	325 mA	305 mA	77%	82%	1000uF
MAB06 039	9-18 VDC		±12 VDC	±125 mA	12 mA	12 mA	325 mA	298 mA	77%	84%	1000uF
MAB06 042	9-18 VDC		±15 VDC	±100 mA	12 mA	15 mA	316 mA	294 mA	79%	85%	1000uF
MAB06 045	18-36 VDC		3.3 VDC	600 mA	5 mA	5 mA	111 mA	106 mA	74%	78%	2200uF
MAB06 048	18-36 VDC		5 VDC	600 mA	5 mA	7.5 mA	158 mA	152 mA	79%	82%	2200uF
MAB06 051	18-36 VDC		12 VDC	250 mA	5 mA	7.5 mA	156 mA	145 mA	80%	86%	2200uF
MAB06 054	18-36 VDC		15 VDC	200 mA	5 mA	7.5 mA	152 mA	145 mA	82%	86%	2200uF
MAB06 057	18-36 VDC		±5 VDC	±300 mA	7.5 mA	7.5 mA	162 mA	152 mA	77%	82%	1000uF
MAB06 060	18-36 VDC		±12 VDC	±125 mA	7.5 mA	10 mA	158 mA	147 mA	79%	85%	1000uF
MAB06 063	18-36 VDC		±15 VDC	±100 mA	7.5 mA	10 mA	154 mA	145 mA	81%	86%	1000uF
MAB06 066	36-72 VDC		3.3 VDC	600 mA	3 mA	3 mA	57 mA	52 mA	72%	79%	2200uF
MAB06 069	36-72 VDC		5 VDC	600 mA	2 mA	3 mA	78 mA	74 mA	79%	84%	2200uF
MAB06 072	36-72 VDC		12 VDC	250 mA	2 mA	3 mA	78 mA	73 mA	80%	86%	2200uF
MAB06 075	36-72 VDC		15 VDC	200 mA	2 mA	5 mA	78 mA	73 mA	80%	86%	2200uF
MAB06 078	36-72 VDC		±5 VDC	±300 mA	3 mA	5 mA	80 mA	74 mA	78%	85%	1000uF
MAB06 081	36-72 VDC		±12 VDC	±125 mA	3 mA	5 mA	80 mA	72 mA	78%	87%	1000uF
MAB06 084	36-72 VDC		±15 VDC	±100 mA	3 mA	5 mA	80 mA	72 mA	78%	87%	1000uF

Note:

1. Suffix "-E" of the models are high efficiency and wide operating temperature version.

2. Nominal Input Voltage is 5, 12, 24 or 48VDC.

3. Typical value at nominal input voltage and full load.

4. All specifications typical at nominal line, full load and 25°C unless otherwise notes.

Specifications

Input Specifications

Parameters	Min	Nominal	Max	Unit	Note
Input voltage range	4.5	5	6.0	VDC	
	9	12	18	VDC	
	18	24	36	VDC	
	36	48	72	VDC	
Input filter					Pi-filter

Output Specifications

Parameters	Max	Unit	Note
Voltage accuracy	2.0	%	
Voltage balance (Dual)	1.0	%	
Temperature coefficient	0.05	%/°C	
Ripple and noise 20MHz BW	100	mVrms	3.3V, 5V output
	1%	Vp-p	12V, 15V output
Short circuit protection			Continuous
Line regulation, single/dual	0.5	%	From high line to low line
Load regulation, single	0.5	%	From full load to 10% load
	1	%	From full load to 25% load

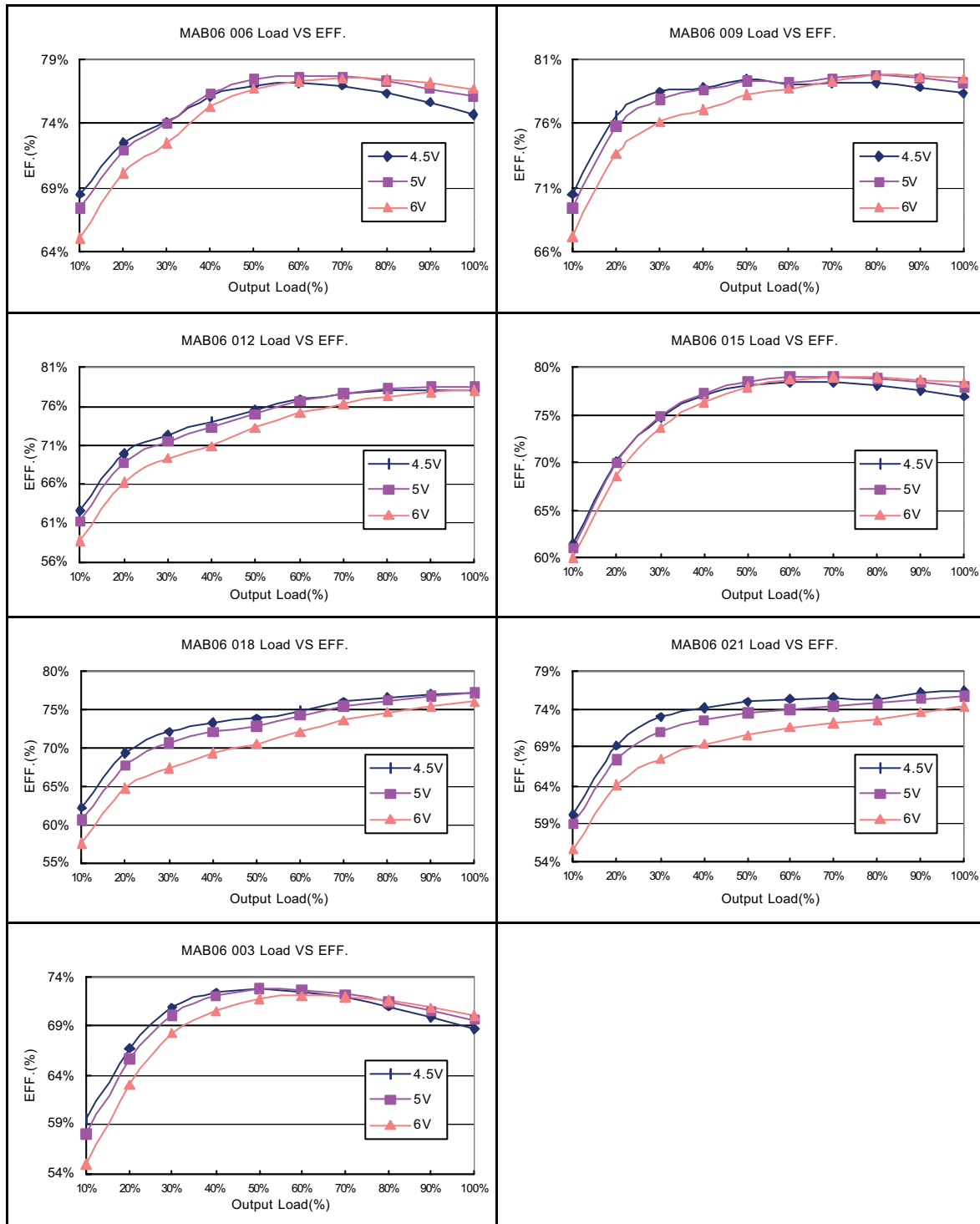
General Specifications

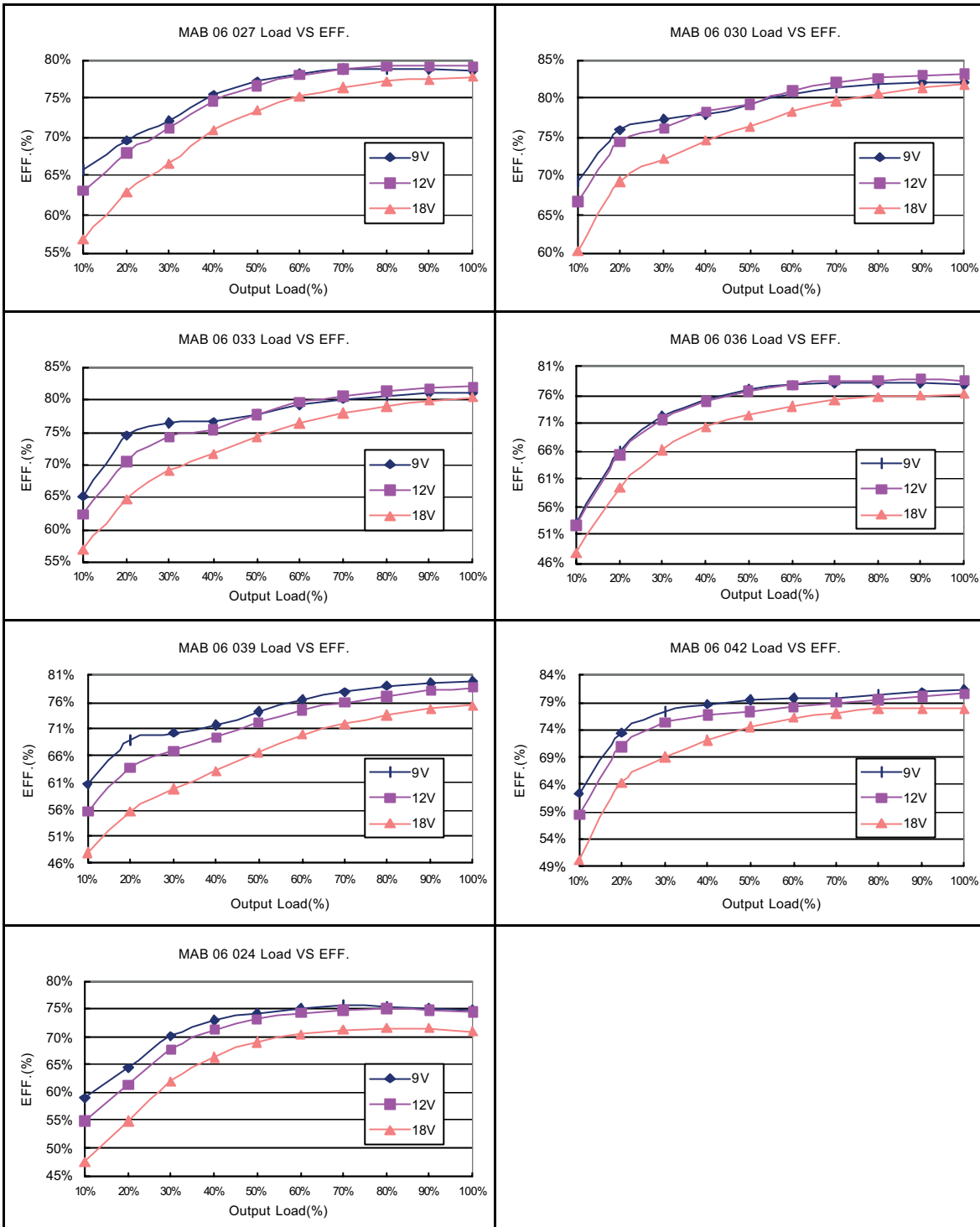
Parameters	Min	Max	Unit	Note
Isolation voltage input to output	500		VDC	Standard models
	1500		VDC	Suffix "HM" models
	3000		VDC	Suffix "H" models
Isolation resistance	10 ⁹		Ohms	
Switching frequency	100		KHz	
Operating temperature range	-25	+71	°C	
Case temperature		95	°C	Plastic case
		100	°C	Copper case
Cooling				Free air convection
Storage temperature range	-40	100	°C	
Case material standard models				Non-conductive black plastic
Case material "M" models				Black coated copper with non-conductive base
Case dimensions				1.25 x 0.8 x 0.4 inches (31.8 x 20.3 x 10.2 mm)

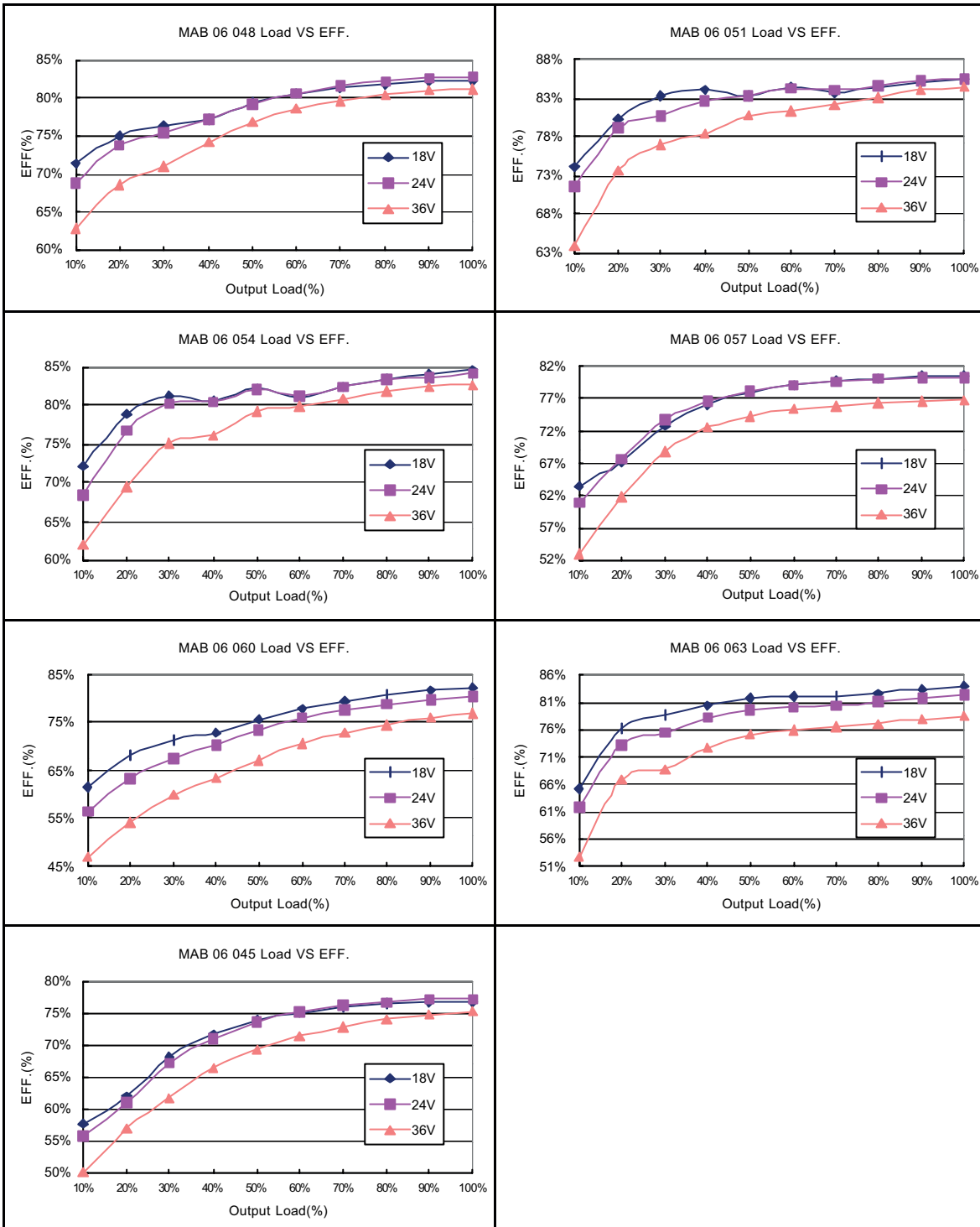
General Information

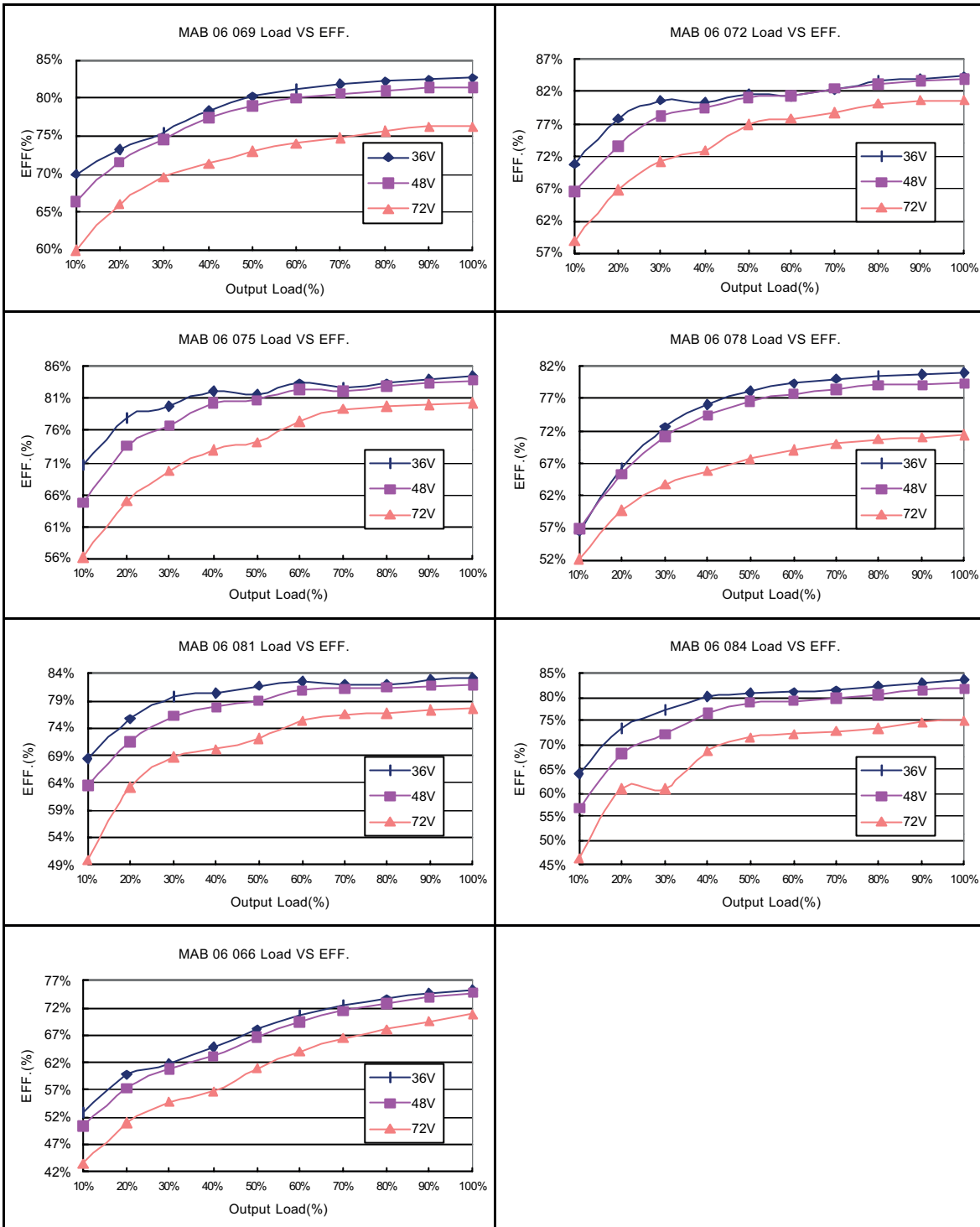
The MAB06 unit has many operational characterized aspects, including efficiency, start up delay time, overshoot, output ripple & noise, dynamic response to load , and over current protection .

