



# TEST DATA OF SUW104812 SUCW104812

Regulated DC Power Supply  
Mar 25, 2005

Approved by : Tetsuo Sugimori  
Tetsuo Sugimori Design Manager

Prepared by : Yoshimichi Hirokawa  
Yoshimichi Hirokawa Design Engineer

**COSEL CO.,LTD.**

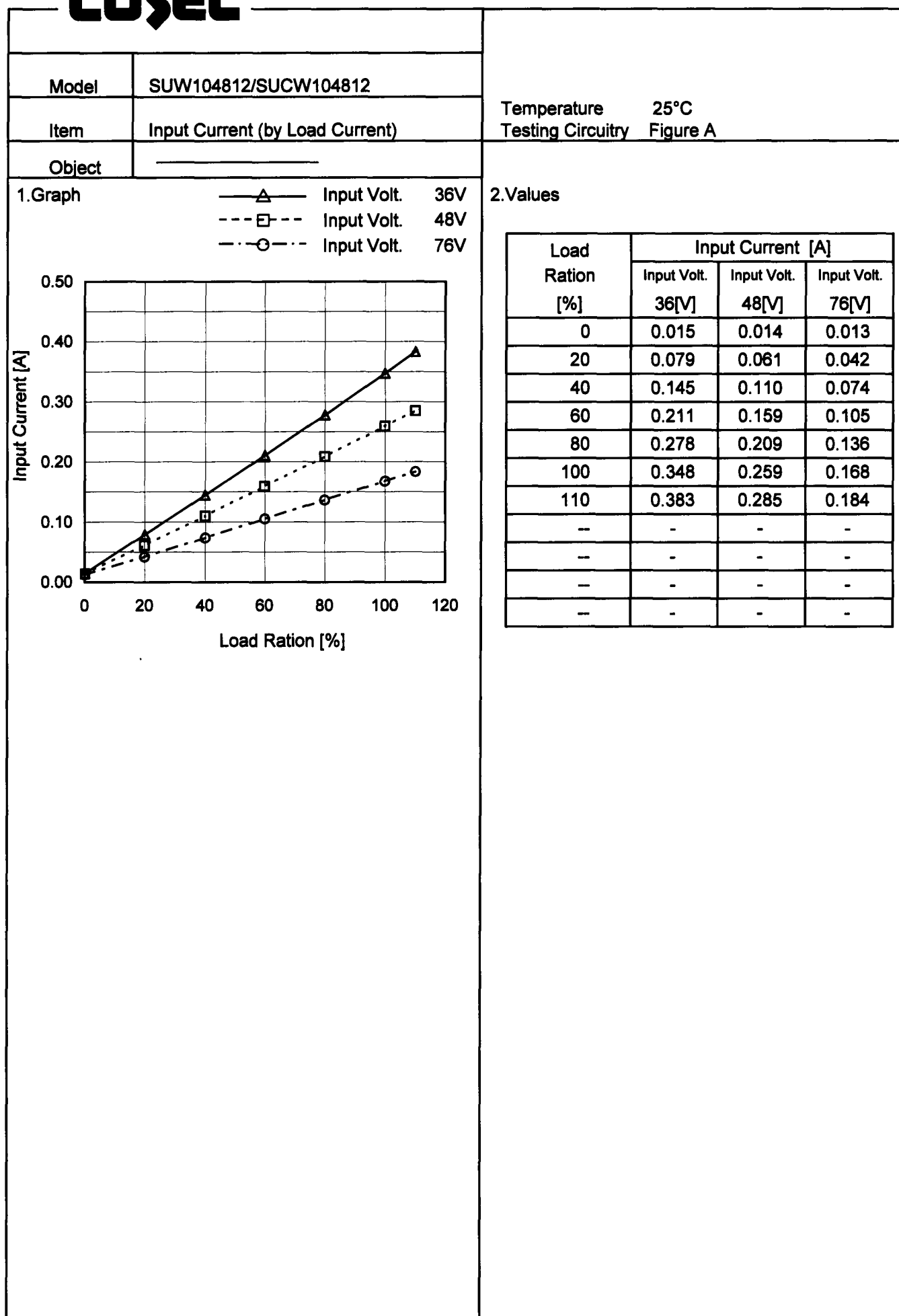
## CONTENTS

1.Input Current (by Input Voltage) . . . . .	1
2.Input Current (by Load Current) . . . . .	2
3.Input Power (by Load Current) . . . . .	3
4.Efficiency (by Input Voltage) . . . . .	4
5.Efficiency (by Load Current) . . . . .	5
6.Line Regulation . . . . .	6
7.Load Regulation . . . . .	7
8.Dynamic Load Response . . . . .	8
9.Ripple Voltage (by Load Current) . . . . .	10
10.Ripple-Noise . . . . .	12
11.Ripple Voltage (by Ambient Temperature) . . . . .	14
12.Ambient Temperature Drift . . . . .	15
13.Output Voltage Accuracy . . . . .	16
14.Time Lapse Drift . . . . .	17
15.Rise and Fall Time . . . . .	18
16.Minimum Input Voltage for Regulated Output Voltage . . . . .	20
17.Overcurrent Protection . . . . .	21
18.Figure of Testing Circuitry . . . . .	22

(Final Page 22)

# COSEL

Model		SUW104812/SUCW104812	
Item		Input Current (by Input Voltage)	
Object			
1.Graph		2.Values	
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <			