Efficiency



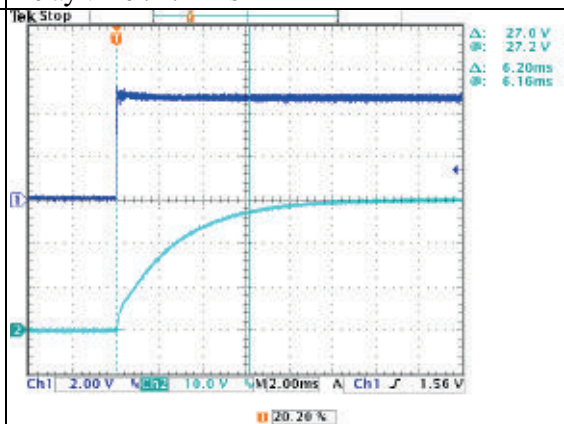
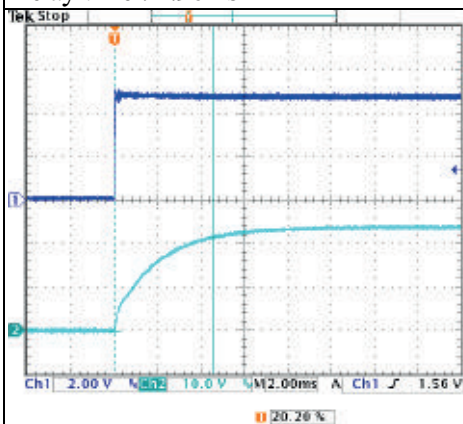
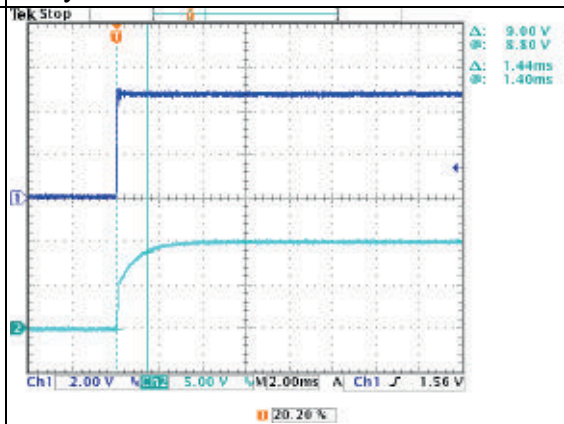
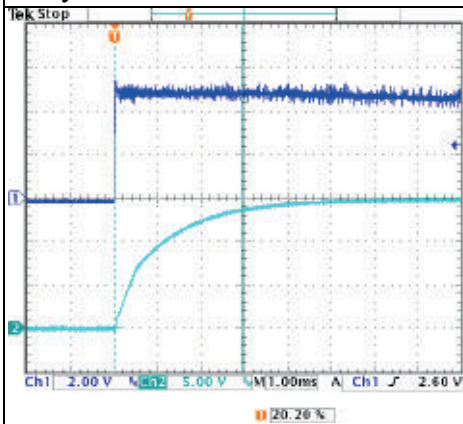
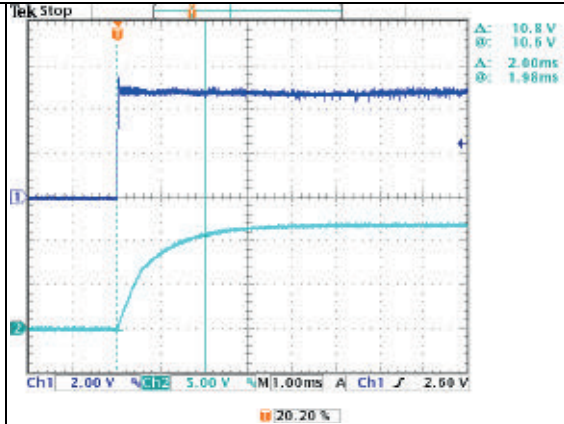
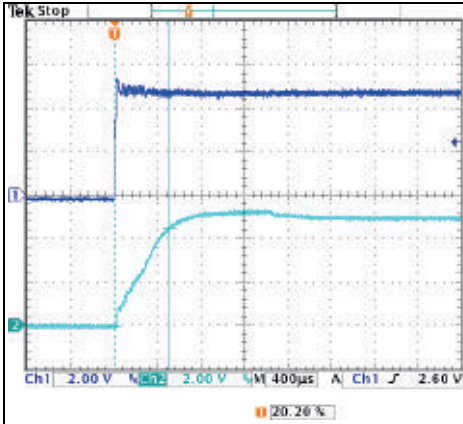


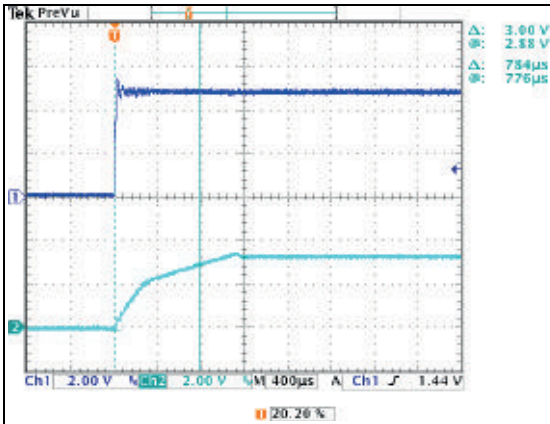




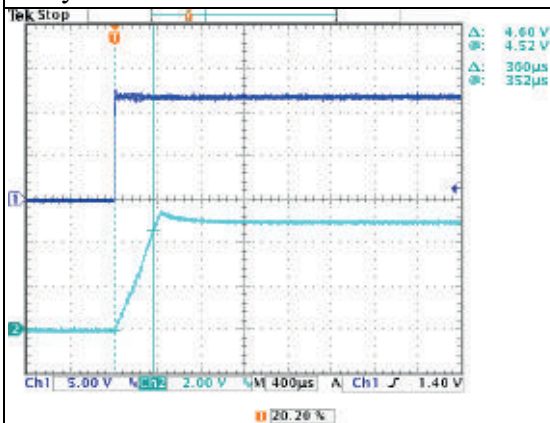
Start Up Delay Time

Start up input power, measuring the time between input power is turn on and output voltage go within 90% Vout. At nominal input and maximum load.

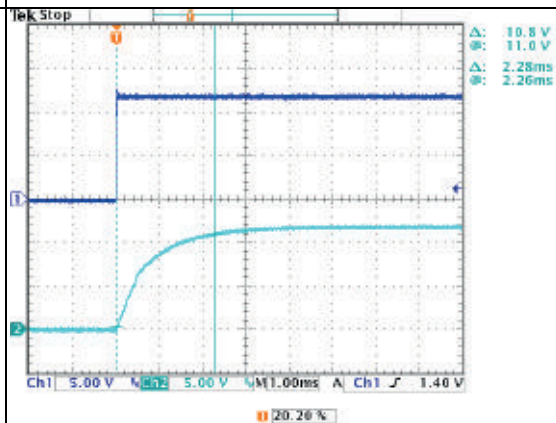




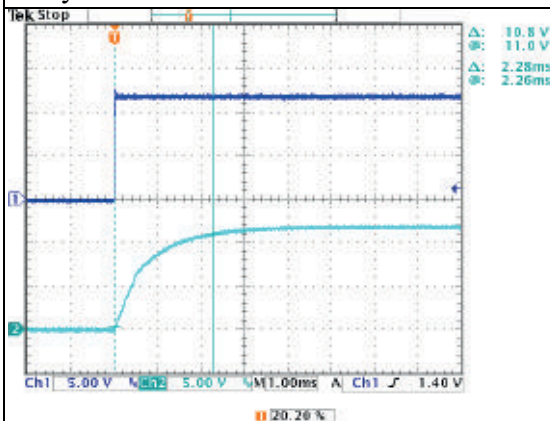
Model : MAB 06 003
Ch1 : Vin Ch2 : Vout
Delay time : 784µs



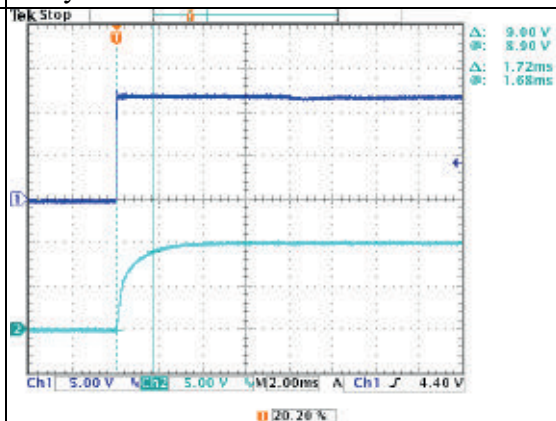
Model : MAB 06 027
Ch1 : Vin Ch2 : Vout
Delay time : 360µs



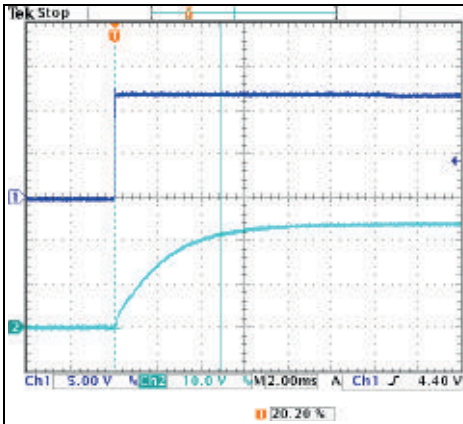
Model : MAB 06 030
Ch1 : Vin Ch2 : Vout
Delay time : 2.28ms



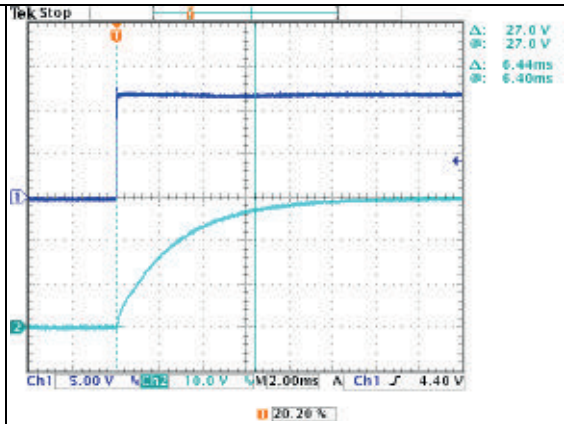
Model : MAB 06 033
Ch1 : Vin Ch2 : Vout
Delay time : 2.28ms



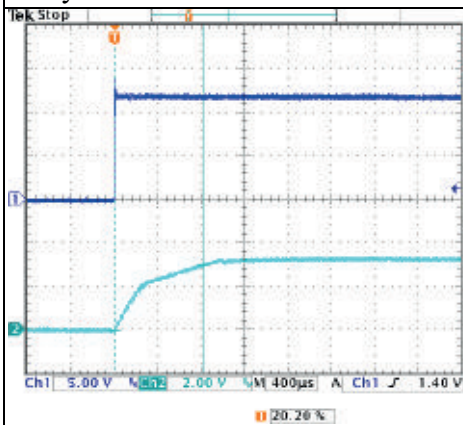
Model : MAB 06 036
Ch1 : Vin Ch2 : Vout
Delay time : 1.72ms



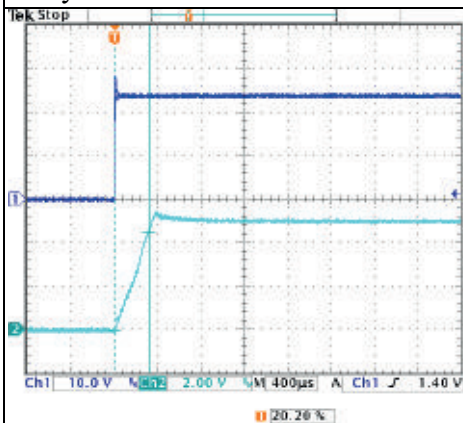
Model : MAB 06 039
Ch1 : Vin Ch2 : Vout
Delay time : 4.88ms



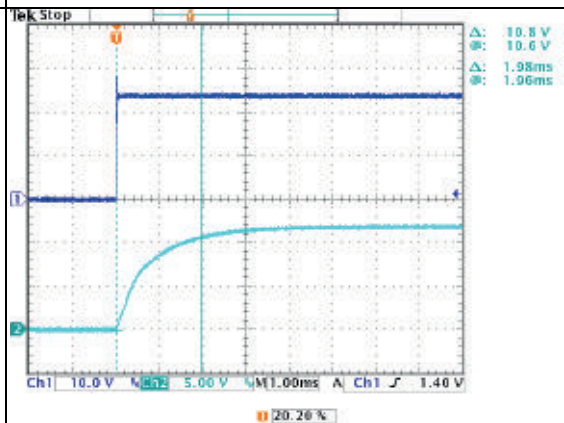
Model : MAB 06 042
Ch1 : Vin Ch2 : Vout
Delay time : 6.44ms



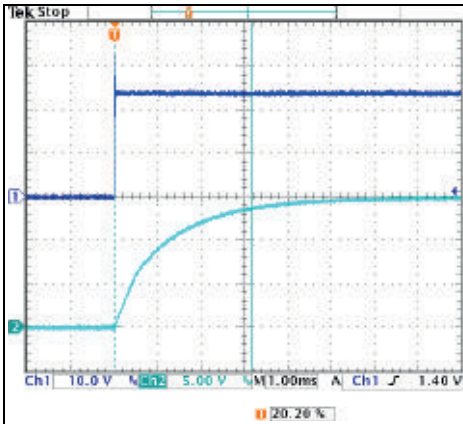
Model : MAB 06 024
Ch1 : Vin Ch2 : Vout
Delay time : 832µs



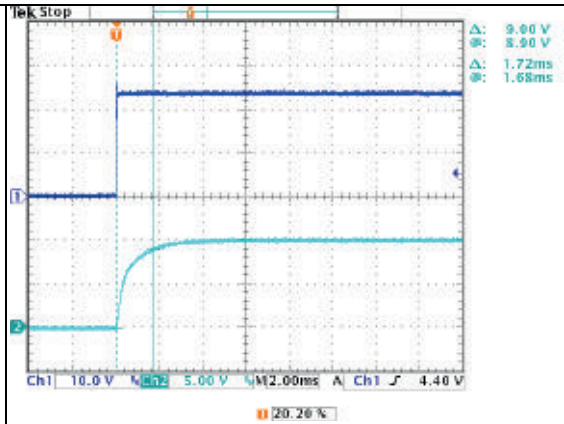
Model : MAB 06 048
Ch1 : Vin Ch2 : Vout
Delay time : 320µs



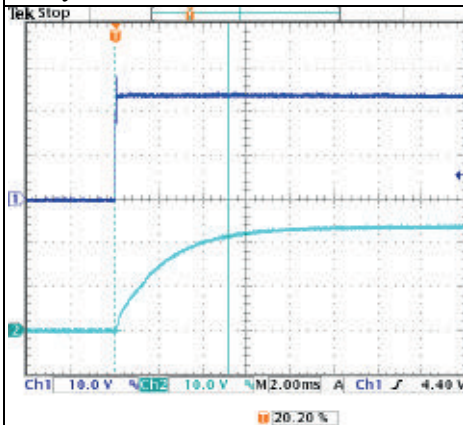
Model : MAB 06 051
Ch1 : Vin Ch2 : Vout
Delay time : 1.98ms



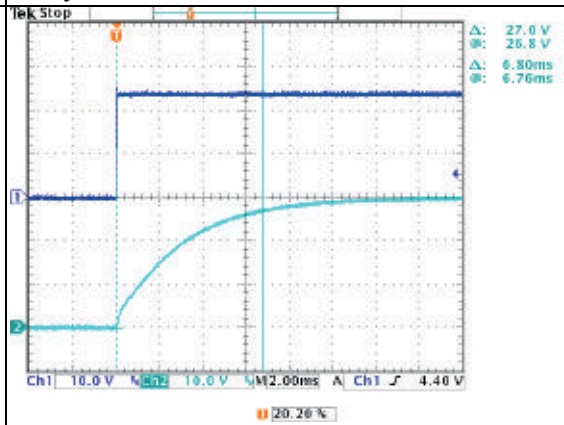
Model : MAB 06 054
Ch1 : Vin Ch2 : Vout
Delay time : 3.16ms



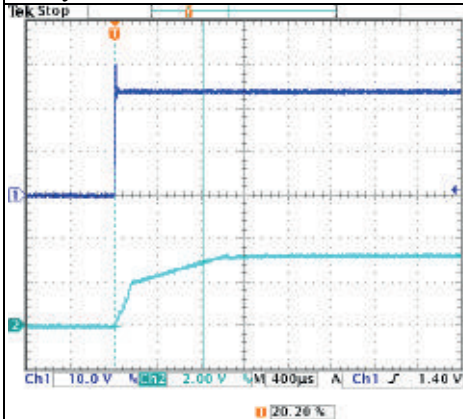
Model : MAB 06 057
Ch1 : Vin Ch2 : Vout
Delay time : 1.72ms



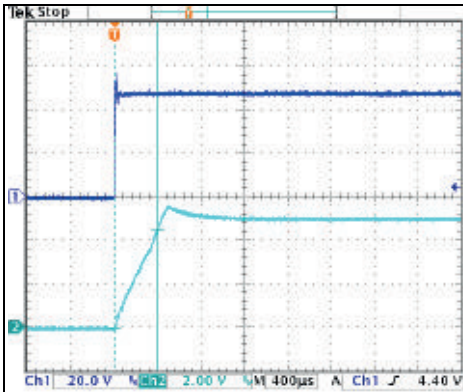
Model : MAB 06 060
Ch1 : Vin Ch2 : Vout
Delay time : 5.20ms



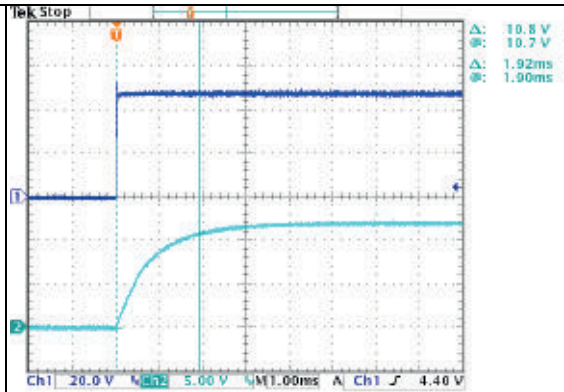
Model : MAB 06 063
Ch1 : Vin Ch2 : Vout
Delay time : 6.80ms



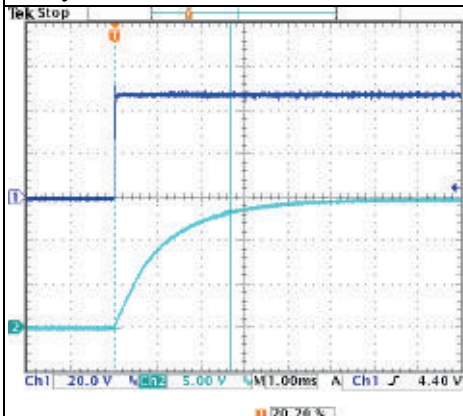
Model : MAB 06 045
Ch1 : Vin Ch2 : Vout
Delay time : 832µs



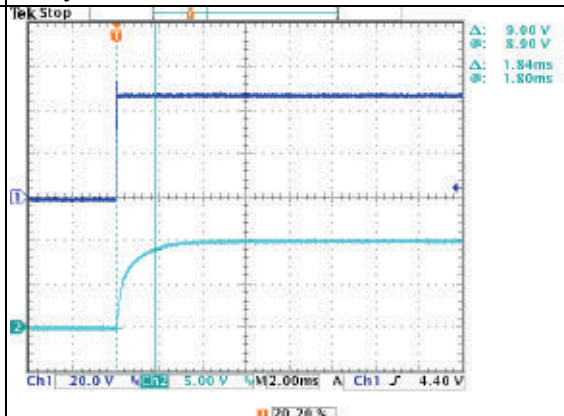
Model : MAB 06 069
Ch1 : Vin Ch2 : Vout
Delay time : 400µs



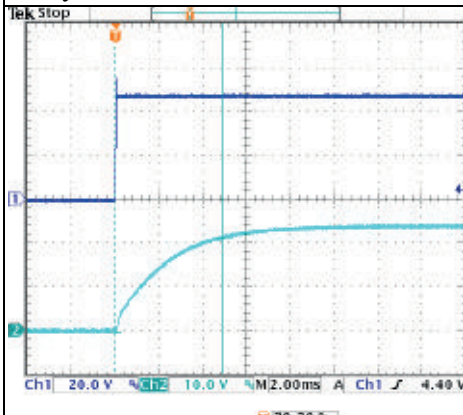
Model : MAB 06 072
Ch1 : Vin Ch2 : Vout
Delay time : 1.92ms



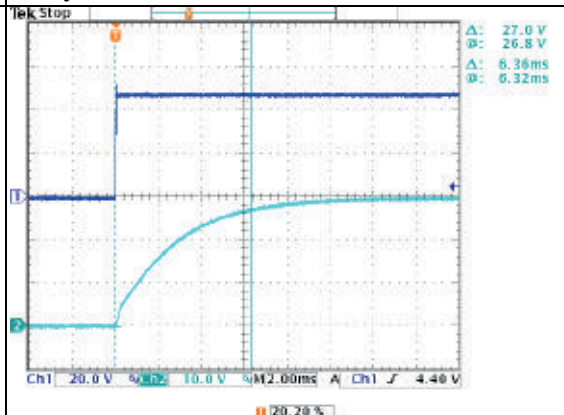
Model : MAB 06 075
Ch1 : Vin Ch2 : Vout
Delay time : 2.68ms



Model : MAB 06 078
Ch1 : Vin Ch2 : Vout
Delay time : 1.84ms

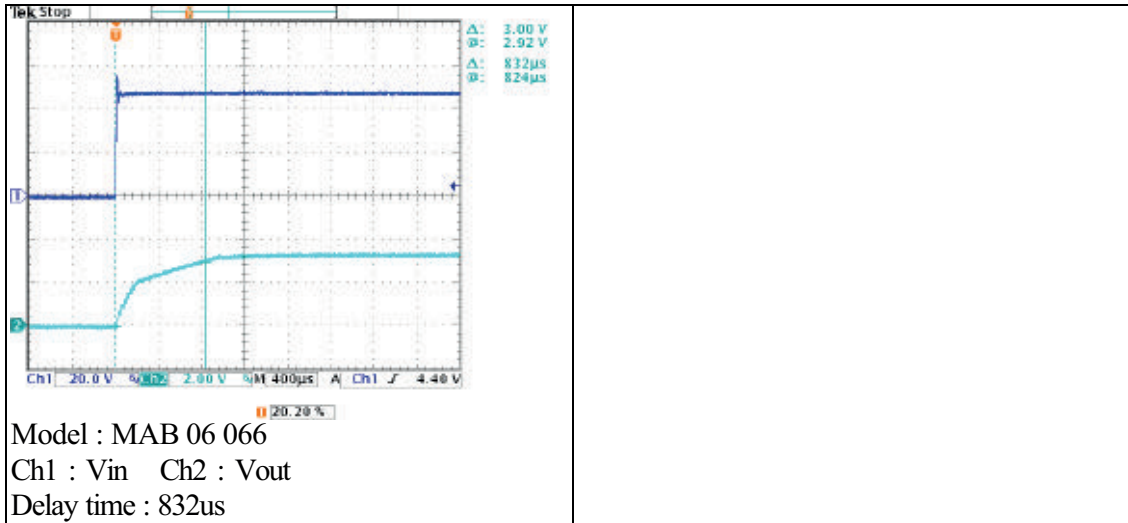


Model : MAB 06 081
Ch1 : Vin Ch2 : Vout
Delay time : 4.92ms



Model : MAB 06 084
Ch1 : Vin Ch2 : Vout
Delay time : 6.36ms

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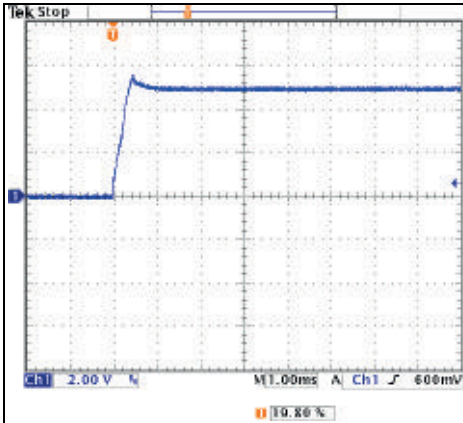


Overshoot

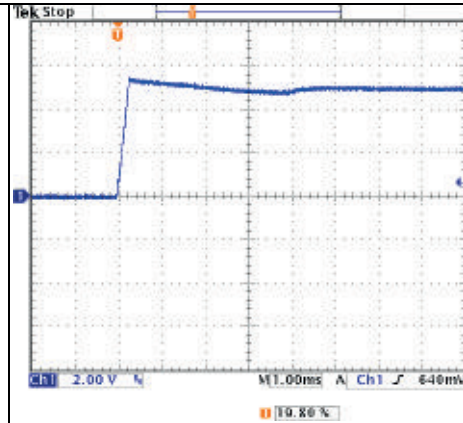
Start up input power, measuring the deviation which over the output. At nominal input , minimum load and maximum load.

Rise Time

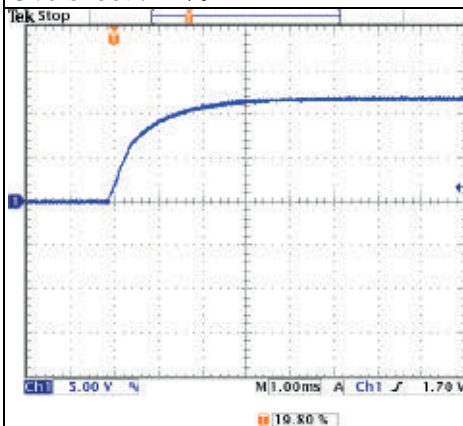
Measuring the time between 10%-Vout to 90%-Vout. At nominal input , minimum load and maximum load.



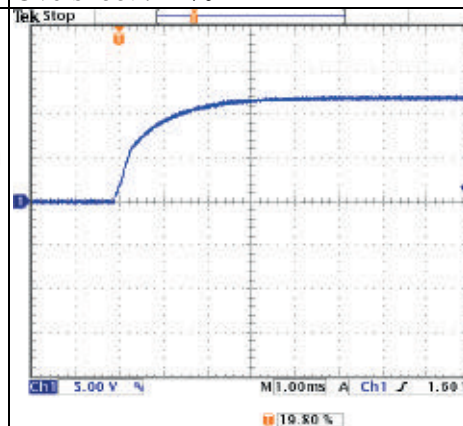
Model : MAB 06 006
Ch1 : Vout (maximum load)
Rise time : 324.8us
Overshoot : 12%



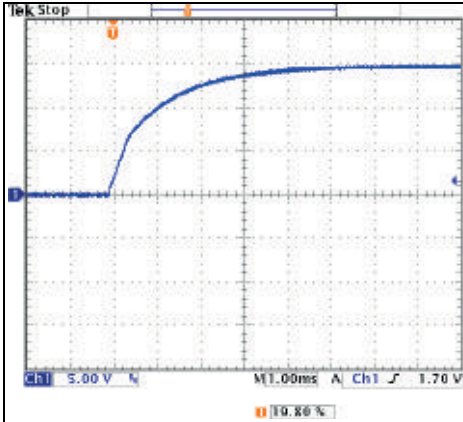
Model :MAB 06 006
Ch1 : Vout (minimum load)
Rise time : 223.9us
Overshoot : 12%



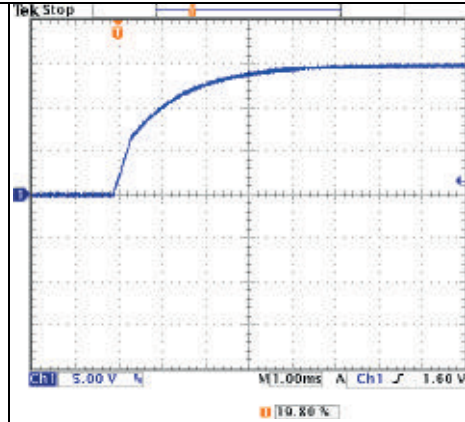
Model : MAB 06 009
Ch1 : Vout (maximum load)
Rise time : 1.731ms
Overshoot : zero%



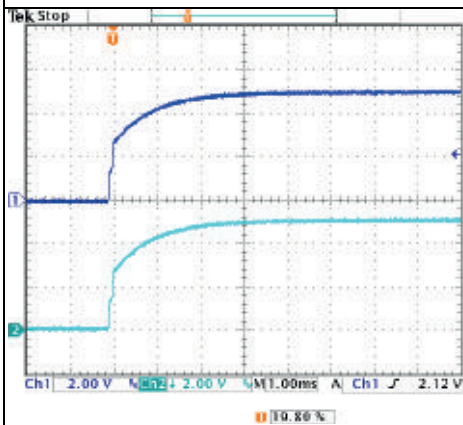
Model : MAB 06 009
Ch1 : Vout (minimum load)
Rise time : 1.721ms
Overshoot : zero%



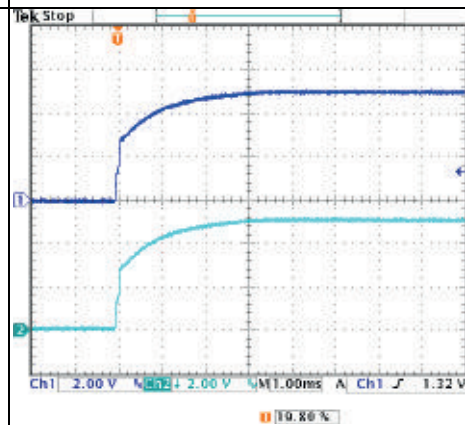
Model : MAB 06 012
Ch1 : Vout (maximum load)
Rise time : 2.221ms
Overshoot : zero%



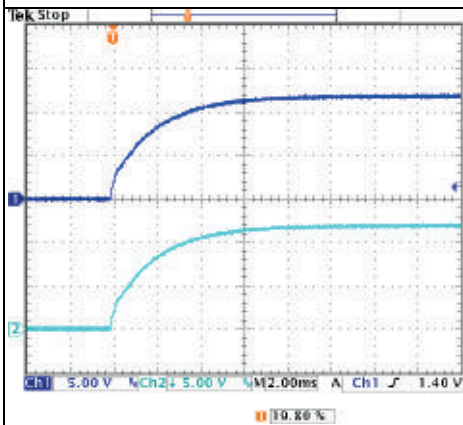
Model : MAB 06 012
Ch1 : Vout (minimum load)
Rise time : 2.312ms
Overshoot : zero%



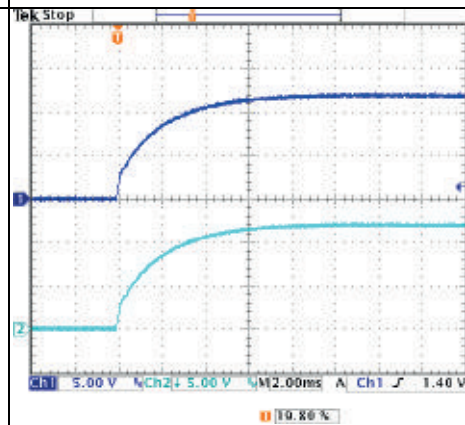
Model : MAB 06 015
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 1.360ms / 1.413ms
Overshoot : zero%



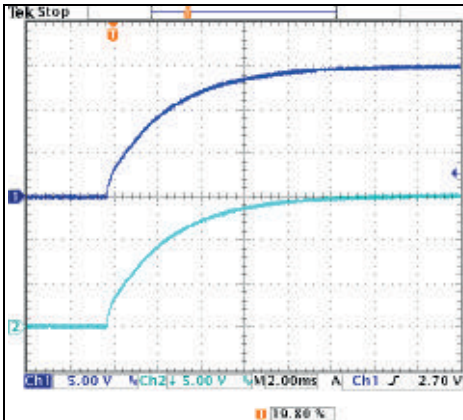
Model : MAB 06 015
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 1.431ms / 1.410ms
Overshoot : zero%



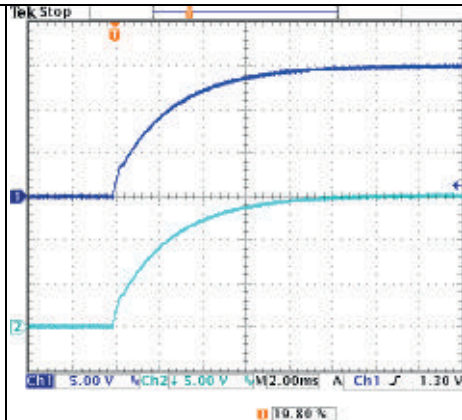
Model : MAB 06 018
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 4.186ms / 4.240ms
Overshoot : zero%



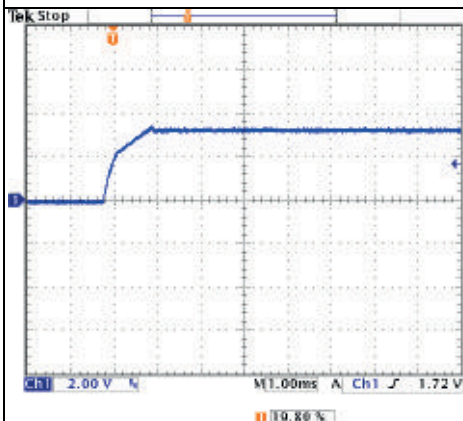
Model : MAB 06 018
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 4.012ms / 4.086ms
Overshoot : zero%



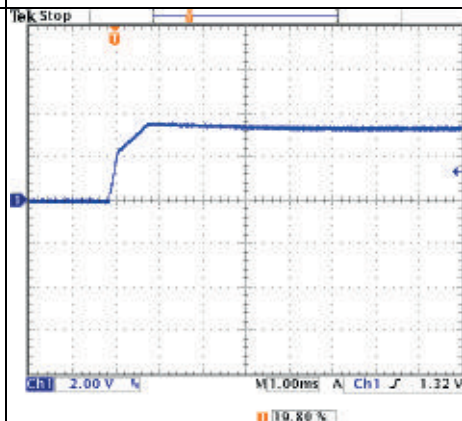
Model : MAB 06 021
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 5.614ms / 5.512ms
Overshoot : zero%



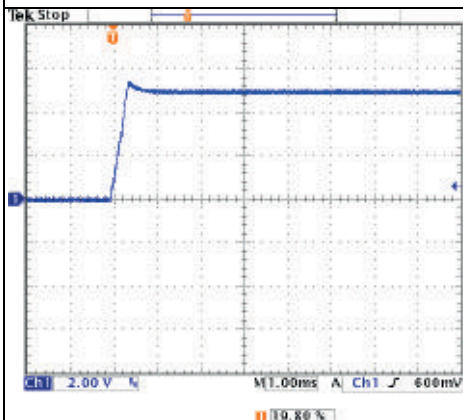
Model : MAB 06 021
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 5.404ms / 5.380ms
Overshoot : zero%



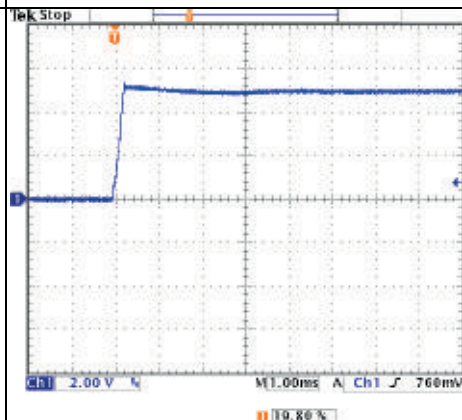
Model : MAB 06 003
Ch1 : Vout (maximum load)
Rise time : 731.7µs
Overshoot : zero%



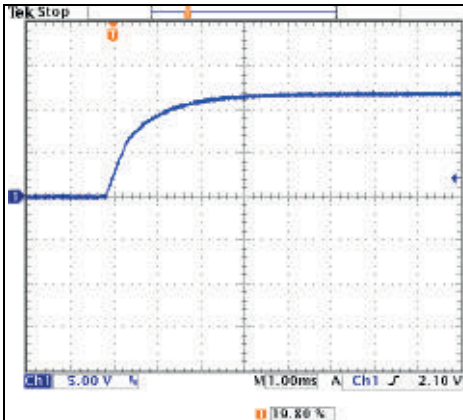
Model : MAB 06 003
Ch1 : Vout (minimum load)
Rise time : 561.6µs
Overshoot : zero%



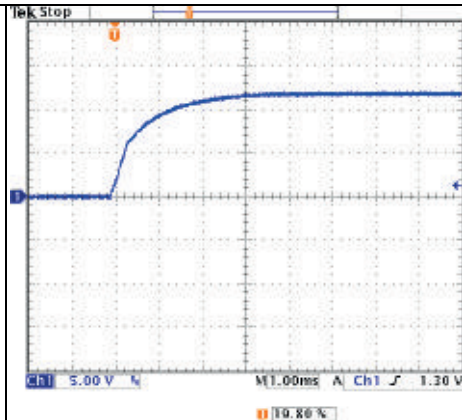
Model : MAB 06 027
Ch1 : Vout (maximum load)
Rise time : 290.2µs
Overshoot : 8%



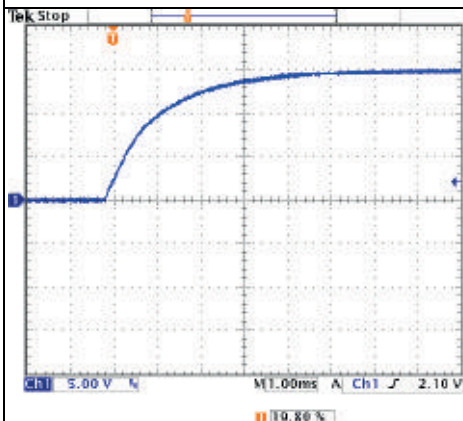
Model : MAB 06 027
Ch1 : Vout (minimum load)
Rise time : 212.3µs
Overshoot : 6%



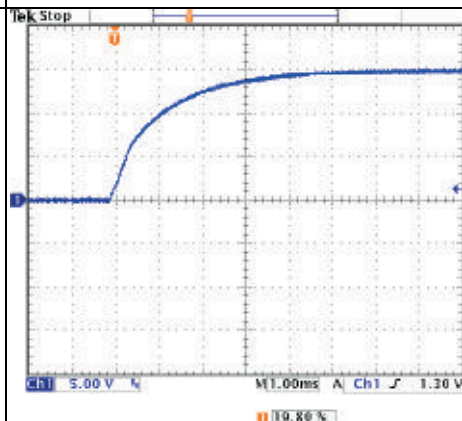
Model : MAB 06 030
Ch1 : Vout (maximum load)
Rise time : 1.644ms
Overshoot : zero%



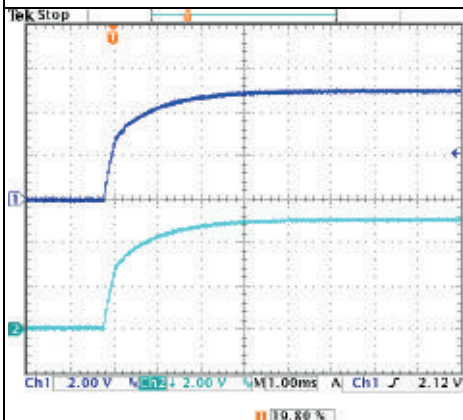
Model : MAB 06 030
Ch1 : Vout (minimum load)
Rise time : 1.551ms
Overshoot : zero%



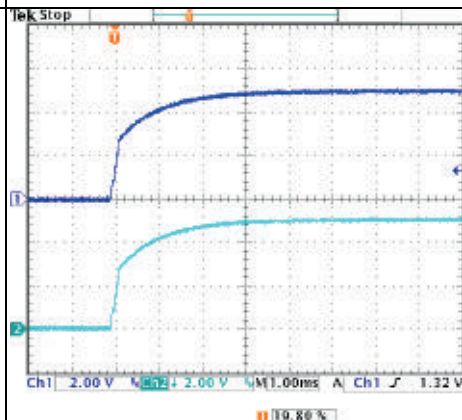
Model : MAB 06 033
Ch1 : Vout (maximum load)
Rise time : 2.512ms
Overshoot : zero%