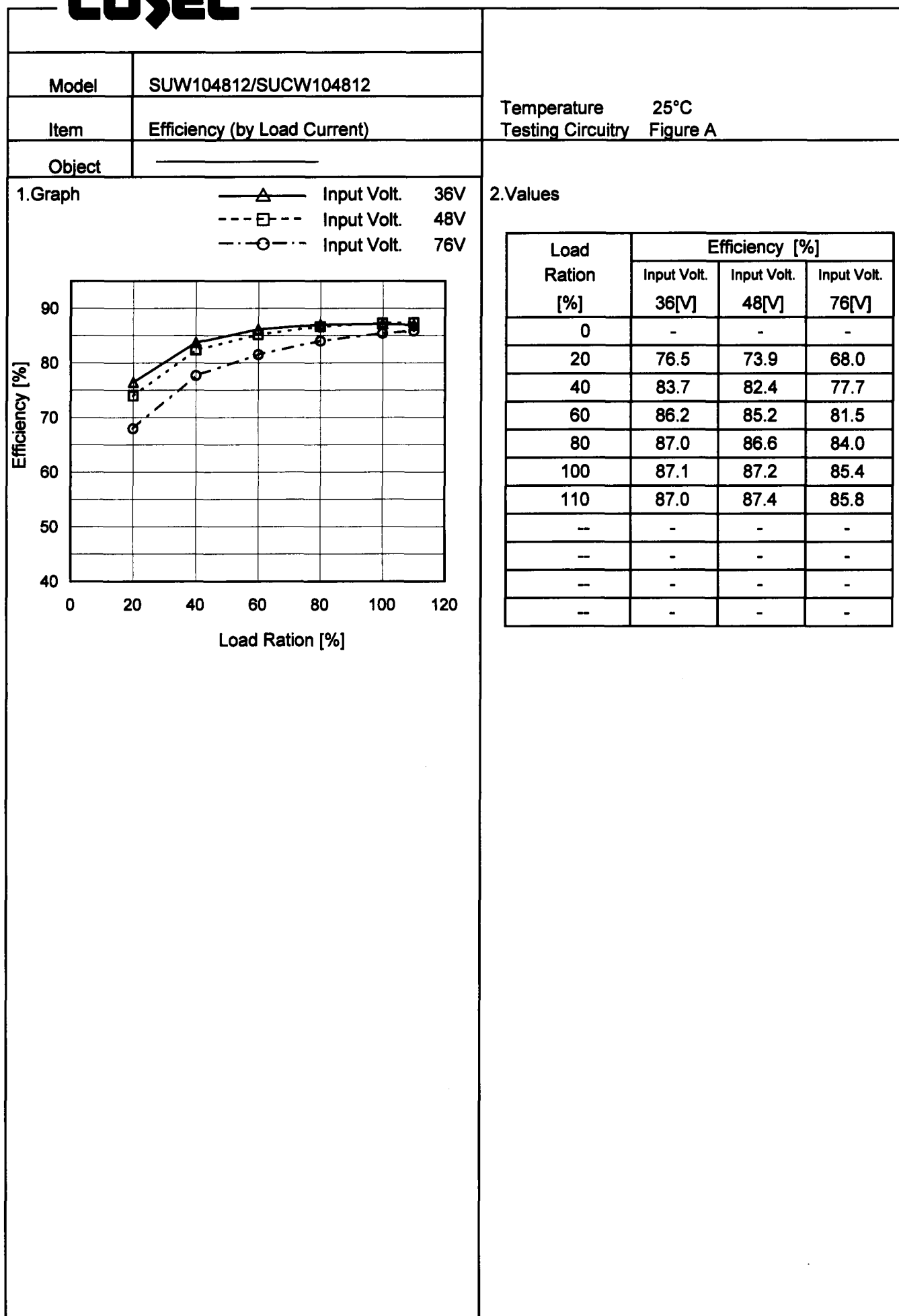
**COSEL**

BC-3814

# COSEL

Model		SUW104812/SUCW104812		Temperature 25°C	
Item		Efficiency (by Input Voltage)		Testing Circuitry Figure A	
Object					
1.Graph				2.Values	
<div><div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div><div><div>—</div><div>△</div><div>—</div></div><div>Load 100%</div></div> <div><div><div>Efficiency [%]</div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>					

# COSEL



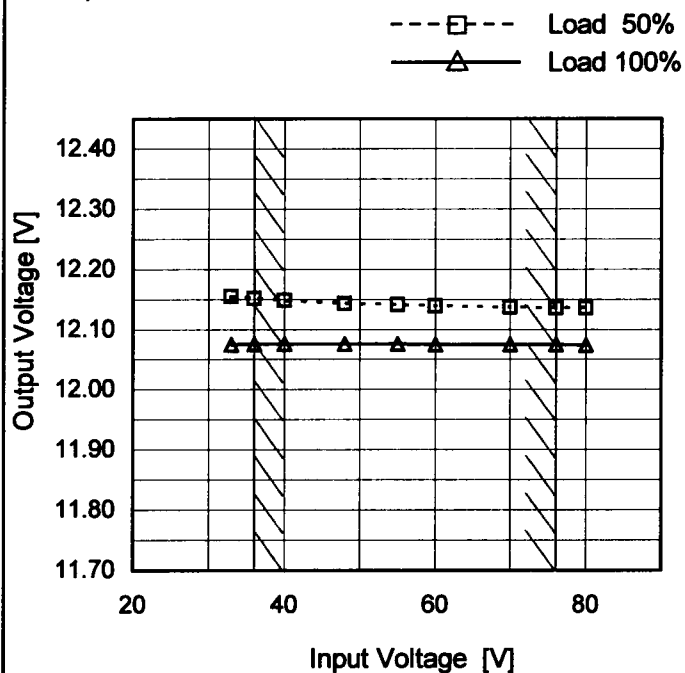
Model SUW104812/SUCW104812

Item Line Regulation

Object +12V0.45A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph

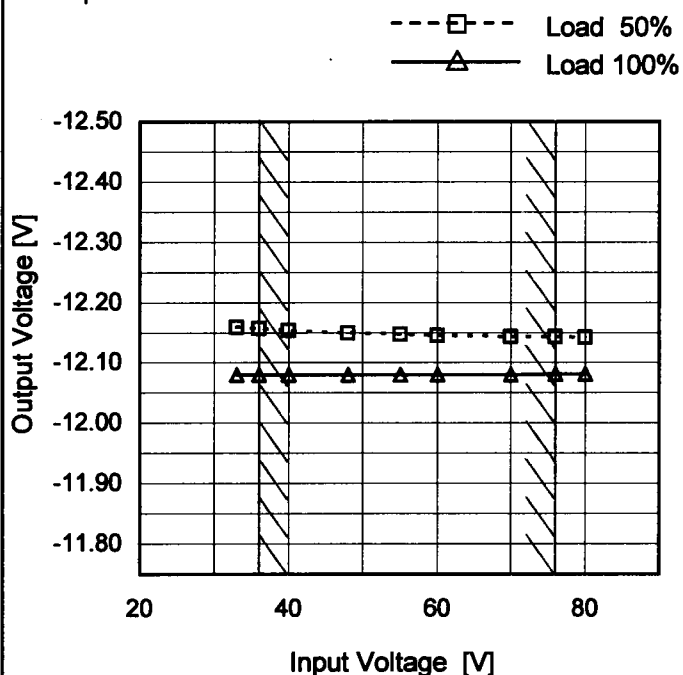


2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	12.155	12.075
36	12.152	12.076
40	12.149	12.076
48	12.144	12.076
55	12.141	12.076
60	12.139	12.075
70	12.137	12.075
76	12.136	12.075
80	12.136	12.074

Object -12V0.45A

1. Graph



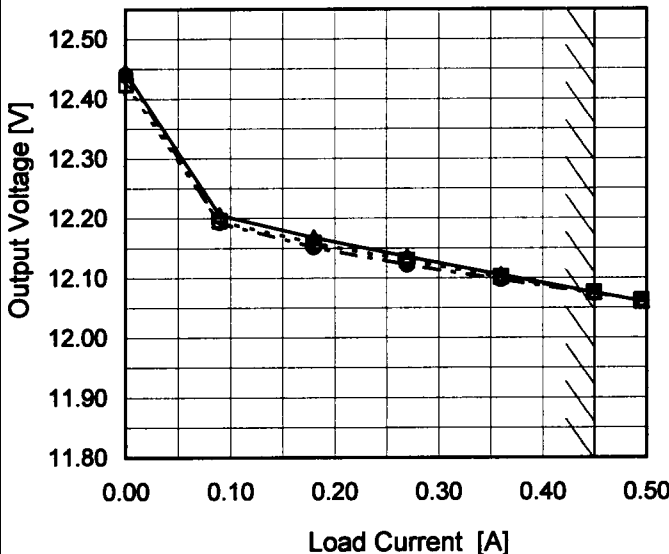
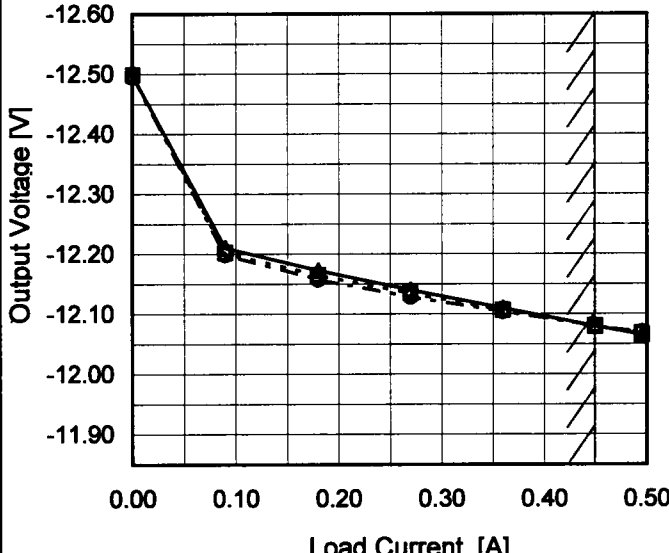
Note: Slanted line shows the range of the rated input voltage.

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	-12.159	-12.080
36	-12.157	-12.080
40	-12.154	-12.080
48	-12.149	-12.080
55	-12.147	-12.080
60	-12.145	-12.081
70	-12.144	-12.081
76	-12.143	-12.081
80	-12.142	-12.082



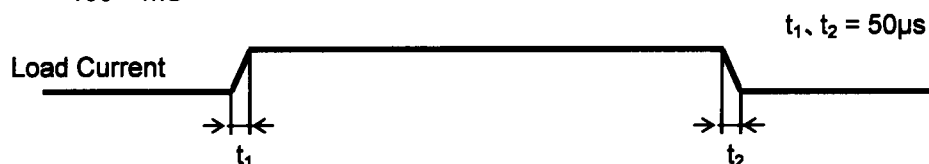
# COSEL

Model		SUW104812/SUCW104812		Temperature 25°C																																																		
Item		Load Regulation		Testing Circuitry Figure A																																																		
Object		+12V0.45A		2.Values																																																		
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>76V</div></div></div>																																																				
<div><div>Output Voltage [V]</div><div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>0.000</td><td>12.445</td><td>12.424</td><td>12.441</td></tr><tr><td>0.090</td><td>12.206</td><td>12.196</td><td>12.193</td></tr><tr><td>0.180</td><td>12.168</td><td>12.159</td><td>12.152</td></tr><tr><td>0.270</td><td>12.136</td><td>12.130</td><td>12.122</td></tr><tr><td>0.360</td><td>12.105</td><td>12.102</td><td>12.098</td></tr><tr><td>0.450</td><td>12.076</td><td>12.076</td><td>12.074</td></tr><tr><td>0.495</td><td>12.061</td><td>12.062</td><td>12.063</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>		Load Current [A]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.000	12.445	12.424	12.441	0.090	12.206	12.196	12.193	0.180	12.168	12.159	12.152	0.270	12.136	12.130	12.122	0.360	12.105	12.102	12.098	0.450	12.076	12.076	12.074	0.495	12.061	12.062	12.063	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
0.000	12.445	12.424	12.441																																																			
0.090	12.206	12.196	12.193																																																			
0.180	12.168	12.159	12.152																																																			
0.270	12.136	12.130	12.122																																																			
0.360	12.105	12.102	12.098																																																			
0.450	12.076	12.076	12.074																																																			
0.495	12.061	12.062	12.063																																																			
—	—	—	—																																																			
—	—	—	—																																																			
—	—	—	—																																																			
—	—	—	—																																																			
Object		-12V0.45A		2.Values																																																		
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>76V</div></div></div>																																																				
<div><div>Output Voltage [V]</div><div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>0.000</td><td>-12.499</td><td>-12.499</td><td>-12.496</td></tr><tr><td>0.090</td><td>-12.211</td><td>-12.202</td><td>-12.199</td></tr><tr><td>0.180</td><td>-12.173</td><td>-12.165</td><td>-12.158</td></tr><tr><td>0.270</td><td>-12.140</td><td>-12.135</td><td>-12.129</td></tr><tr><td>0.360</td><td>-12.110</td><td>-12.107</td><td>-12.105</td></tr><tr><td>0.450</td><td>-12.080</td><td>-12.080</td><td>-12.081</td></tr><tr><td>0.495</td><td>-12.065</td><td>-12.067</td><td>-12.070</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>		Load Current [A]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.000	-12.499	-12.499	-12.496	0.090	-12.211	-12.202	-12.199	0.180	-12.173	-12.165	-12.158	0.270	-12.140	-12.135	-12.129	0.360	-12.110	-12.107	-12.105	0.450	-12.080	-12.080	-12.081	0.495	-12.065	-12.067	-12.070	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
0.000	-12.499	-12.499	-12.496																																																			
0.090	-12.211	-12.202	-12.199																																																			
0.180	-12.173	-12.165	-12.158																																																			
0.270	-12.140	-12.135	-12.129																																																			
0.360	-12.110	-12.107	-12.105																																																			
0.450	-12.080	-12.080	-12.081																																																			
0.495	-12.065	-12.067	-12.070																																																			
—	—	—	—																																																			
—	—	—	—																																																			
—	—	—	—																																																			
—	—	—	—																																																			
Note: Slanted line shows the range of the rated load current.																																																						

# COSEL

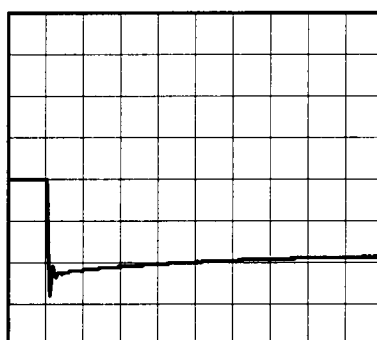
Model	SUW104812/SUCW104812	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V0.45A		

Input Volt. 48 V  
Cycle 100 mS

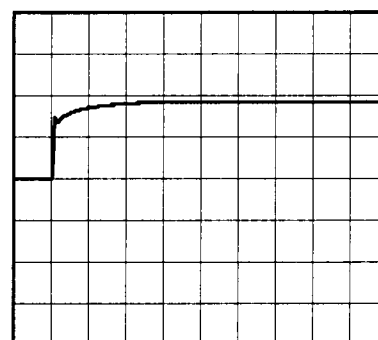


Min. Load (0A)  $\longleftrightarrow$   
Load 100% (0.45A)

200mV/div



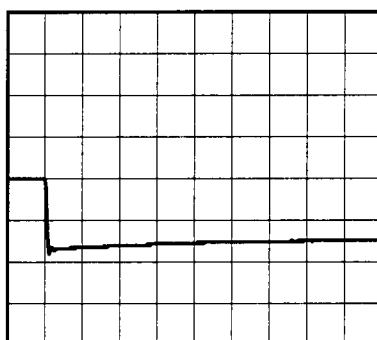
500µs/div



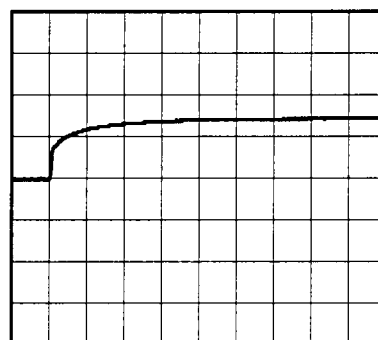
500µs/div

Min. Load (0A)  $\longleftrightarrow$   
Load 50% (0.225A)

200mV/div



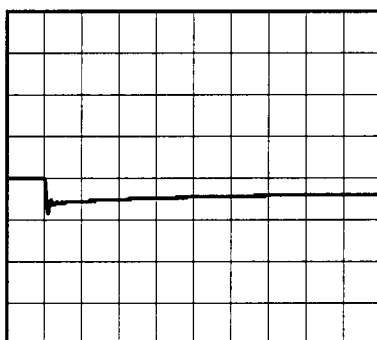
500µs/div



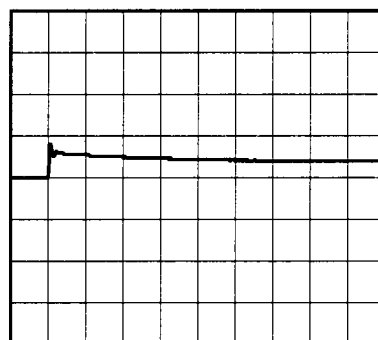
500µs/div

Load 50% (0.225A)  $\longleftrightarrow$   
Load 100% (0.45A)

200mV/div



500µs/div

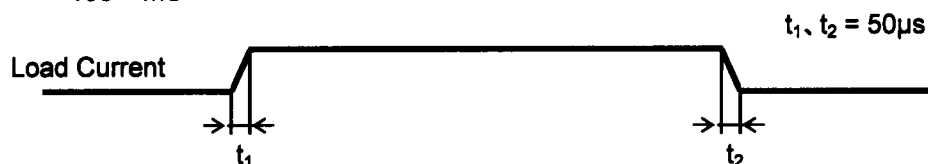


500µs/div

# COSEL

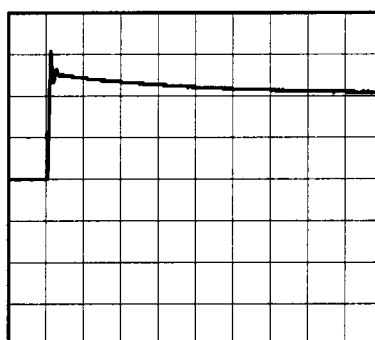
Model	SUW104812/SUCW104812	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	-12V0.45A		