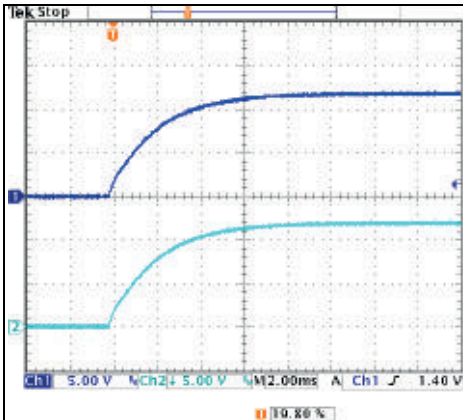
Model : MAB 06 033
Ch1 : Vout (minimum load)
Rise time : 2.457ms
Overshoot : zero%



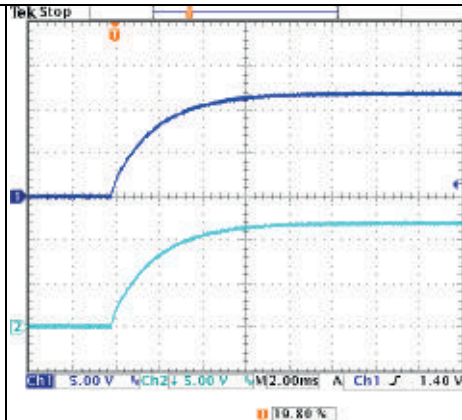
Model : MAB 06 036
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 1.523ms / 1.576ms
Overshoot : zero%



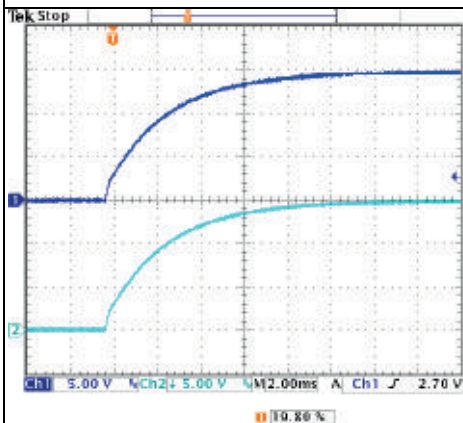
Model : MAB 06 036
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 1.466ms / 1.544ms
Overshoot : zero%



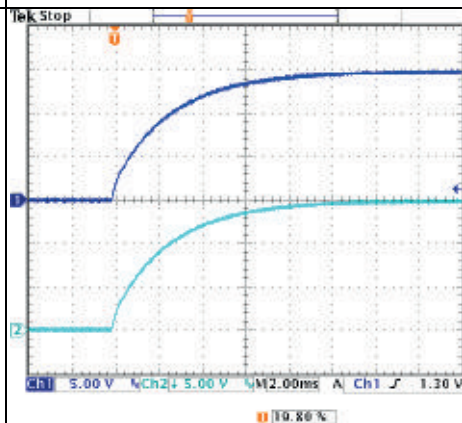
Model : MAB 06 039
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 4.366ms / 4.519ms
Overshoot : zero%



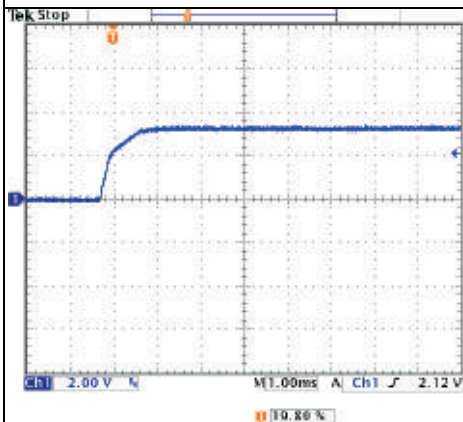
Model : MAB 06 039
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 4.201ms / 4.230ms
Overshoot : zero%



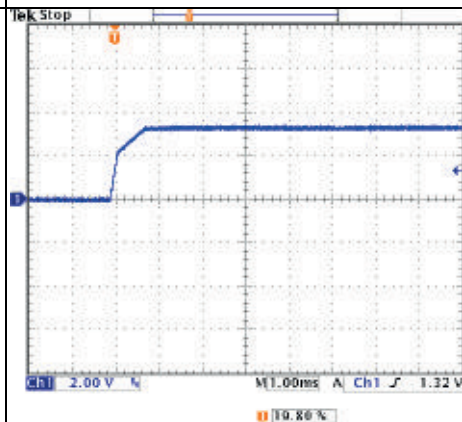
Model : MAB 06 042
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 5.658ms / 5.729ms
Overshoot : zero%



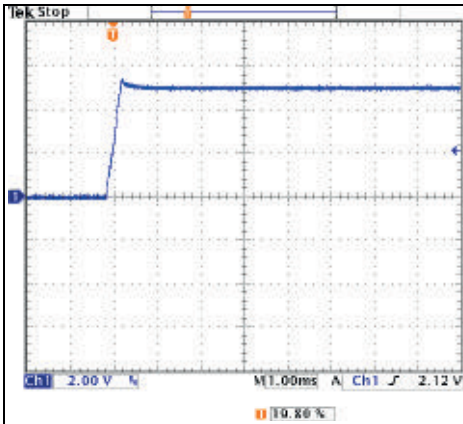
Model : MAB 06 042
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 5.311ms / 5.457ms
Overshoot : zero%



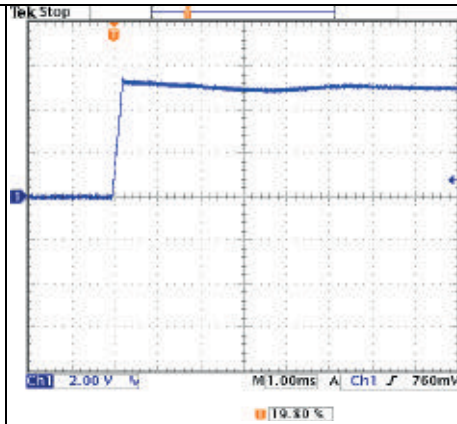
Model : MAB 06 024
Ch1 : Vout (maximum load)
Rise time : 708.7µs
Overshoot : zero%



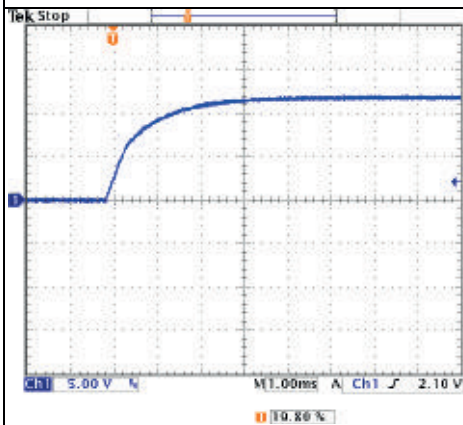
Model : MAB 06 024
Ch1 : Vout (minimum load)
Rise time : 567.6µs
Overshoot : zero%



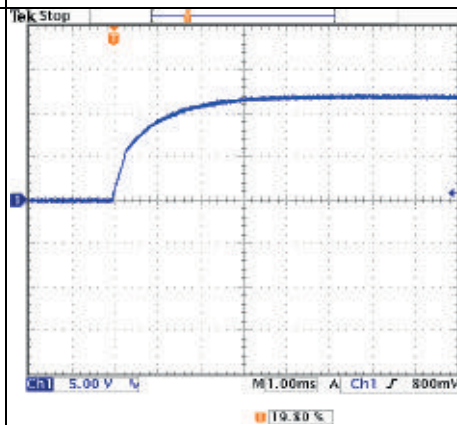
Model : MAB 06 048
Ch1 : Vout (maximum load)
Rise time : 277.1µs
Overshoot : 8%



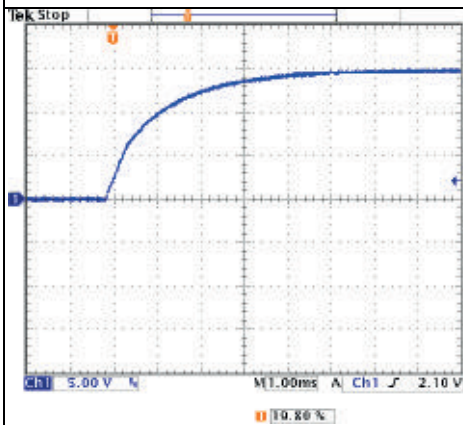
Model : MAB 06 048
Ch1 : Vout (minimum load)
Rise time : 199.2µs
Overshoot : 8%



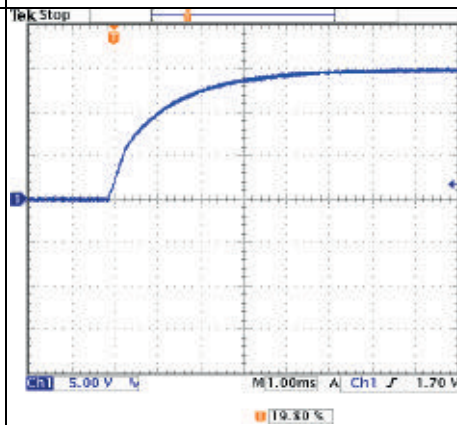
Model : MAB 06 051
Ch1 : Vout (maximum load)
Rise time : 1.768ms
Overshoot : zero%



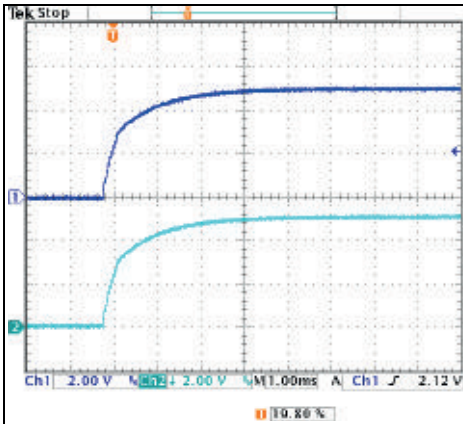
Model : MAB 06 051
Ch1 : Vout (minimum load)
Rise time : 1.739ms
Overshoot : zero%



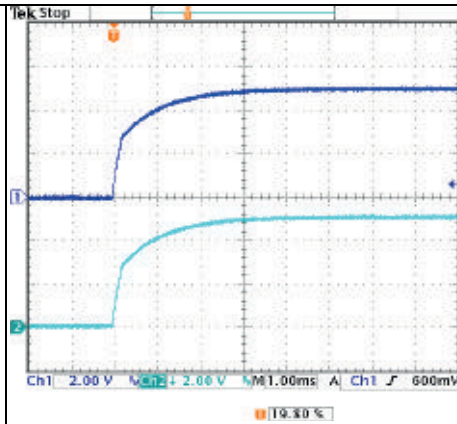
Model : MAB 06 054
Ch1 : Vout (maximum load)
Rise time : 2.582ms
Overshoot : zero%



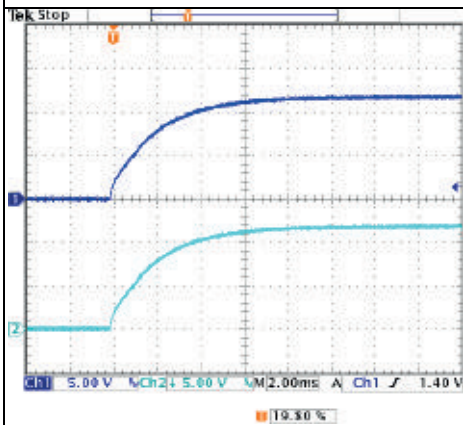
Model : MAB 06 054
Ch1 : Vout (minimum load)
Rise time : 2.469ms
Overshoot : zero%



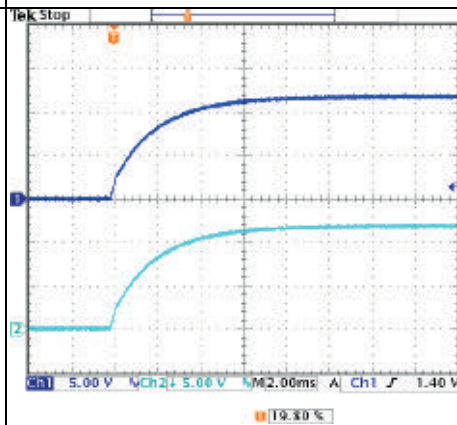
Model : MAB 06 057
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 1.560ms / 1.592ms
Overshoot : zero%



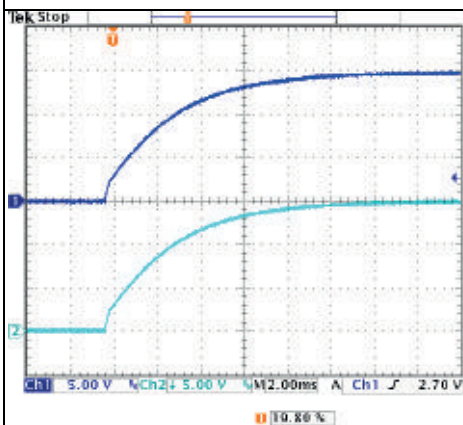
Model : MAB 06 057
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 1.426ms / 1.609ms
Overshoot : zero%



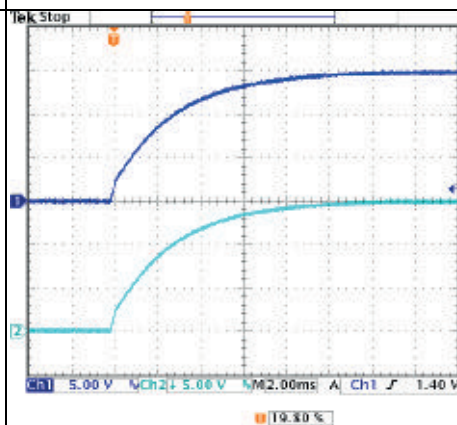
Model : MAB 06 060
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 4.319ms / 4.490ms
Overshoot : zero%



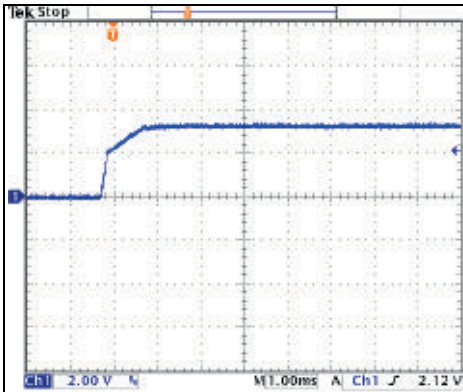
Model : MAB 06 060
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 4.210ms / 4.146ms
Overshoot : zero%



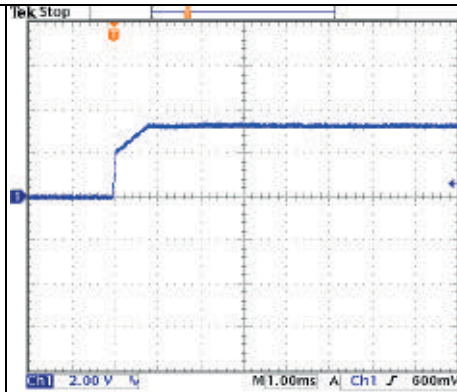
Model : MAB 06 063
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 6.258ms / 6.104ms
Overshoot : zero%



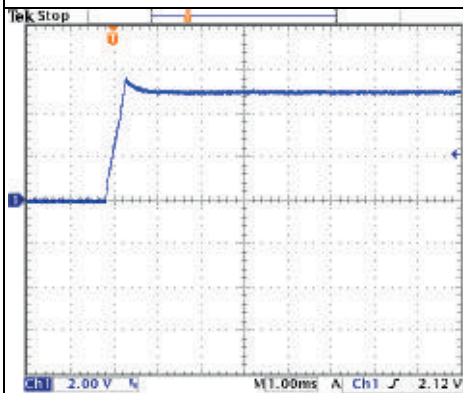
Model : MAB 06 063
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 5.954ms / 5.835ms
Overshoot : zero%



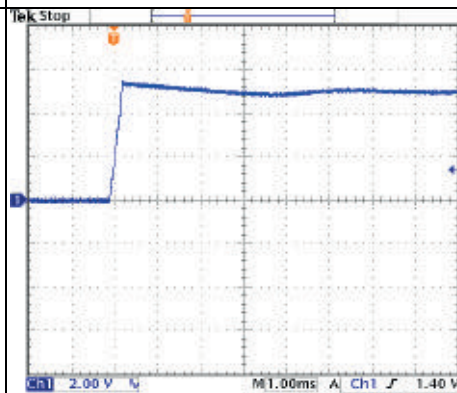
Model : MAB 06 045
Ch1 : Vout (maximum load)
Rise time : 679.6us
Overshoot : zero%



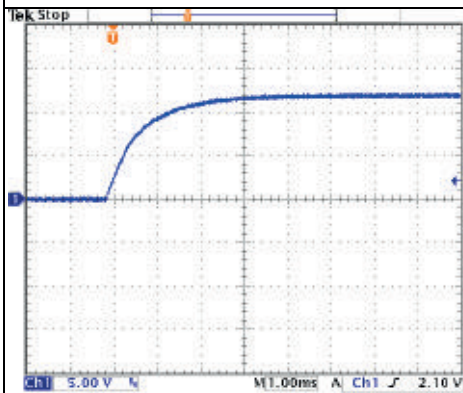
Model : MAB 06 045
Ch1 : Vout (minimum load)
Rise time : 575.9us
Overshoot : zero%



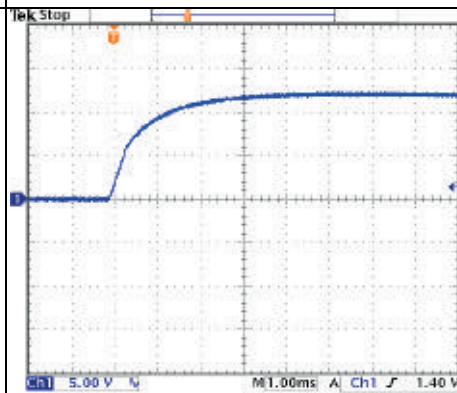
Model : MAB 06 069
Ch1 : Vout (maximum load)
Rise time : 363.5us
Overshoot : 14%



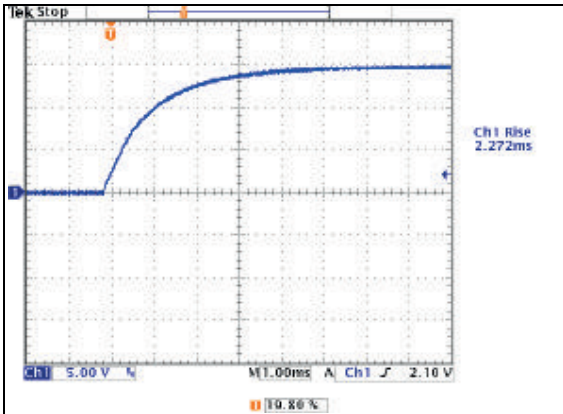
Model : MAB 06 069
Ch1 : Vout (minimum load)
Rise time : 233.9us
Overshoot : 12%



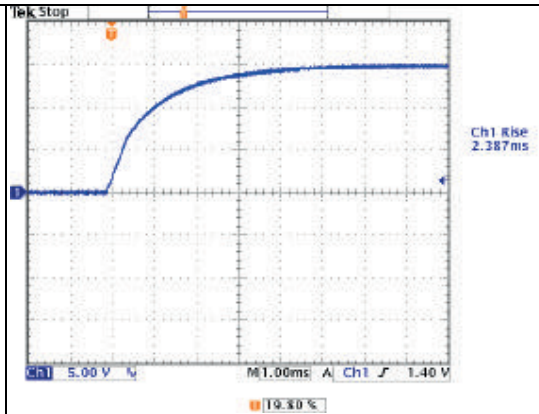
Model : MAB 06 072
Ch1 : Vout (maximum load)
Rise time : 1.626ms
Overshoot : zero%