Input Volt. 48 V  
Cycle 100 mS

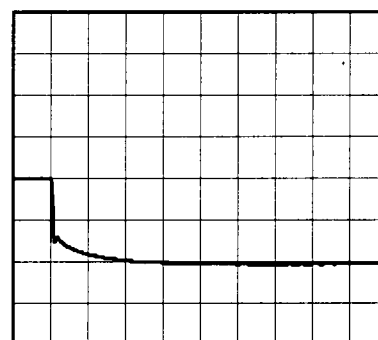


Min. Load (0A)  $\longleftrightarrow$   
Load 100% (0.45A)

200mV/div



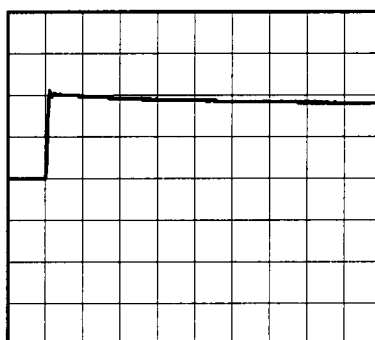
500µs/div



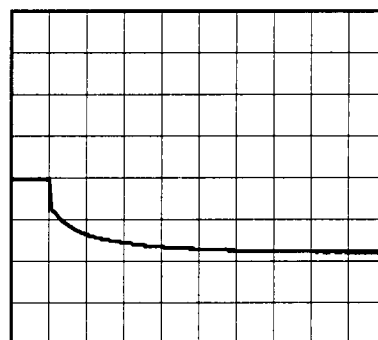
500µs/div

Min. Load (0A)  $\longleftrightarrow$   
Load 50% (0.225A)

200mV/div



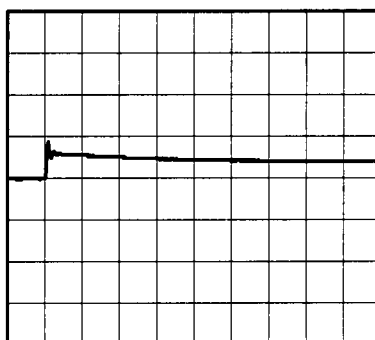
500µs/div



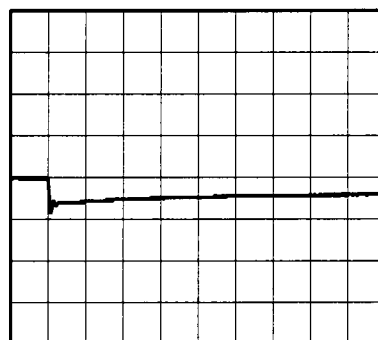
500µs/div

Load 50% (0.225A)  $\longleftrightarrow$   
Load 100% (0.45A)

200mV/div



500µs/div



500µs/div

# COSEL

Model		SUW104812/SUCW104812		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+12V0.45A																																									
1.Graph				2.Values																																							
<div><div><div>—△— Input Volt. 36V</div><div>- - -○- - - Input Volt. 76V</div></div><div>Ripple Voltage [mV]</div><div>Load Current [A]</div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.000</td><td>2</td><td>2</td></tr><tr><td>0.090</td><td>6</td><td>7</td></tr><tr><td>0.180</td><td>5</td><td>8</td></tr><tr><td>0.270</td><td>6</td><td>8</td></tr><tr><td>0.360</td><td>7</td><td>7</td></tr><tr><td>0.450</td><td>8</td><td>7</td></tr><tr><td>0.495</td><td>9</td><td>7</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.000	2	2	0.090	6	7	0.180	5	8	0.270	6	8	0.360	7	7	0.450	8	7	0.495	9	7	—	-	-	—	-	-	—	-	-	—	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 36 [V]	Input Volt. 76 [V]																																									
0.000	2	2																																									
0.090	6	7																																									
0.180	5	8																																									
0.270	6	8																																									
0.360	7	7																																									
0.450	8	7																																									
0.495	9	7																																									
—	-	-																																									
—	-	-																																									
—	-	-																																									
—	-	-																																									
<div>Measured by 100 MHz Oscilloscope.</div> <div>Ripple Voltage is shown as p-p in the figure below.</div> <div>Note: Slanted line shows the range of the rated load current.</div>																																											
<div><div>Ripple [mVp-p]</div><div>Fig.Complex Ripple Wave Form</div></div>																																											

- 10 -

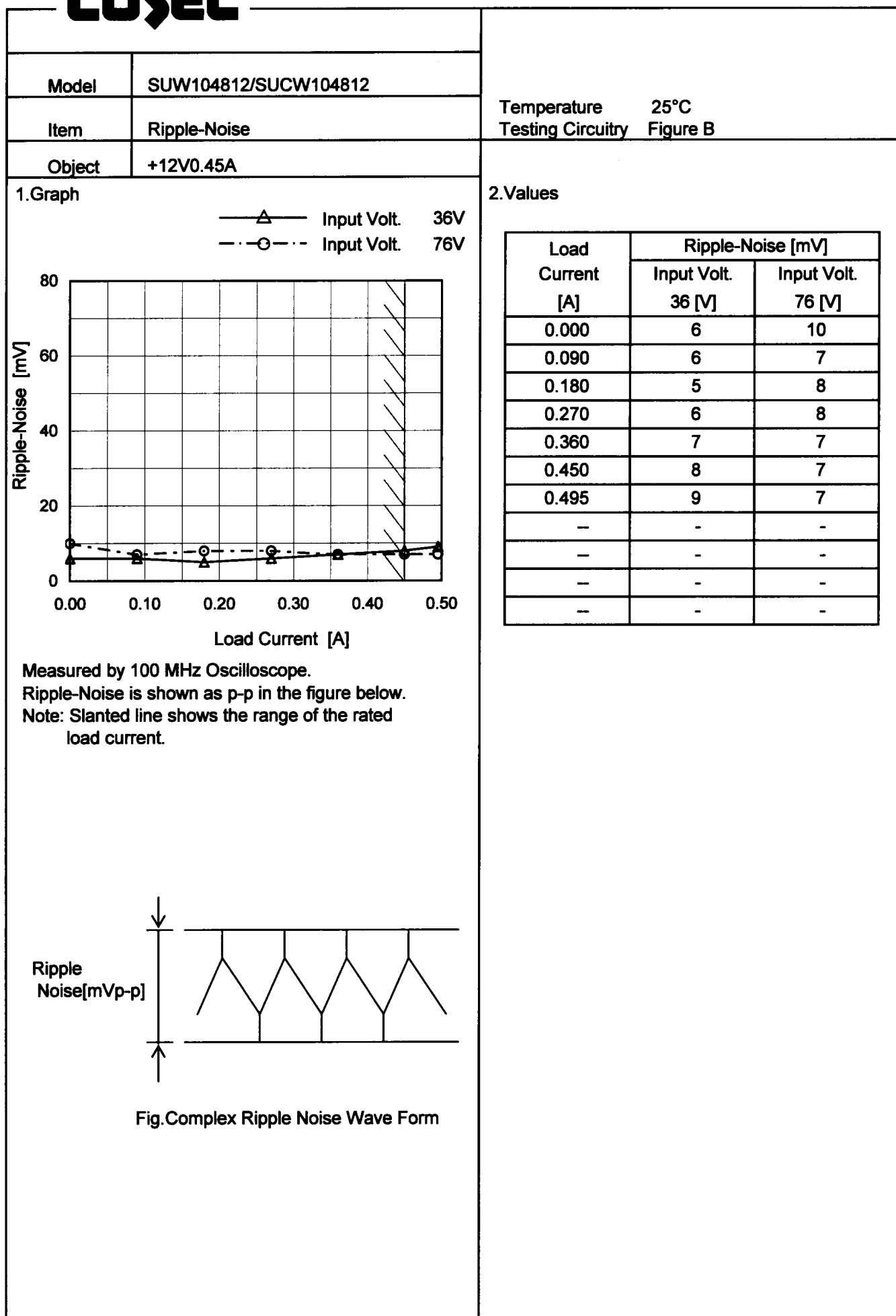
BC-3814

# COSEL

Model		SUW104812/SUCW104812	
Item		Ripple Voltage (by Load Current)	
Object		-12V0.45A	
1.Graph		2.Values	

<

# COSEL



# COSEL

Model		SUW104812/SUCW104812																																							
Item		Ripple-Noise																																							
Object		-12V0.45A																																							
1.Graph		2.Values																																							
<div><div><div>—△— Input Volt. 36V</div><div>- - -○- - - Input Volt. 76V</div></div><p>Measured by 100 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p><div><div>Ripple Noise[mVp-p]</div></div><p>Fig.Complex Ripple Noise Wave Form</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.000</td><td>6</td><td>10</td></tr><tr><td>0.090</td><td>6</td><td>8</td></tr><tr><td>0.180</td><td>6</td><td>9</td></tr><tr><td>0.270</td><td>6</td><td>7</td></tr><tr><td>0.360</td><td>7</td><td>8</td></tr><tr><td>0.450</td><td>7</td><td>8</td></tr><tr><td>0.495</td><td>8</td><td>9</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.000	6	10	0.090	6	8	0.180	6	9	0.270	6	7	0.360	7	8	0.450	7	8	0.495	8	9	—	-	-	—	-	-	—	-	-	—	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 36 [V]	Input Volt. 76 [V]																																							
0.000	6	10																																							
0.090	6	8																																							
0.180	6	9																																							
0.270	6	7																																							
0.360	7	8																																							
0.450	7	8																																							
0.495	8	9																																							
—	-	-																																							
—	-	-																																							
—	-	-																																							
—	-	-																																							

- 13 -

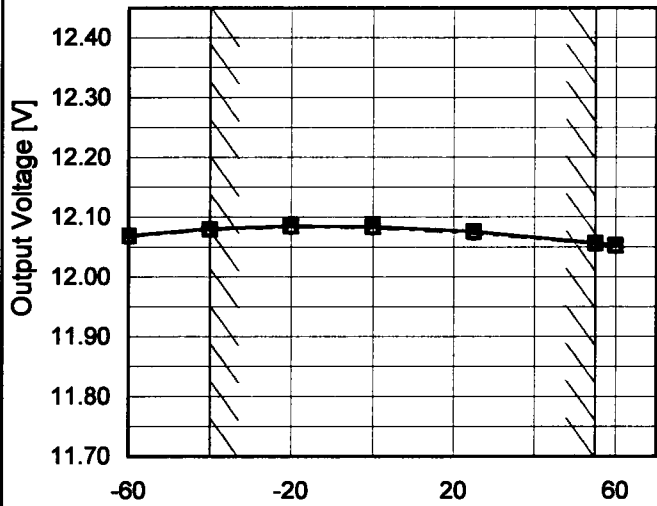
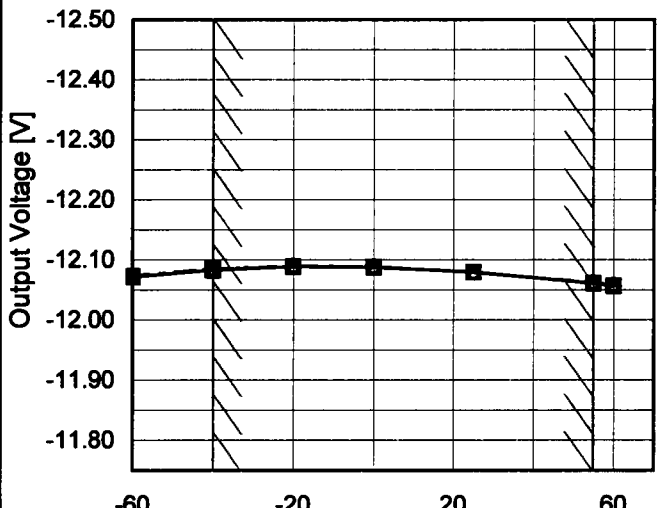
BC-3814

# COSEL

Model		SUW104812/SUCW104812																																							
Item		Ripple Voltage (by Ambient Temp.)																																							
Object		+12V0.45A																																							
1.Graph																																									
<div><div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>Load 50%</div><div>Load 100%</div></div></div><table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>10</td><td>14</td></tr><tr><td>-40</td><td>9</td><td>12</td></tr><tr><td>-20</td><td>8</td><td>11</td></tr><tr><td>0</td><td>6</td><td>8</td></tr><tr><td>25</td><td>5</td><td>6</td></tr><tr><td>55</td><td>4</td><td>5</td></tr><tr><td>60</td><td>4</td><td>4</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr></tbody></table><p>Input Volt. 48V</p></div>				Ambient Temperature [°C]	Load 50%	Load 100%	-60	10	14	-40	9	12	-20	8	11	0	6	8	25	5	6	55	4	5	60	4	4	-	-	-	-	-	-	-	-	-	-	-	-		
Ambient Temperature [°C]	Load 50%	Load 100%																																							
-60	10	14																																							
-40	9	12																																							
-20	8	11																																							
0	6	8																																							
25	5	6																																							
55	4	5																																							
60	4	4																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
Object		-12V0.45A																																							
1.Graph																																									
<div><div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>Load 50%</div><div>Load 100%</div></div></div><table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>15</td><td>20</td></tr><tr><td>-40</td><td>13</td><td>18</td></tr><tr><td>-20</td><td>12</td><td>18</td></tr><tr><td>0</td><td>9</td><td>14</td></tr><tr><td>25</td><td>6</td><td>10</td></tr><tr><td>55</td><td>6</td><td>8</td></tr><tr><td>60</td><td>7</td><td>5</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr></tbody></table><p>Input Volt. 48V</p></div>				Ambient Temperature [°C]	Load 50%	Load 100%	-60	15	20	-40	13	18	-20	12	18	0	9	14	25	6	10	55	6	8	60	7	5	-	-	-	-	-	-	-	-	-	-	-	-		
Ambient Temperature [°C]	Load 50%	Load 100%																																							
-60	15	20																																							
-40	13	18																																							
-20	12	18																																							
0	9	14																																							
25	6	10																																							
55	6	8																																							
60	7	5																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
Measured by 100 MHz Oscilloscope.																																									
Note: Slanted line shows the range of the rated ambient temperature.																																									
Testing Circuitry		Figure B																																							
2.Values																																									
<table><thead><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>10</td><td>14</td></tr><tr><td>-40</td><td>9</td><td>12</td></tr><tr><td>-20</td><td>8</td><td>11</td></tr><tr><td>0</td><td>6</td><td>8</td></tr><tr><td>25</td><td>5</td><td>6</td></tr><tr><td>55</td><td>4</td><td>5</td></tr><tr><td>60</td><td>4</td><td>4</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr></tbody></table>				Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	10	14	-40	9	12	-20	8	11	0	6	8	25	5	6	55	4	5	60	4	4	-	-	-	-	-	-	-	-	-	-	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
	Load 50%	Load 100%																																							
-60	10	14																																							
-40	9	12																																							
-20	8	11																																							
0	6	8																																							
25	5	6																																							
55	4	5																																							
60	4	4																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
2.Values																																									
<table><thead><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>15</td><td>20</td></tr><tr><td>-40</td><td>13</td><td>18</td></tr><tr><td>-20</td><td>12</td><td>18</td></tr><tr><td>0</td><td>9</td><td>14</td></tr><tr><td>25</td><td>6</td><td>10</td></tr><tr><td>55</td><td>6</td><td>8</td></tr><tr><td>60</td><td>7</td><td>5</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td><td>-</td></tr></tbody></table>				Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	15	20	-40	13	18	-20	12	18	0	9	14	25	6	10	55	6	8	60	7	5	-	-	-	-	-	-	-	-	-	-	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
	Load 50%	Load 100%																																							
-60	15	20																																							
-40	13	18																																							
-20	12	18																																							
0	9	14																																							
25	6	10																																							
55	6	8																																							
60	7	5																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							