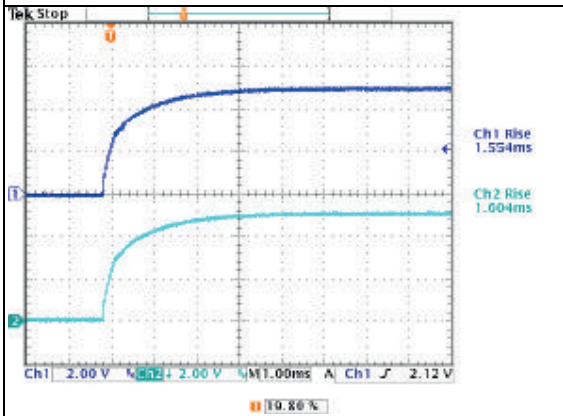
Model : MAB 06 072
Ch1 : Vout (minimum load)
Rise time : 1.676ms
Overshoot : zero%



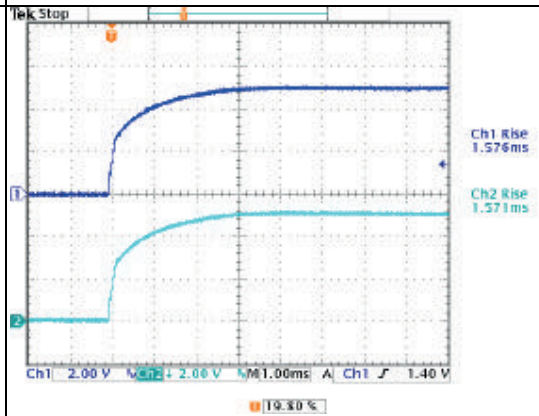
Model : MAB 06 075
Ch1 : Vout (maximum load)
Rise time : 2.272ms
Overshoot : zero%



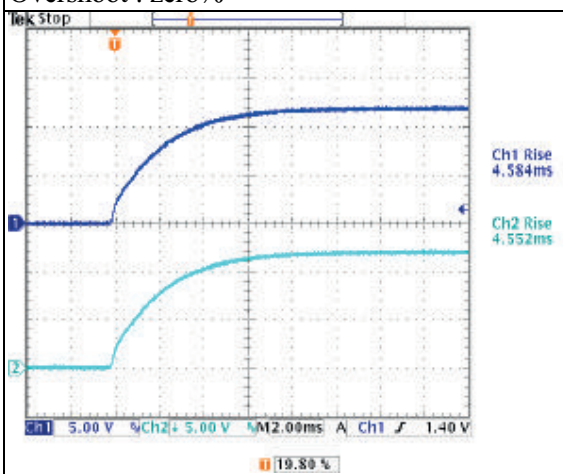
Model : MAB 06 075
Ch1 : Vout (minimum load)
Rise time : 2.387ms
Overshoot : zero%



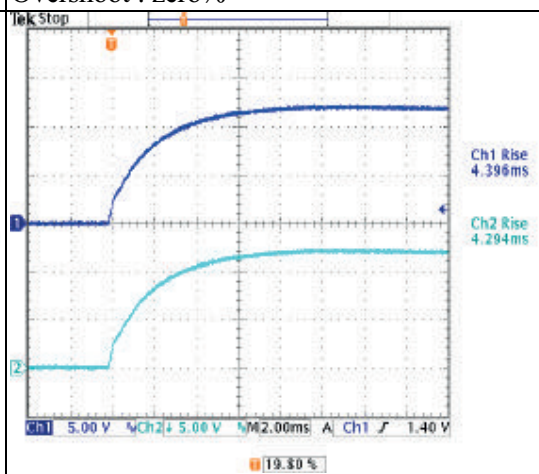
Model : MAB 06 078
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 1.554ms / 1.604ms
Overshoot : zero%



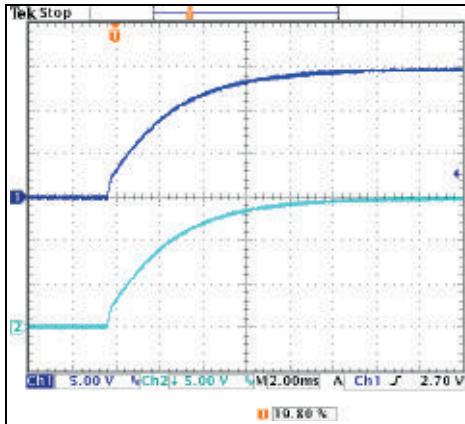
Model : MAB 06 078
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 1.576ms / 1.571ms
Overshoot : zero%



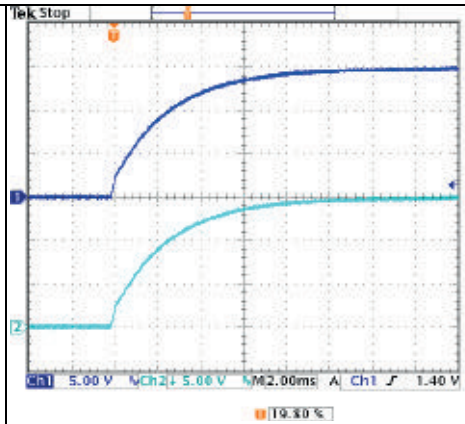
Model : MAB 06 081
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 4.584ms / 4.552ms
Overshoot : zero%



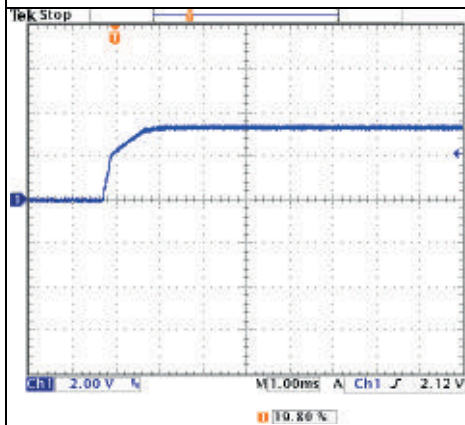
Model : MAB 06 081
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 4.396ms / 4.294ms
Overshoot : zero%



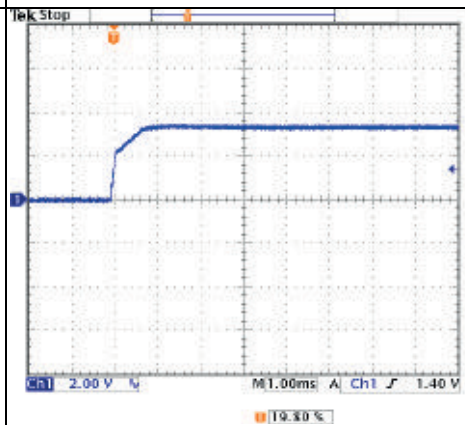
Model : MAB 06 084
Ch1 : +Vout Ch2 : -Vout(maximum load)
Rise time : 5.628ms / 5.958ms
Overshoot : zero%



Model : MAB 06 084
Ch1 : +Vout Ch2 : -Vout(minimum load)
Rise time : 5.390ms / 5.490ms
Overshoot : zero%



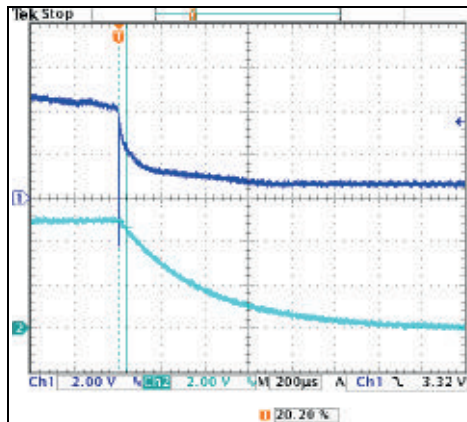
Model : MAB 06 066
Ch1 : Vout (maximum load)
Rise time : 704.7µs
Overshoot : zero%



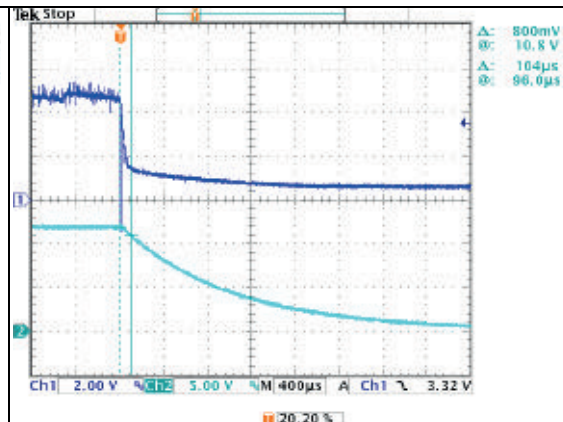
Model : MAB 06 066
Ch1 : Vout (minimum load)
Rise time : 585.3µs
Overshoot : zero%

Hold Time

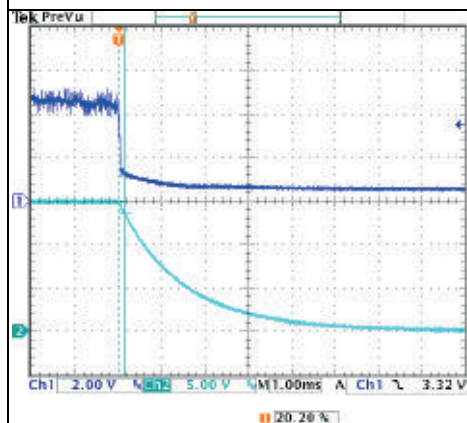
Measure from the power supply end to when Vout drop down to 90% output .At nominal input and maximum load.



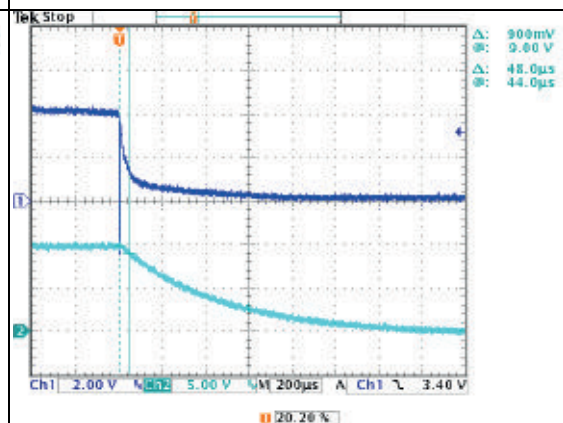
Model : MAB 06 006
Ch1 : Vin Ch2 : Vout
Hold time : 36us



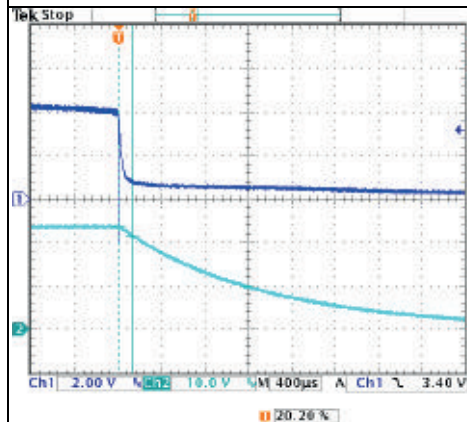
Model : MAB 06 009
Ch1 : Vin Ch2 : Vout
Hold time : 104us



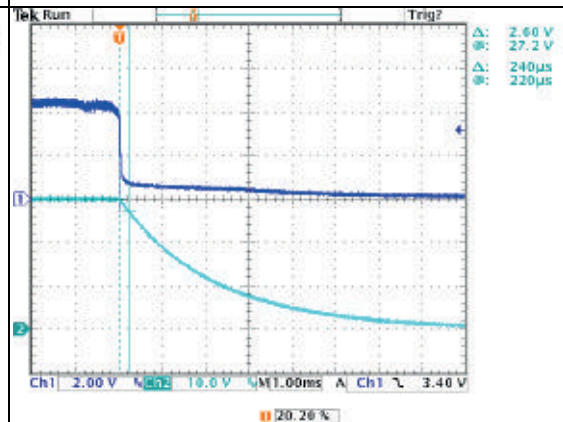
Model : MAB 06 012
Ch1 : Vin Ch2 : Vout
Hold time : 160us



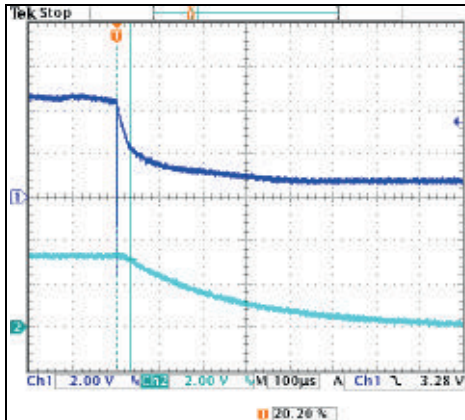
Model : MAB 06 015
Ch1 : Vin Ch2 : Vout
Hold time : 48.0us



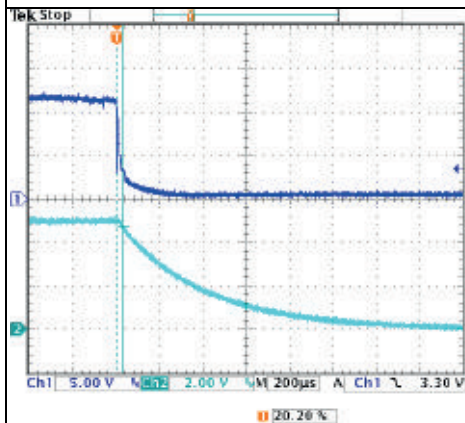
Model : MAB 06 018
Ch1 : Vin Ch2 : Vout
Hold time : 128us



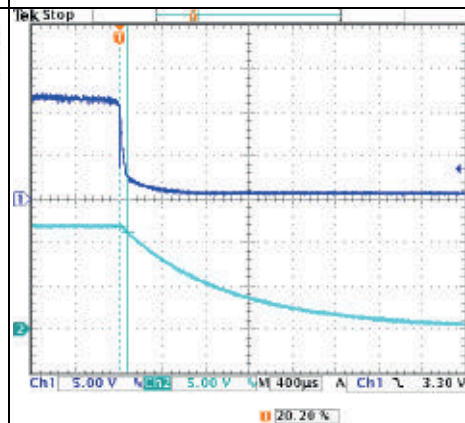
Model : MAB 06 021
Ch1 : Vin Ch2 : Vout
Hold time : 240us



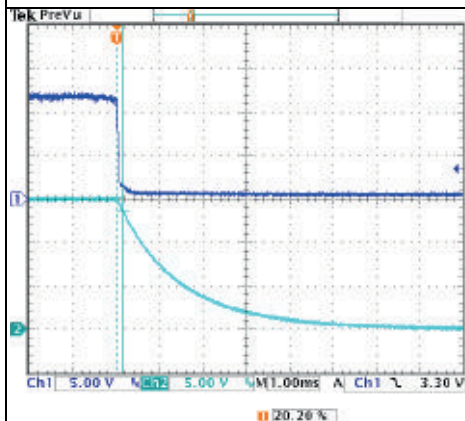
Model : MAB 06 003
Ch1 : Vin Ch2 : Vout
Hold time : 32us



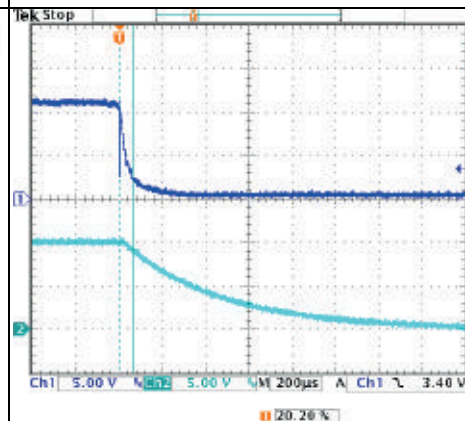
Model : MAB 06 027
Ch1 : Vin Ch2 : Vout
Hold time : 32.0us



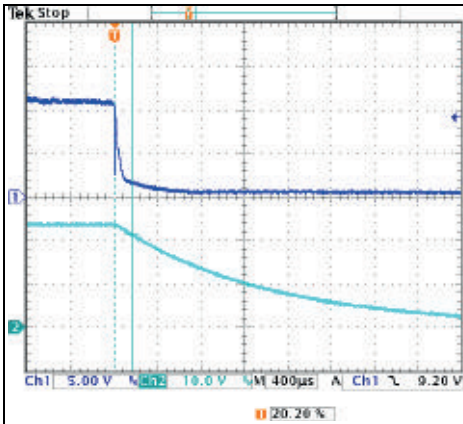
Model : MAB 06 030
Ch1 : Vin Ch2 : Vout
Hold time : 80.0us



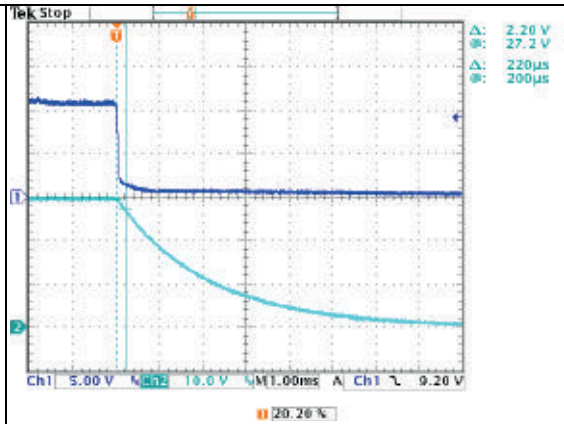
Model : MAB 06 033
Ch1 : Vin Ch2 : Vout
Hold time : 160us



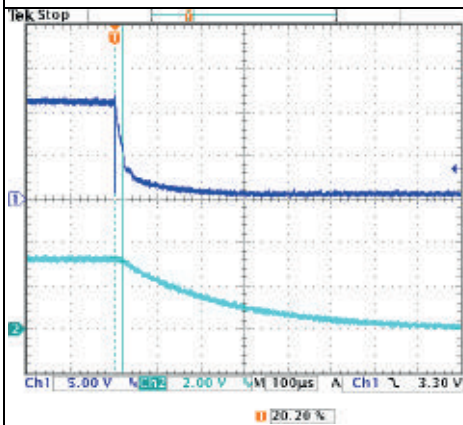
Model : MAB 06 036
Ch1 : Vin Ch2 : Vout
Hold time : 64.0us



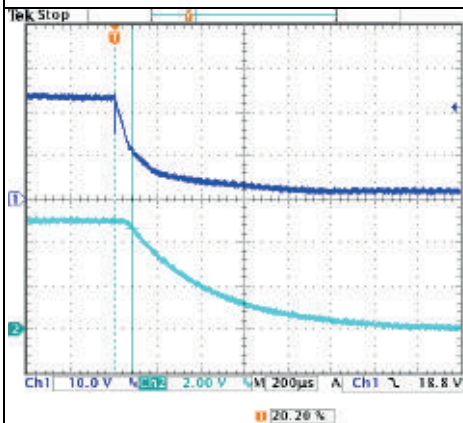
Model : MAB 06 039
Ch1 : Vin Ch2 : Vout
Hold time : 160us



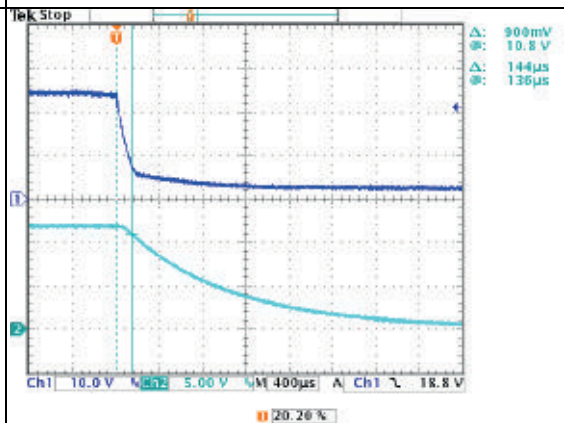
Model : MAB 06 042
Ch1 : Vin Ch2 : Vout
Hold time : 220us