# COSEL

Model	SUW104812/SUCW104812																																																						
Item	Ambient Temperature Drift																																																						
Object	+12V0.45A																																																						
1.Graph		—△— Input Volt. 36V ---□--- Input Volt. 48V ---○--- Input Volt. 76V																																																					
		2.Values																																																					
		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-60</td><td>12.069</td><td>12.069</td><td>12.068</td></tr><tr><td>-40</td><td>12.081</td><td>12.080</td><td>12.080</td></tr><tr><td>-20</td><td>12.085</td><td>12.085</td><td>12.084</td></tr><tr><td>0</td><td>12.084</td><td>12.084</td><td>12.083</td></tr><tr><td>25</td><td>12.076</td><td>12.076</td><td>12.074</td></tr><tr><td>55</td><td>12.057</td><td>12.057</td><td>12.056</td></tr><tr><td>60</td><td>12.053</td><td>12.053</td><td>12.052</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr></table>			Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-60	12.069	12.069	12.068	-40	12.081	12.080	12.080	-20	12.085	12.085	12.084	0	12.084	12.084	12.083	25	12.076	12.076	12.074	55	12.057	12.057	12.056	60	12.053	12.053	12.052	—	-	-	-	—	-	-	-	—	-	-	-	—	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																						
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																				
-60	12.069	12.069	12.068																																																				
-40	12.081	12.080	12.080																																																				
-20	12.085	12.085	12.084																																																				
0	12.084	12.084	12.083																																																				
25	12.076	12.076	12.074																																																				
55	12.057	12.057	12.056																																																				
60	12.053	12.053	12.052																																																				
—	-	-	-																																																				
—	-	-	-																																																				
—	-	-	-																																																				
—	-	-	-																																																				
Object	-12V0.45A																																																						
1.Graph		—△— Input Volt. 36V ---□--- Input Volt. 48V ---○--- Input Volt. 76V																																																					
		2.Values																																																					
		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-60</td><td>-12.072</td><td>-12.073</td><td>-12.074</td></tr><tr><td>-40</td><td>-12.083</td><td>-12.085</td><td>-12.085</td></tr><tr><td>-20</td><td>-12.089</td><td>-12.089</td><td>-12.090</td></tr><tr><td>0</td><td>-12.088</td><td>-12.088</td><td>-12.089</td></tr><tr><td>25</td><td>-12.080</td><td>-12.080</td><td>-12.080</td></tr><tr><td>55</td><td>-12.061</td><td>-12.061</td><td>-12.062</td></tr><tr><td>60</td><td>-12.057</td><td>-12.057</td><td>-12.058</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td><td>-</td></tr></table>			Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-60	-12.072	-12.073	-12.074	-40	-12.083	-12.085	-12.085	-20	-12.089	-12.089	-12.090	0	-12.088	-12.088	-12.089	25	-12.080	-12.080	-12.080	55	-12.061	-12.061	-12.062	60	-12.057	-12.057	-12.058	—	-	-	-	—	-	-	-	—	-	-	-	—	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																						
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																				
-60	-12.072	-12.073	-12.074																																																				
-40	-12.083	-12.085	-12.085																																																				
-20	-12.089	-12.089	-12.090																																																				
0	-12.088	-12.088	-12.089																																																				
25	-12.080	-12.080	-12.080																																																				
55	-12.061	-12.061	-12.062																																																				
60	-12.057	-12.057	-12.058																																																				
—	-	-	-																																																				
—	-	-	-																																																				
—	-	-	-																																																				
—	-	-	-																																																				
Note: Slanted line shows the range of the rated ambient temperature.																																																							

- 15 -

BC-3814



		Testing Circuitry Figure A
Model	SUW104812/SUCW104812	
Item	Output Voltage Accuracy	

### 1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -40 - 55°C

Input Voltage : 36 - 76V

Load Current (AVR 1) : 0 - 0.45A (AVR 2) : 0 - 0.45A

\* Other Output : Rated Load

\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

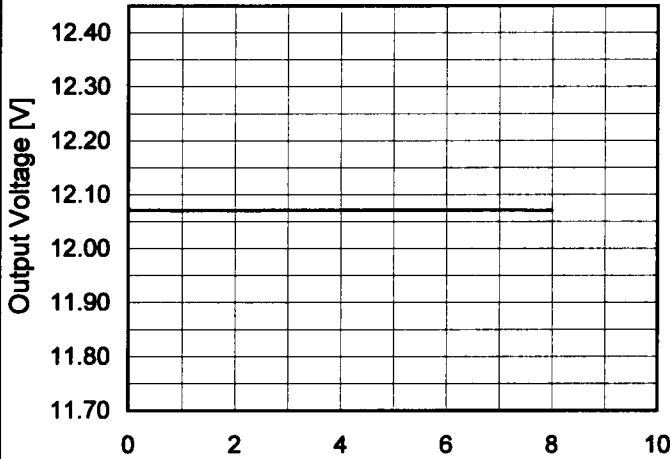
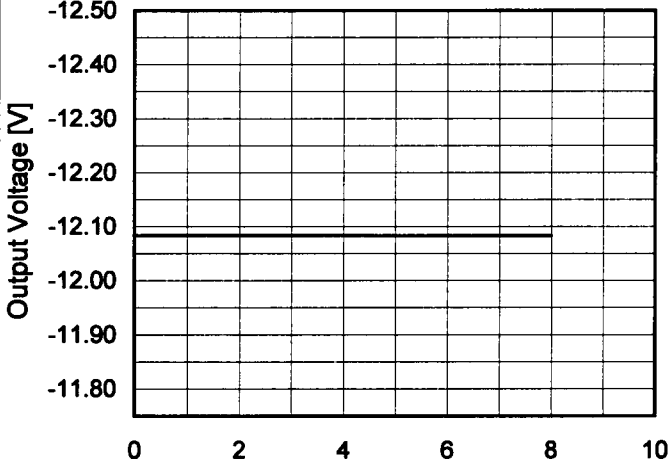
\* Output Voltage Accuracy (Ratio) =  $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

### 2. Values

Object		+12V0.45A			
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy
			Current[A]	Voltage[V]	Value [mV]    Ration [%]
Maximum Voltage	0	36	0	12.446	±195    ±1.6
Minimum Voltage	55	76	0.45	12.056	

Object		-12V0.45A			
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy
			Current[A]	Voltage[V]	Value [mV]    Ration [%]
Maximum Voltage	0	36	0	-12.504	±222    ±1.9
Minimum Voltage	55	36	0.45	-12.061	

# COSEL

Model	SUW104812/SUCW104812	Temperature 25°C Testing Circuitry Figure A																							
Item	Time Lapse Drift																								
Object	+12V0.45A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 48V Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>12.077</td></tr><tr><td>0.5</td><td>12.071</td></tr><tr><td>1.0</td><td>12.071</td></tr><tr><td>2.0</td><td>12.071</td></tr><tr><td>3.0</td><td>12.071</td></tr><tr><td>4.0</td><td>12.071</td></tr><tr><td>5.0</td><td>12.071</td></tr><tr><td>6.0</td><td>12.071</td></tr><tr><td>7.0</td><td>12.071</td></tr><tr><td>8.0</td><td>12.071</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	12.077	0.5	12.071	1.0	12.071	2.0	12.071	3.0	12.071	4.0	12.071	5.0	12.071	6.0	12.071	7.0	12.071	8.0	12.071
Time since start [H]	Output Voltage [V]																								
0.0	12.077																								
0.5	12.071																								
1.0	12.071																								
2.0	12.071																								
3.0	12.071																								
4.0	12.071																								
5.0	12.071																								
6.0	12.071																								
7.0	12.071																								
8.0	12.071																								
Object	-12V0.45A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 48V Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>-12.087</td></tr><tr><td>0.5</td><td>-12.084</td></tr><tr><td>1.0</td><td>-12.084</td></tr><tr><td>2.0</td><td>-12.084</td></tr><tr><td>3.0</td><td>-12.084</td></tr><tr><td>4.0</td><td>-12.084</td></tr><tr><td>5.0</td><td>-12.083</td></tr><tr><td>6.0</td><td>-12.084</td></tr><tr><td>7.0</td><td>-12.084</td></tr><tr><td>8.0</td><td>-12.084</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	-12.087	0.5	-12.084	1.0	-12.084	2.0	-12.084	3.0	-12.084	4.0	-12.084	5.0	-12.083	6.0	-12.084	7.0	-12.084	8.0	-12.084
Time since start [H]	Output Voltage [V]																								
0.0	-12.087																								
0.5	-12.084																								
1.0	-12.084																								
2.0	-12.084																								
3.0	-12.084																								
4.0	-12.084																								
5.0	-12.083																								
6.0	-12.084																								
7.0	-12.084																								
8.0	-12.084																								

# COSEL

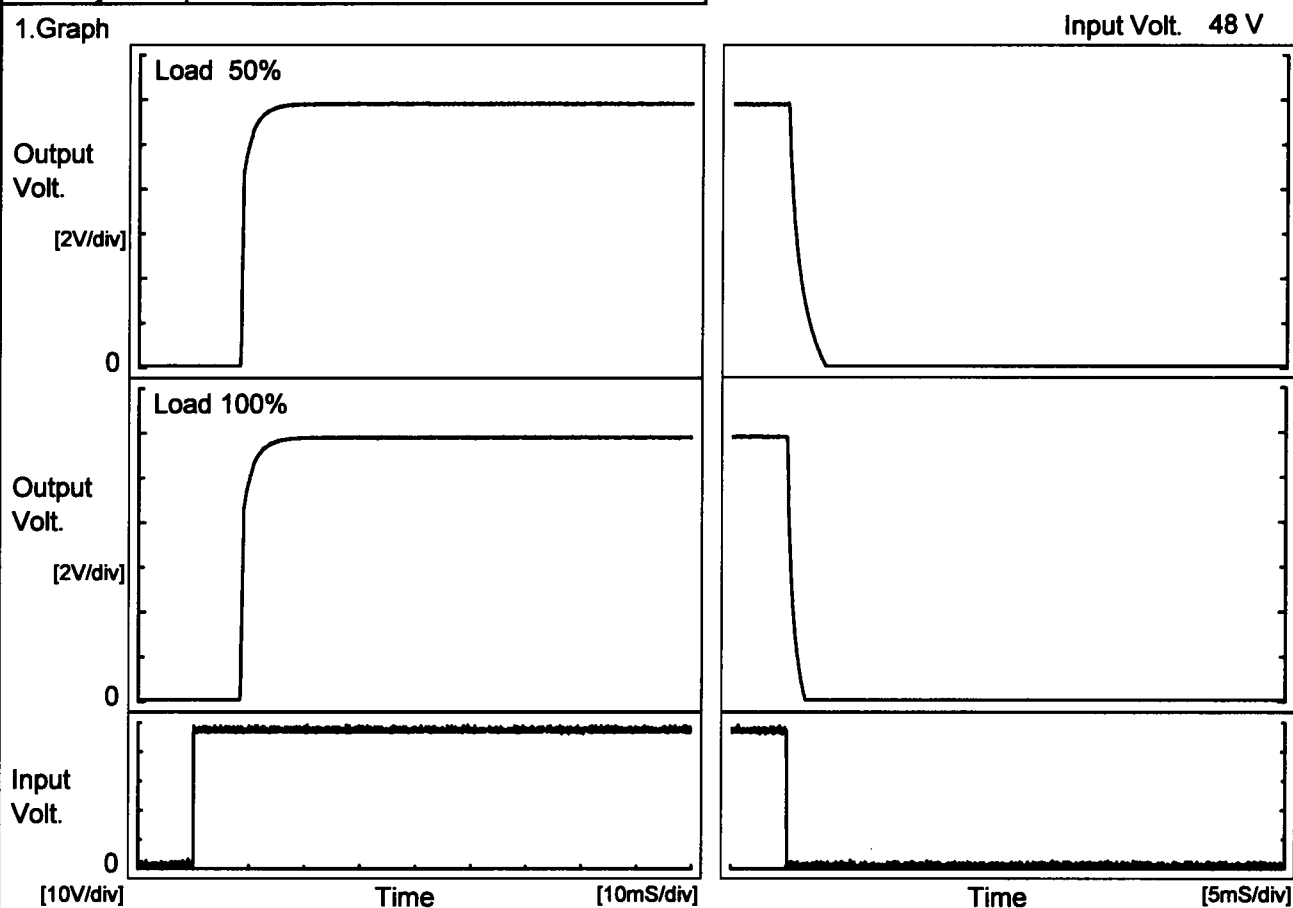
Model SUW104812/SUCW104812

Item Rise and Fall Time

Object +12V0.45A

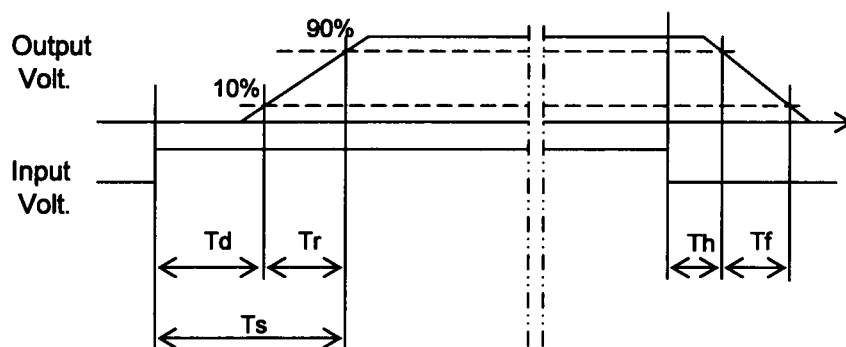
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

		[mS]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		8.4	2.7	11.1	0.1	2.3
100 %		8.5	2.8	11.3	0.1	1.2