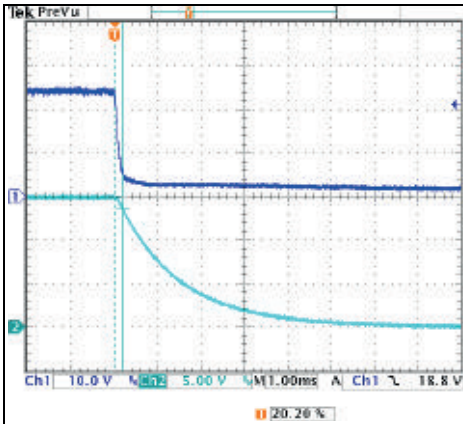
Model : MAB 06 024
Ch1 : Vin Ch2 : Vout
Hold time : 20.0us



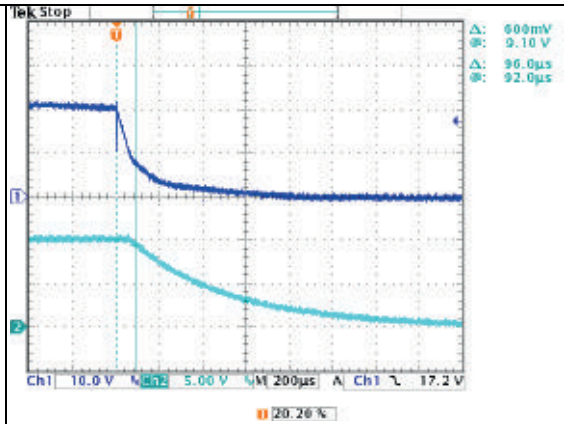
Model : MAB 06 048
Ch1 : Vin Ch2 : Vout
Hold time : 84.0us



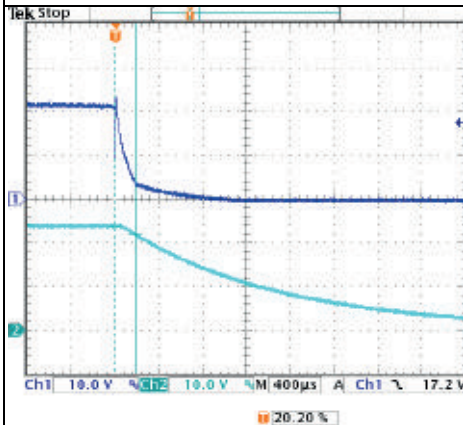
Model : MAB 06 051
Ch1 : Vin Ch2 : Vout
Hold time : 144us



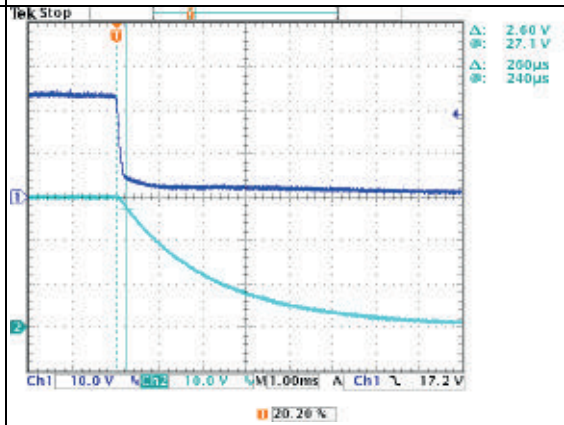
Model : MAB 06 054
Ch1 : Vin Ch2 : Vout
Hold time : 200us



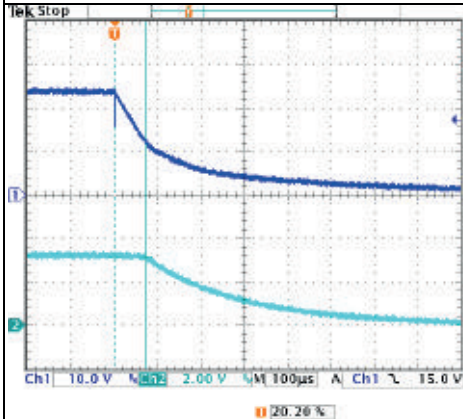
Model : MAB 06 057
Ch1 : Vin Ch2 : Vout
Hold time : 96.0us



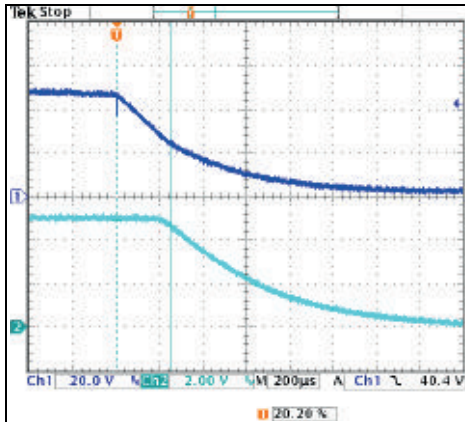
Model : MAB 06 060
Ch1 : Vin Ch2 : Vout
Hold time : 184us



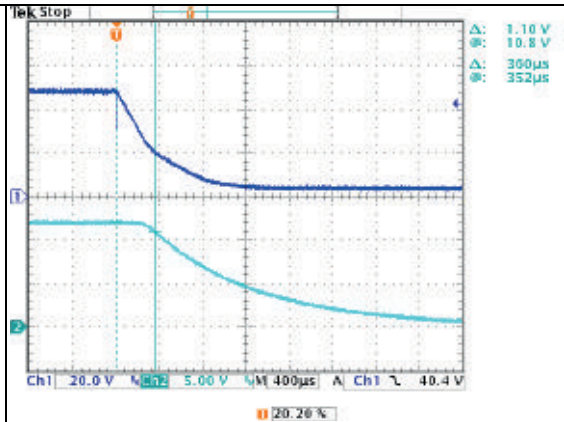
Model : MAB 06 063
Ch1 : Vin Ch2 : Vout
Hold time : 260us



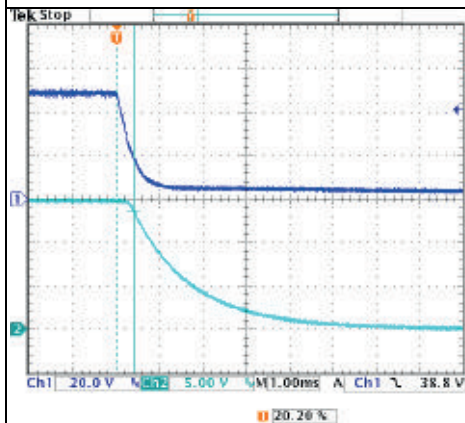
Model : MAB 06 045
Ch1 : Vin Ch2 : Vout
Hold time : 74.0us



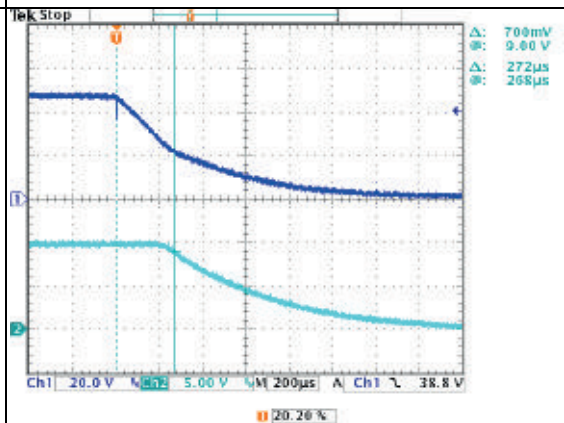
Model : MAB 06 069
Ch1 : Vin Ch2 : Vout
Hold time : 256us



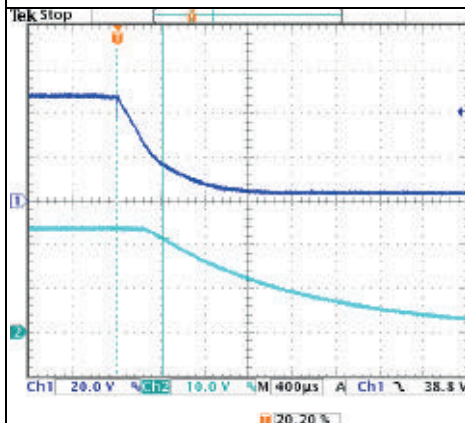
Model : MAB 06 072
Ch1 : Vin Ch2 : Vout
Hold time : 360us



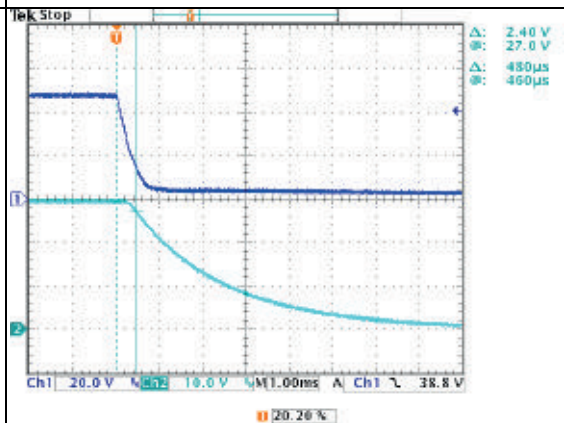
Model : MAB 06 075
Ch1 : Vin Ch2 : Vout
Hold time : 400us



Model : MAB 06 078
Ch1 : Vin Ch2 : Vout
Hold time : 272us

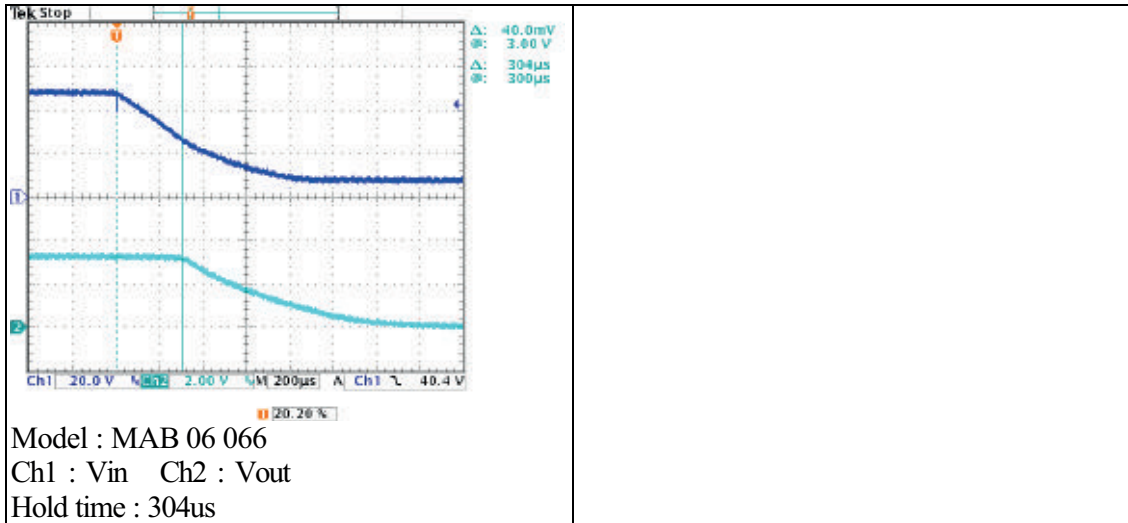


Model : MAB 06 081
Ch1 : Vin Ch2 : Vout
Hold time : 424us



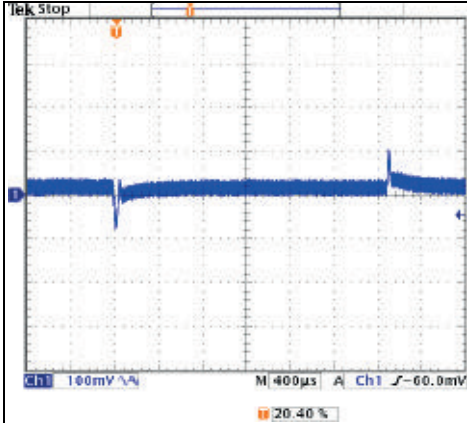
Model : MAB 06 084
Ch1 : Vin Ch2 : Vout
Hold time : 480us

POWERBOX Industrial Line
MAB06 Series
3W 2:1 Single and Dual Output
DC/DC Converter
Manual V1.1

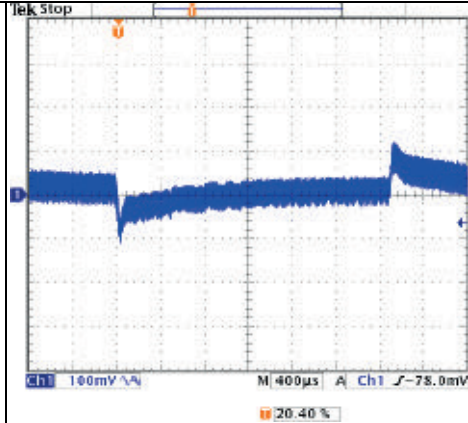


Dynamic Response

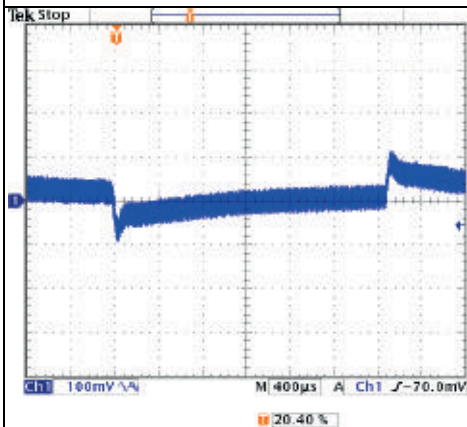
Output voltage dynamic response at nominal input and different load condition (load change 100% load to 50% load).
Load current=0.1A/us, Ton=Toff=2.5ms.



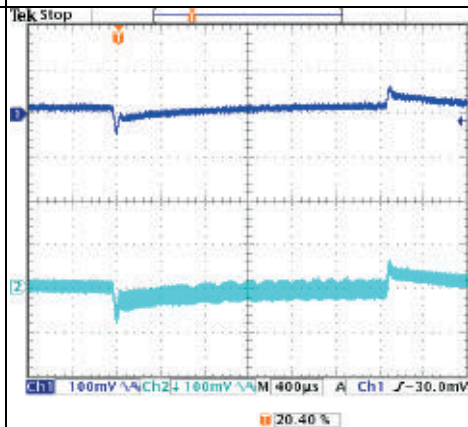
Model : MAB 06 006
Ch1 : Vout



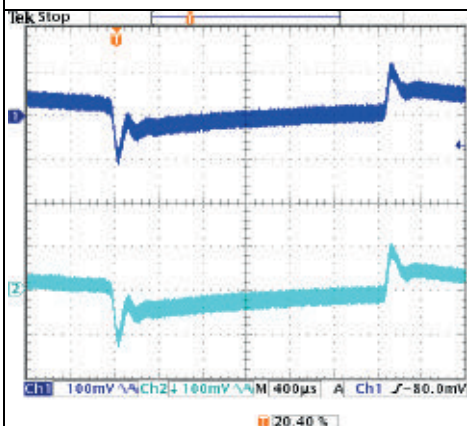
Model : MAB 06 009
Ch1 : Vout



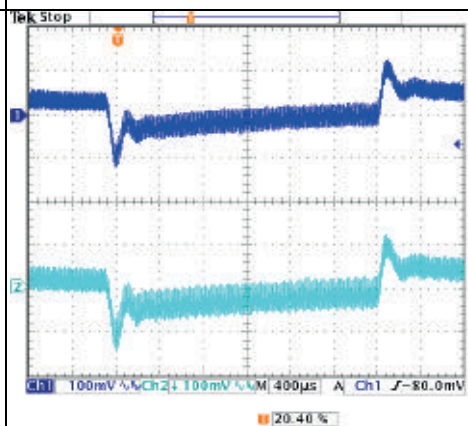
Model : MAB 06 012
Ch1 : Vout



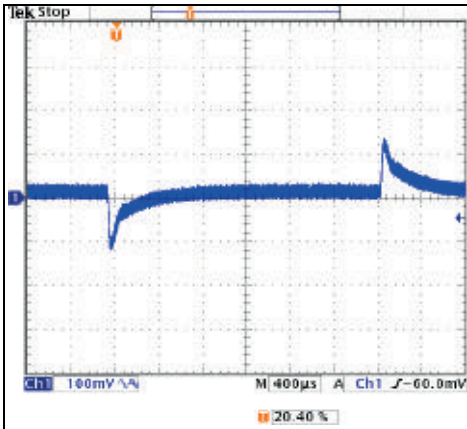
Model : MAB 06 015
Ch1 : +Vout Ch2 : -Vout



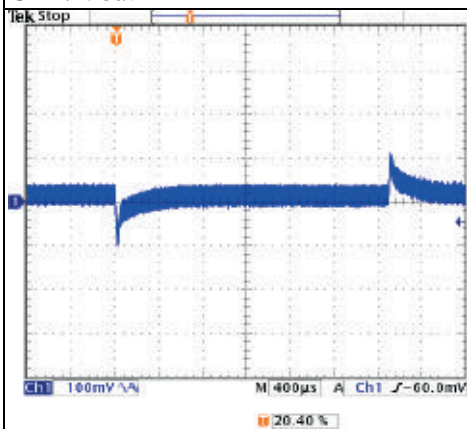
Model : MAB 06 018
Ch1 : +Vout Ch2 : -Vout



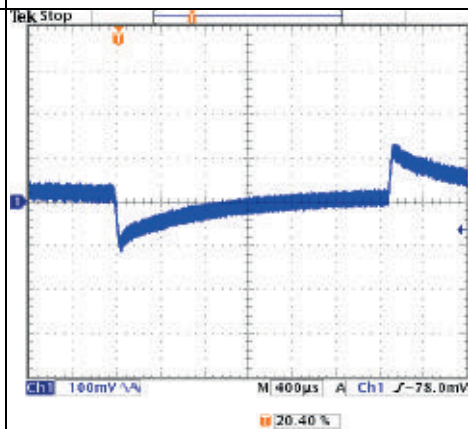
Model : MAB 06 021
Ch1 : +Vout Ch2 : -Vout



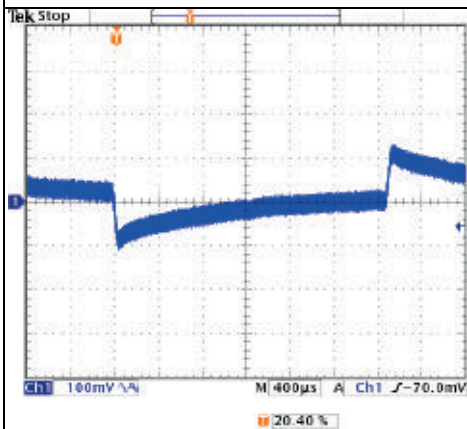
Model : MAB 06 003
Ch1 : Vout



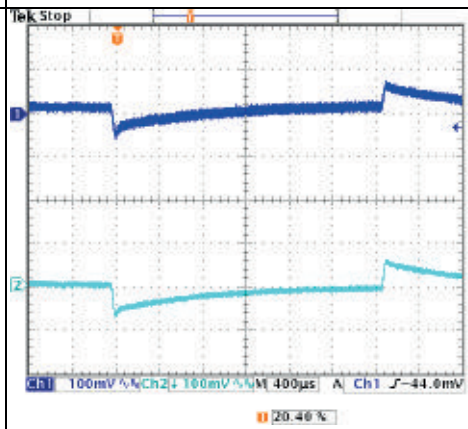
Model : MAB 06 027
Ch1 : Vout



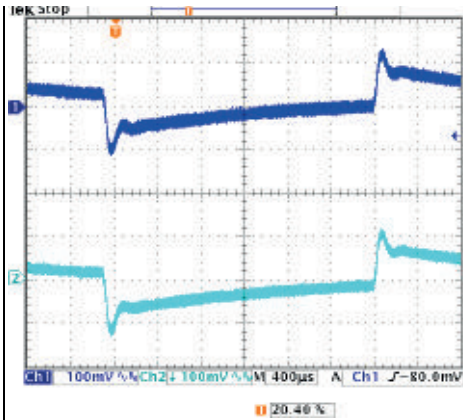
Model : MAB 06 030
Ch1 : Vout



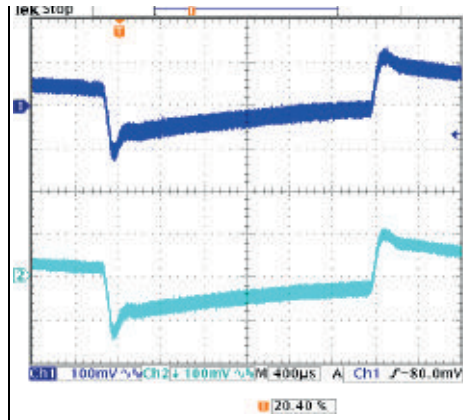
Model : MAB 06 033
Ch1 : Vout



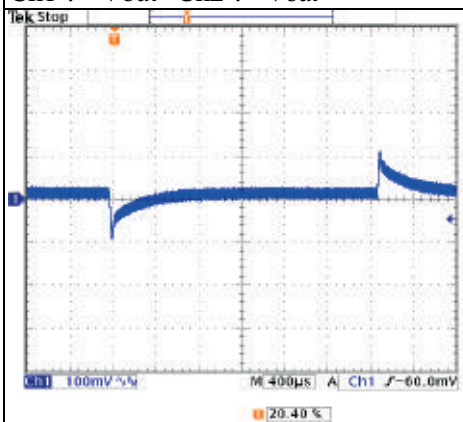
Model : MAB 06 036
Ch1 : +Vout Ch2 : -Vout



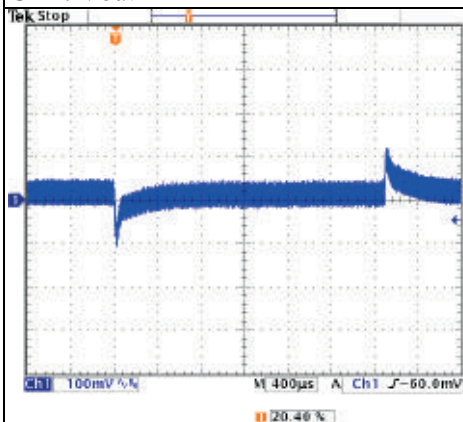
Model : MAB 06 039
Ch1 : +Vout Ch2 : -Vout



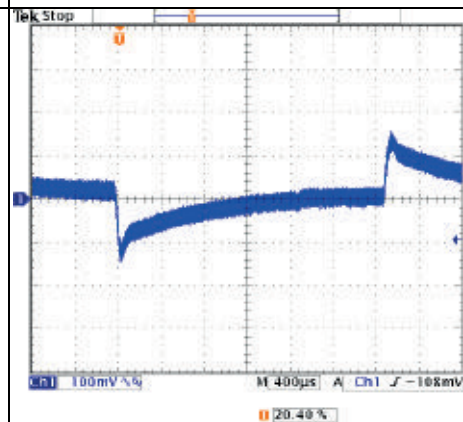
Model : MAB 06 042
Ch1 : +Vout Ch2 : -Vout



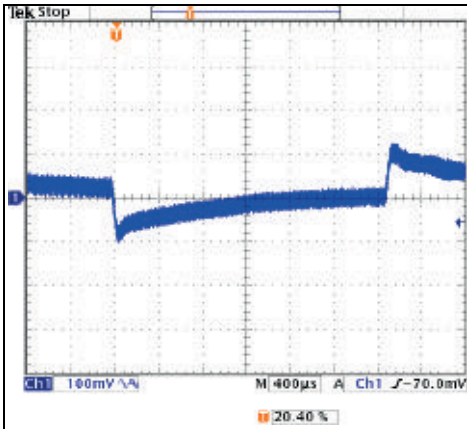
Model : MAB 06 024
Ch1 : Vout



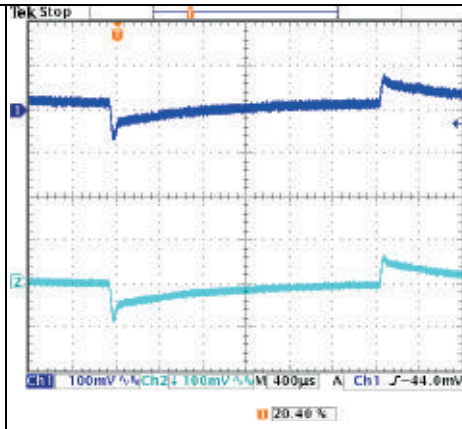
Model : MAB 06 048
Ch1 : Vout



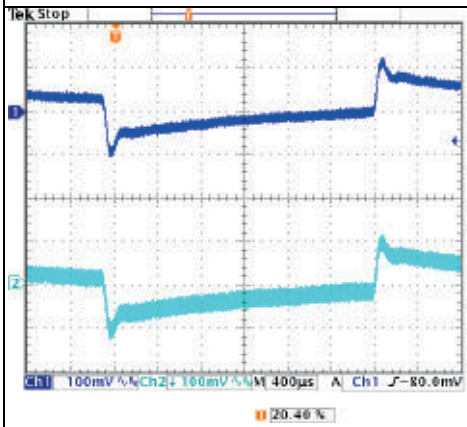
Model : MAB 06 051
Ch1 : Vout



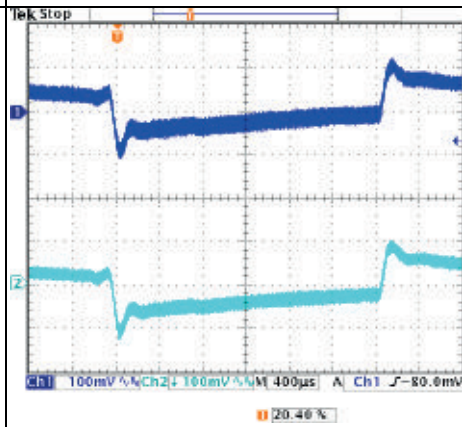
Model : MAB 06 054
Ch1 : Vout



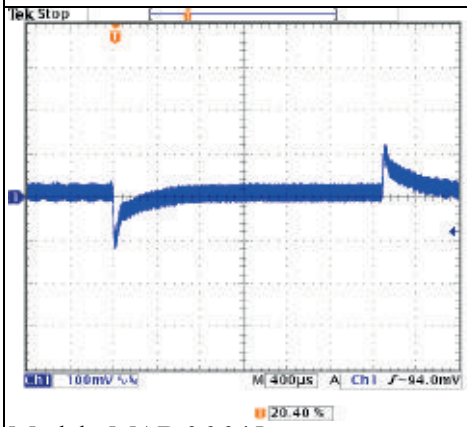
Model : MAB 06 057
Ch1 : +Vout Ch2 : -Vout



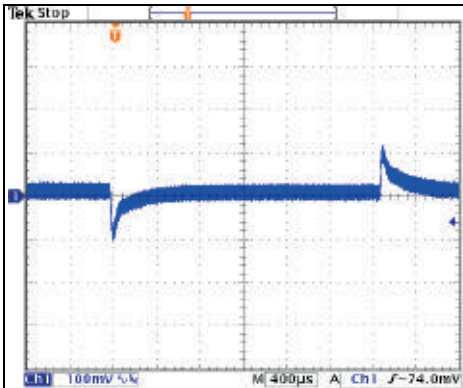
Model : MAB 06 060
Ch1 : +Vout Ch2 : -Vout



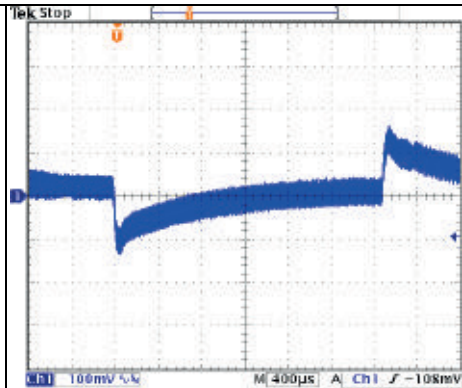
Model : MAB 06 063
Ch1 : +Vout Ch2 : -Vout



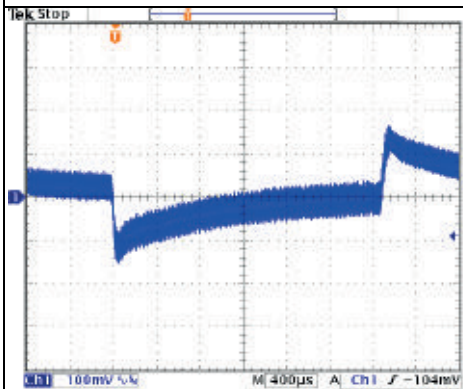
Model : MAB 06 045
Ch1 : Vout



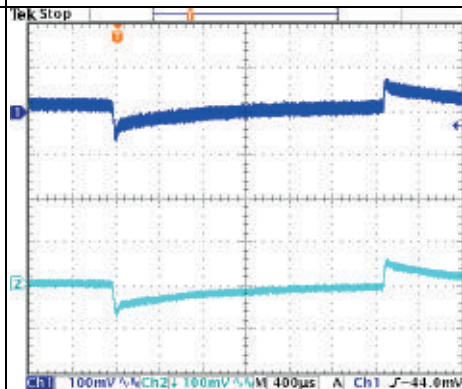
Model : MAB 06 069
Ch1 : Vout



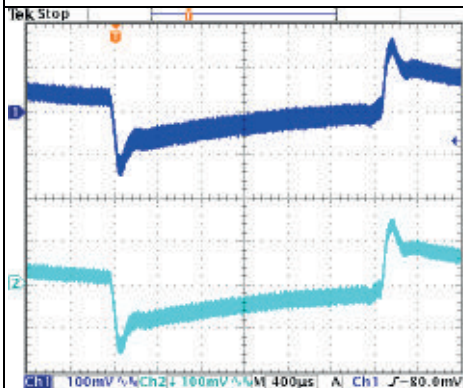
Model : MAB 06 072
Ch1 : Vout



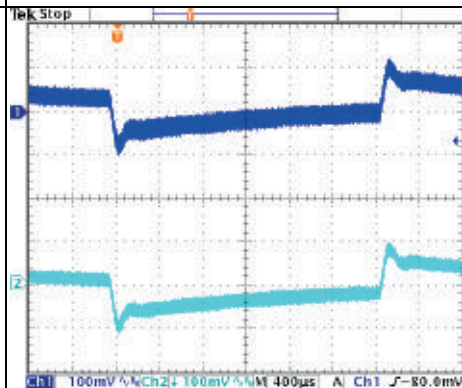
Model : MAB 06 075
Ch1 : Vout



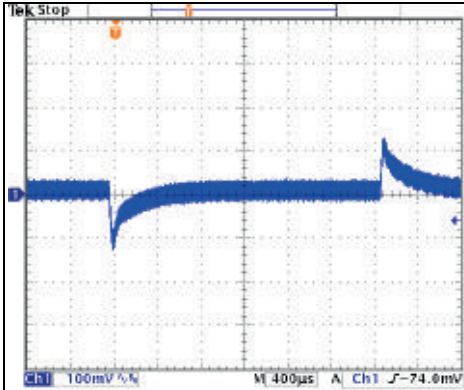
Model : MAB 06 078
Ch1 : +Vout Ch2 : -Vout



Model : MAB 06 081
Ch1 : +Vout Ch2 : -Vout



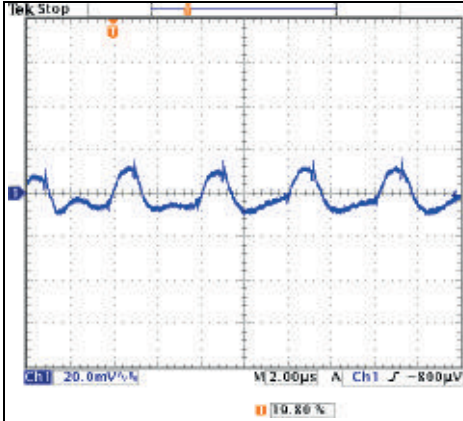
Model : MAB 06 084
Ch1 : +Vout Ch2 : -Vout



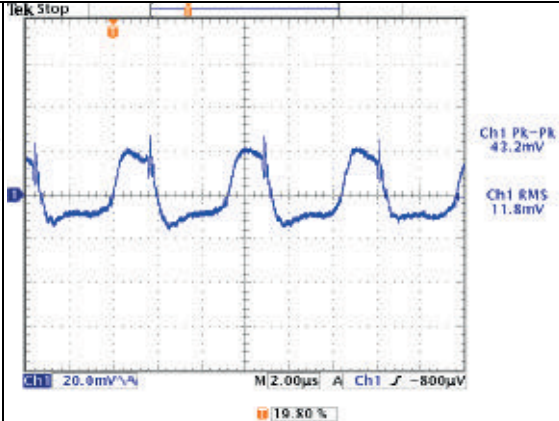
Model : MAB 06 066
Ch1 : Vout

Output Ripple and Noise

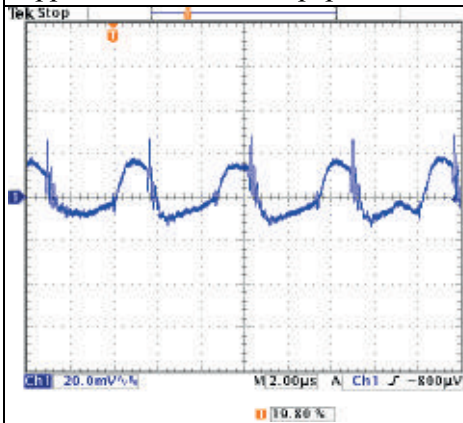
Measuring output ripple waveform peak to peak. Measure mane bandwidth 20 MHz. At nominal input, maximum lout and output with a 0.1uF ceramic capacitor.



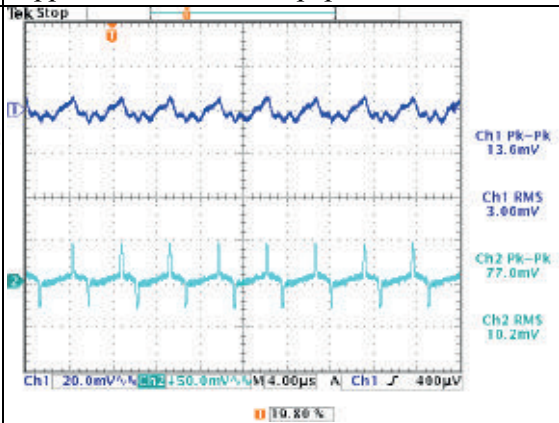
Model : MAB 06 006
Ch1 : Vout
Ripple & noise : 26.4mVp-p



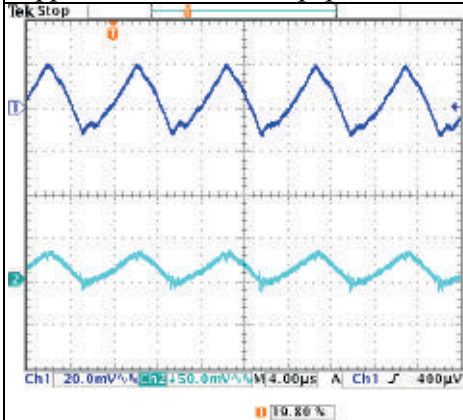
Model : MAB 06 009
Ch1 : Vout
Ripple & noise : 43.2mVp-p



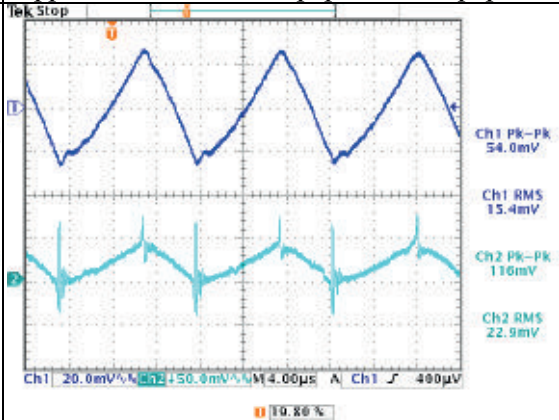
Model : MAB 06 012
Ch1 : Vout
Ripple & noise : 42.8mVp-p



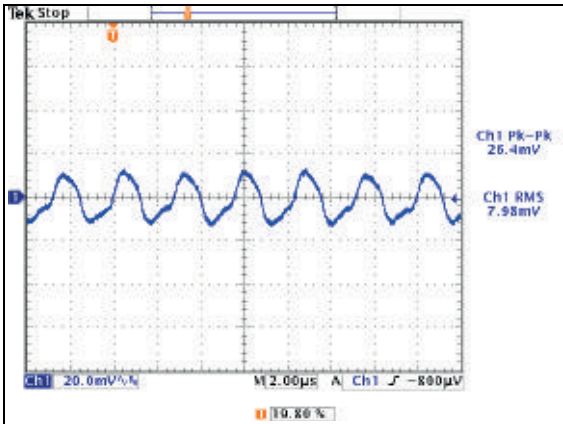
Model : MAB 06 015
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 13.6mVp-p / 77.0mVp-p



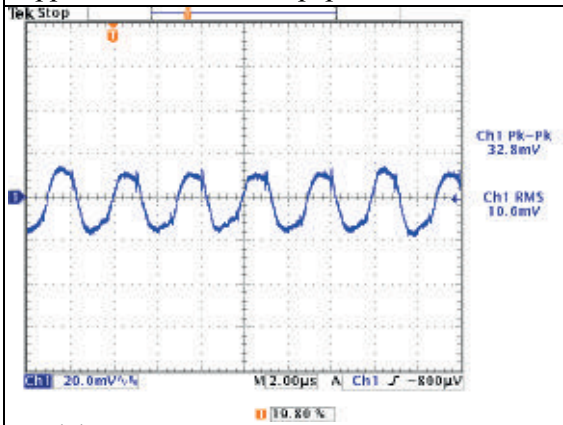
Model : MAB 06 018
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 33.6mVp-p / 50.0mVp-p



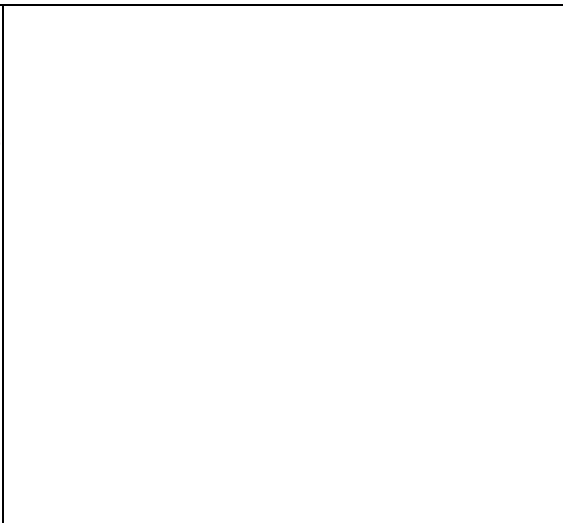
Model : MAB 06 021
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 54.0mVp-p / 116mVp-p



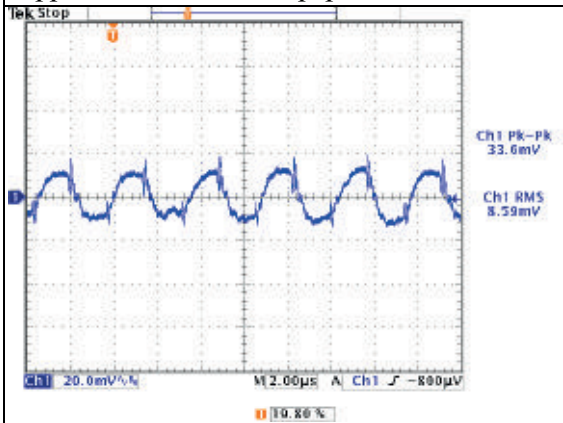
Model : MAB 06 003
Ch1 : Vout
Ripple & noise : 26.4mVp-p



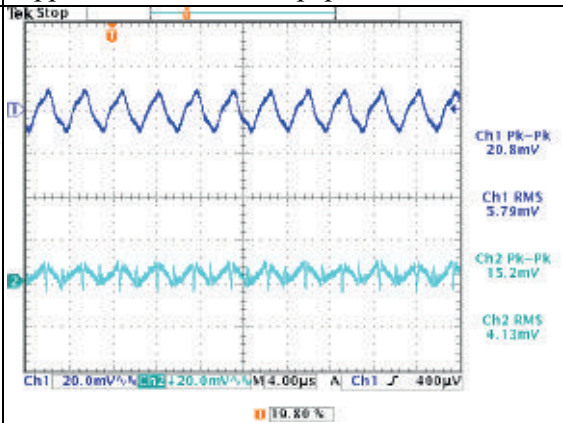
Model : MAB 06 027
Ch1 : Vout
Ripple & noise : 32.8mVp-p



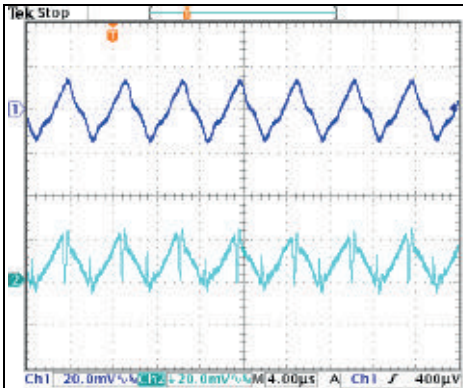
Model : MAB 06 030
Ch1 : Vout
Ripple & noise : 31.6mVp-p



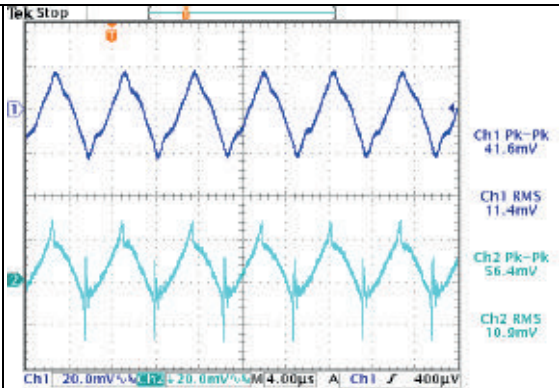
Model : MAB 06 033
Ch1 : Vout
Ripple & noise : 33.6mVp-p



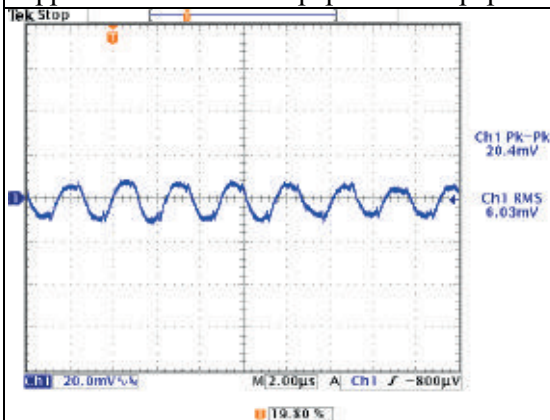
Model : MAB 06 036
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 20.8mVp-p / 15.2mVp-p



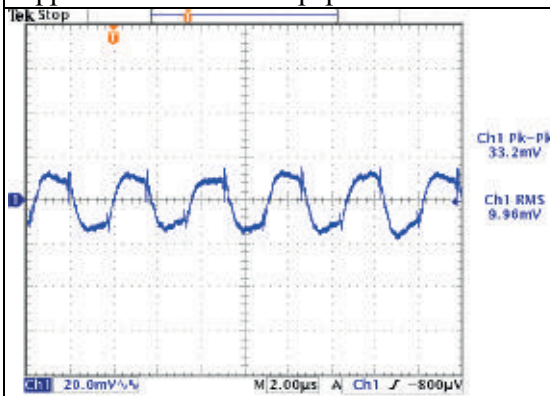
Model : MAB 06 039
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 30.4mVp-p / 30.4mVp-p



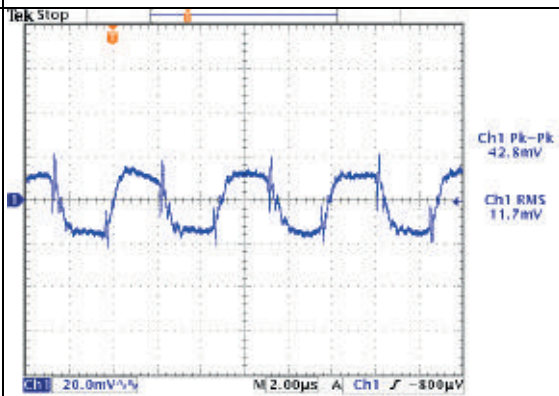
Model : MAB 06 042
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 41.6mVp-p / 56.4mVp-p



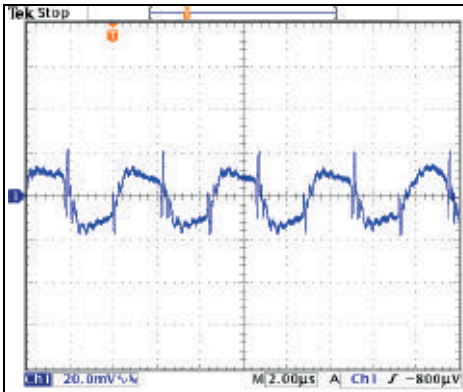
Model : MAB 06 024
Ch1 : Vout
Ripple & noise : 20.4mVp-p



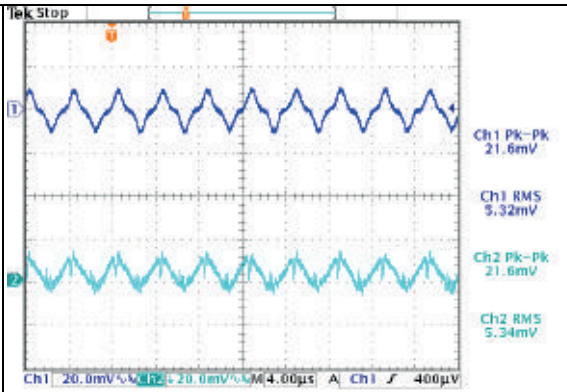
Model : MAB 06 048
Ch1 : Vout
Ripple & noise : 33.2mVp-p



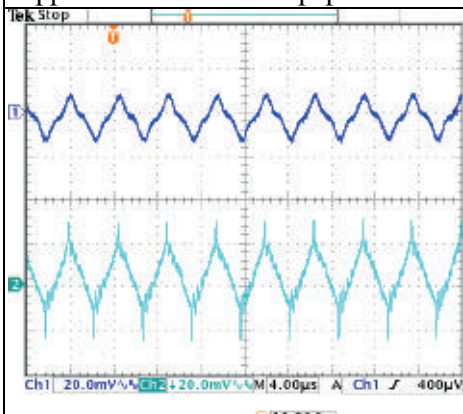
Model : MAB 06 051
Ch1 : Vout
Ripple & noise : 42.8mVp-p



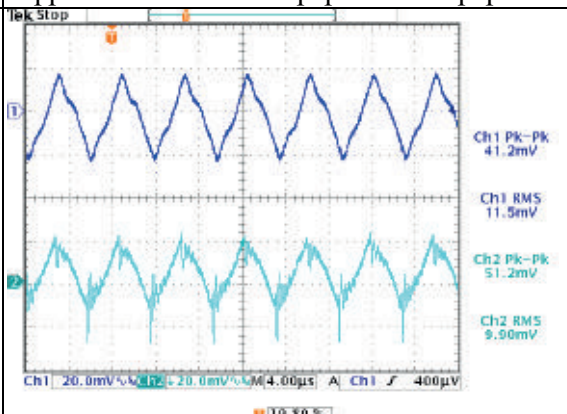
Model : MAB 06 054
Ch1 : Vout
Ripple & noise : 40.4mVp-p



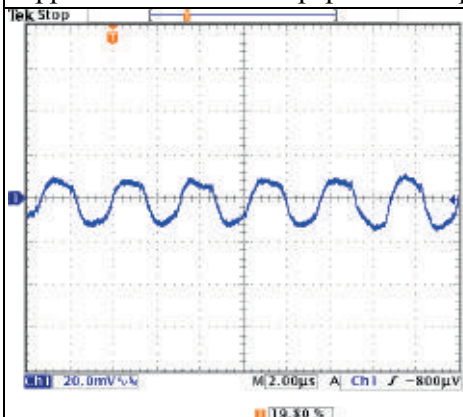
Model : MAB 06 057
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 21.6mVp-p / 21.6mVp-p



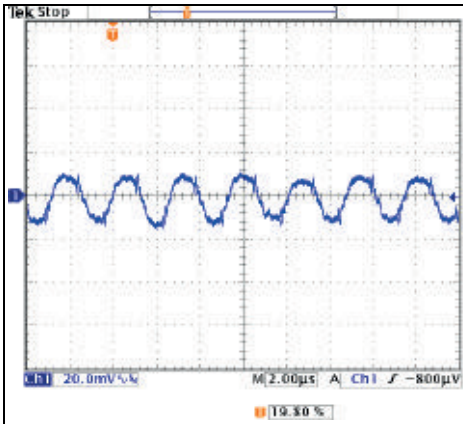
Model : MAB 06 060
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 23.2mVp-p / 56.4mVp-p



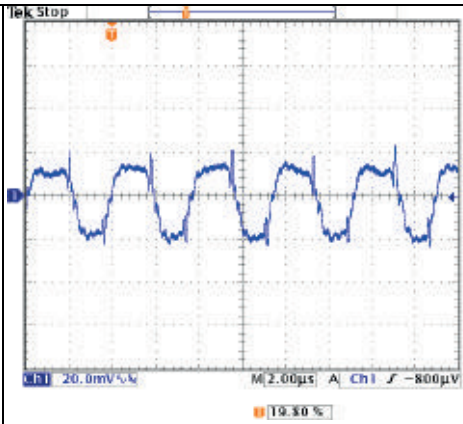
Model : MAB 06 063
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 41.2mVp-p / 51.2mVp-p



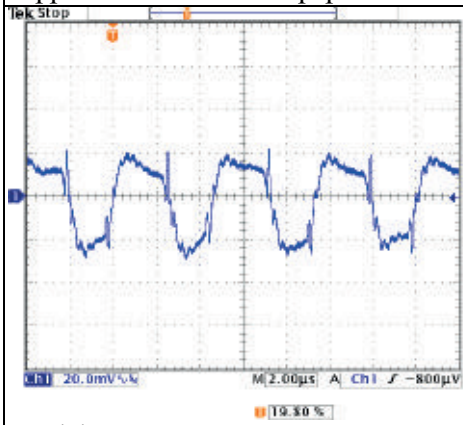
Model : MAB 06 045
Ch1 : Vout
Ripple & noise : 26.8mVp-p



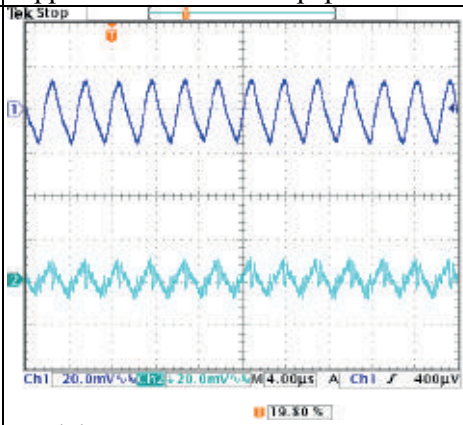
Model : MAB 06 069
Ch1 : Vout
Ripple & noise : 26.4mVp-p



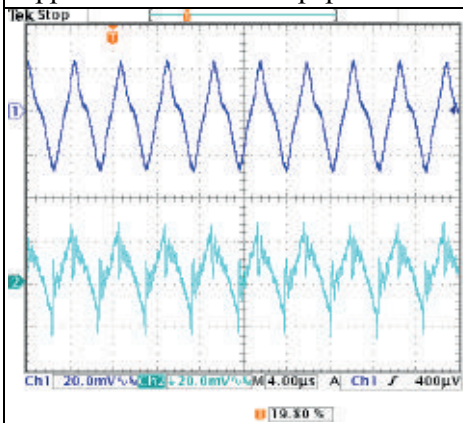
Model : MAB 06 072
Ch1 : Vout
Ripple & noise : 47.2mVp-p



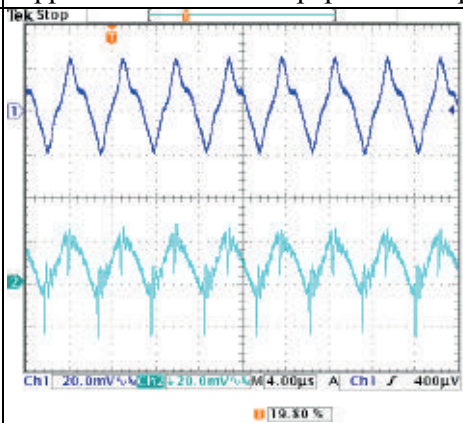
Model : MAB 06 075
Ch1 : Vout
Ripple & noise : 51.2mVp-p



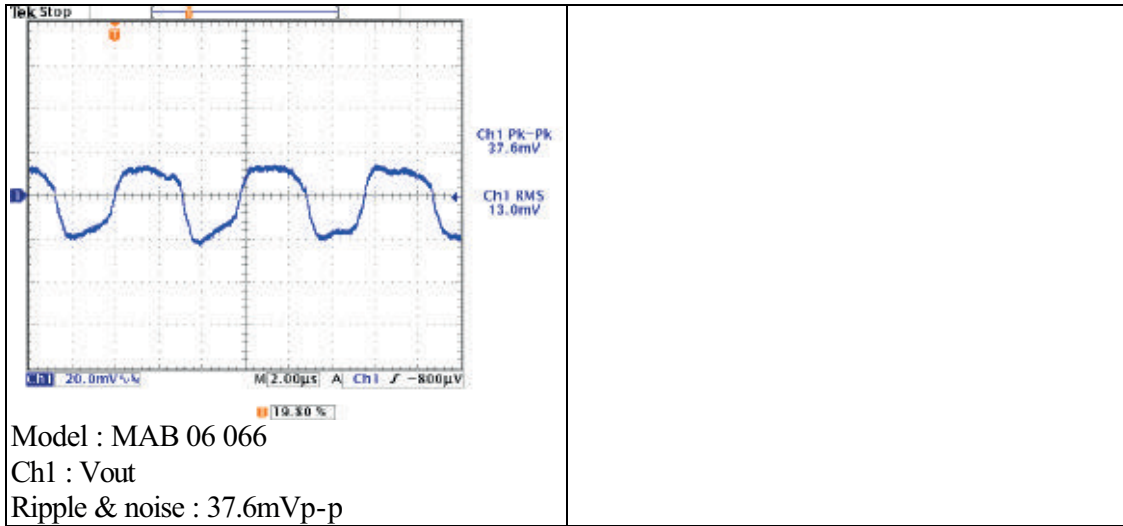
Model : MAB 06 078
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 30.8mVp-p / 20.0mVp-p



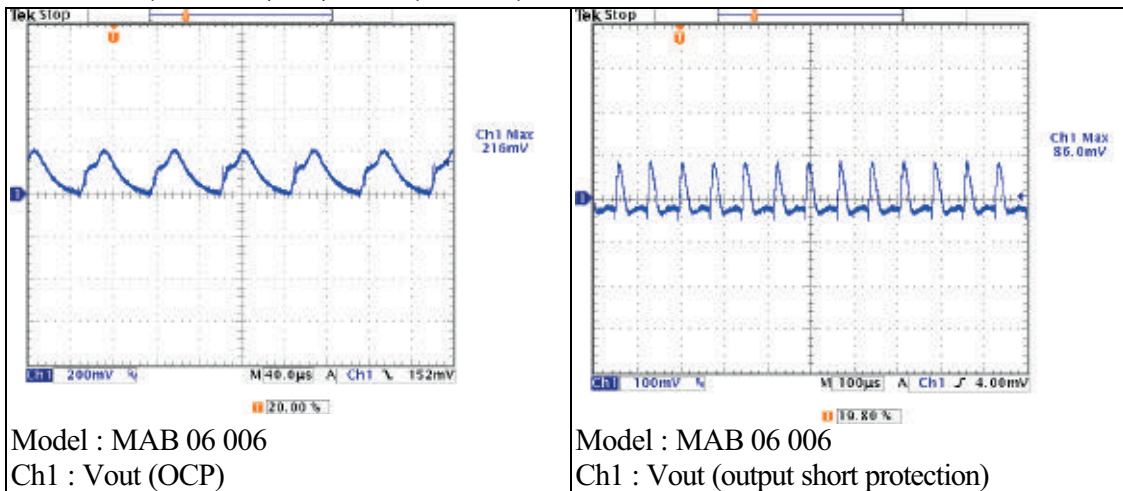
Model : MAB 06 081
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 52.4mVp-p / 54.0mVp-p



Model : MAB 06 084
Ch1 : +Vout Ch2 : -Vout
Ripple & noise : 45.6mVp-p / 52.8mVp-p

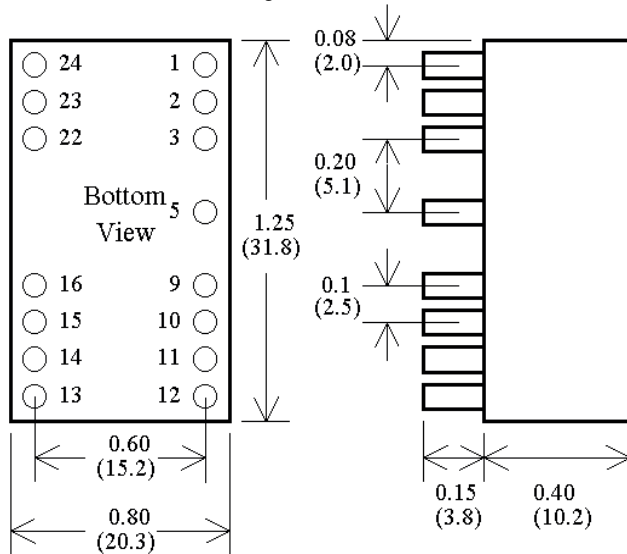


Over current protection (OCP) and output short protection



Mechanical Specifications

A case mechanical outline diagrams



- Note : 1. Pin size is 0.02"inch(0.5mm)DIA.
2. All dimensions in inches(mm)
3. Tolerance .XX=±.02 , .XXX=±.010

Pin connection

500VDC			1.5K and 3.0KVDC		
Pin	Single output	Dual output	Pin	Single output	Dual output
1	+V input	+V input	1	NP	NP
2	NC	- V output	2	- V input	- V input
3	NC	Common	3	- V input	- V input
5	NP	NP	5	NP	NP
9	NP	NP	9	NC	Common
10	- V output	Common	10	NC	NC
11	+V output	+V output	11	NC	- V output
12	- V input	- V input	12	NP	NP
13	- V input	- V input	13	NP	NP
14	+V output	+V output	14	+V output	+V output
15	- V output	Common	15	NC	NC
16	NP	NP	16	- V output	Common
22	NC	Common	22	+V input	+V input
23	NC	- V output	23	+V input	+V input
24	+V input	+V input	24	NP	NP

- Note : 1. NP - No Pin
2. NC - No Connection with pin