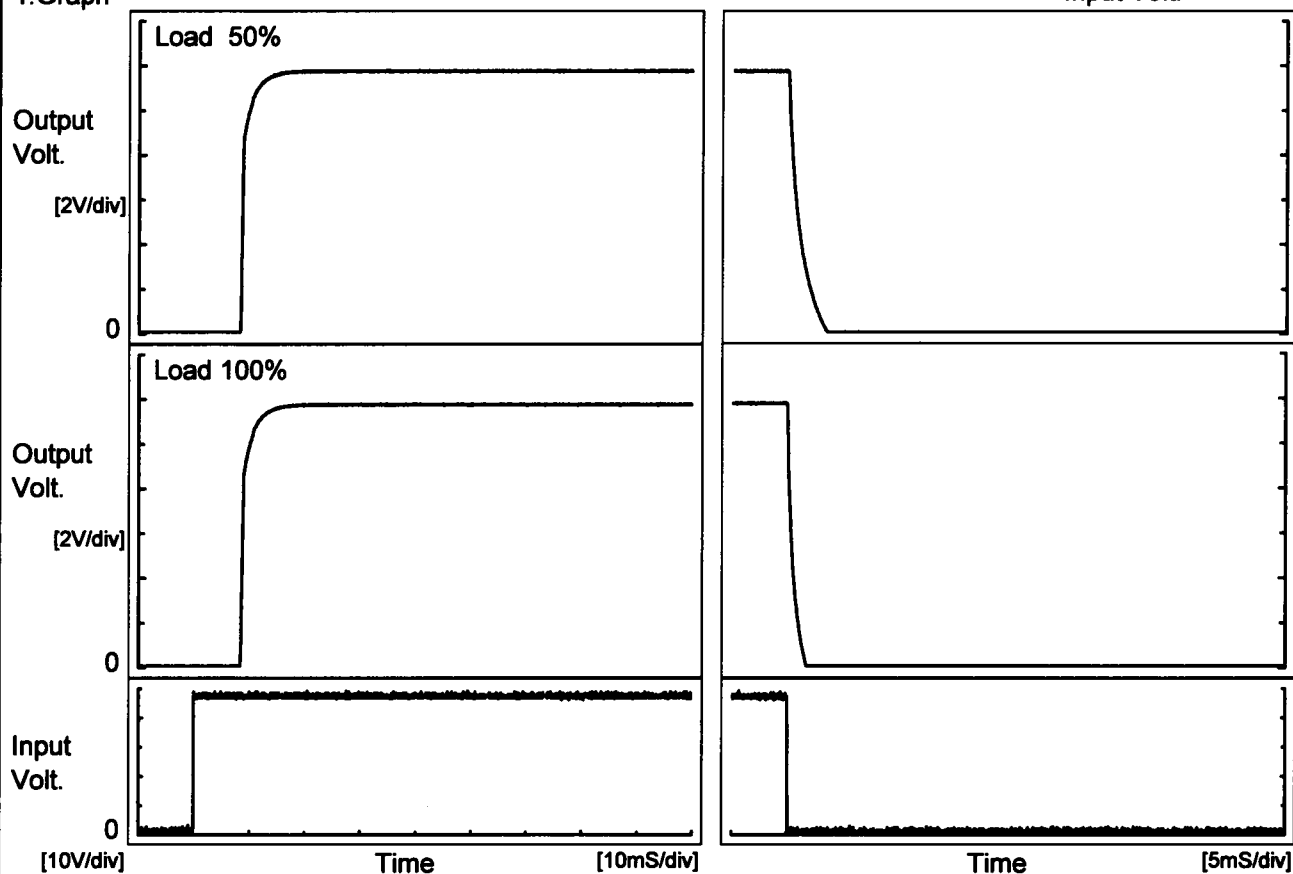


**COSEL**

Model	SUW104812	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	-12V0.45A		

## 1.Graph

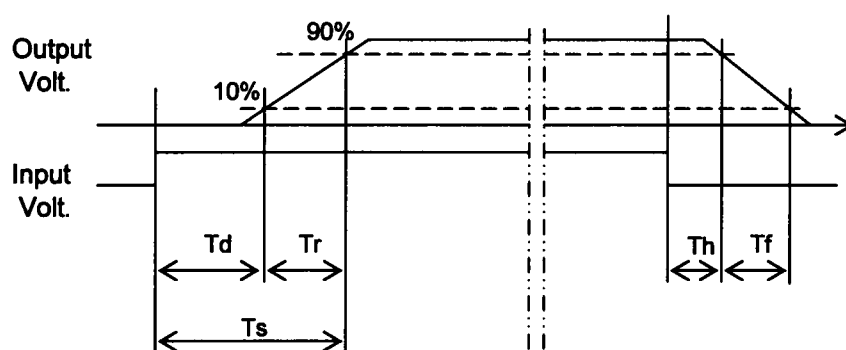
Input Volt. 48 V



## 2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	8.4	2.8	11.2	0.1	2.4
100 %	8.5	2.9	11.4	0.1	1.2



# COSEL

Model		SUW104812/SUCW104812																																					
Item		Minimum Input Voltage for Regulated Output Voltage																																					
Object		+12V0.45A																																					
1.Graph																																							
<div><div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div><div><div><div>---</div><div>△</div><div>---</div></div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>26.9</td><td>27.0</td></tr><tr><td>-40</td><td>27.1</td><td>27.1</td></tr><tr><td>-20</td><td>27.4</td><td>27.5</td></tr><tr><td>0</td><td>27.5</td><td>27.5</td></tr><tr><td>25</td><td>27.9</td><td>27.9</td></tr><tr><td>55</td><td>28.1</td><td>27.9</td></tr><tr><td>60</td><td>28.1</td><td>27.9</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></tbody></table>				Ambient Temperature [°C]	Load 50%	Load 100%	-60	26.9	27.0	-40	27.1	27.1	-20	27.4	27.5	0	27.5	27.5	25	27.9	27.9	55	28.1	27.9	60	28.1	27.9	—	-	-	—	-	-	—	-	-	—	-	-
Ambient Temperature [°C]	Load 50%	Load 100%																																					
-60	26.9	27.0																																					
-40	27.1	27.1																																					
-20	27.4	27.5																																					
0	27.5	27.5																																					
25	27.9	27.9																																					
55	28.1	27.9																																					
60	28.1	27.9																																					
—	-	-																																					
—	-	-																																					
—	-	-																																					
—	-	-																																					
2.Values																																							

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	26.9	27.0
-40	27.1	27.1
-20	27.4	27.5
0	27.5	27.5
25	27.9	27.9
55	28.1	27.9
60	28.1	27.9
—	-	-
—	-	-
—	-	-
—	-	-

Object		-12V0.45A																																					
1.Graph																																							
<div><div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div><div><div><div>---</div><div>△</div><div>---</div></div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-60</td><td>26.8</td><td>26.9</td></tr><tr><td>-40</td><td>26.9</td><td>27.0</td></tr><tr><td>-20</td><td>27.3</td><td>27.4</td></tr><tr><td>0</td><td>27.3</td><td>27.4</td></tr><tr><td>25</td><td>27.7</td><td>27.8</td></tr><tr><td>55</td><td>28.0</td><td>27.7</td></tr><tr><td>60</td><td>28.0</td><td>27.7</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></tbody></table>				Ambient Temperature [°C]	Load 50%	Load 100%	-60	26.8	26.9	-40	26.9	27.0	-20	27.3	27.4	0	27.3	27.4	25	27.7	27.8	55	28.0	27.7	60	28.0	27.7	—	-	-	—	-	-	—	-	-	—	-	-
Ambient Temperature [°C]	Load 50%	Load 100%																																					
-60	26.8	26.9																																					
-40	26.9	27.0																																					
-20	27.3	27.4																																					
0	27.3	27.4																																					
25	27.7	27.8																																					
55	28.0	27.7																																					
60	28.0	27.7																																					
—	-	-																																					
—	-	-																																					
—	-	-																																					
—	-	-																																					
2.Values																																							

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	26.8	26.9
-40	26.9	27.0
-20	27.3	27.4
0	27.3	27.4
25	27.7	27.8
55	28.0	27.7
60	28.0	27.7
—	-	-
—	-	-
—	-	-
—	-	-

Note: Slanted line shows the range of the rated ambient temperature.

- 20 -

BC-3814

# COSEL

Model		SUW104812/SUCW104812		Temperature 25°C																																																								
Item		Overcurrent Protection		Testing Circuitry Figure A																																																								
Object		+12V0.45A																																																										
1.Graph		<div><div></div>Input Volt. 36V</div> <div><div></div>Input Volt. 48V</div> <div><div></div>Input Volt. 76V</div>		2.Values																																																								
<div><div>Output Voltage [V]</div><div><div>0.01.02.0</div><div>Load Current [A]</div></div></div>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>12.0</td><td>0.62</td><td>0.64</td><td>0.62</td></tr><tr><td>11.4</td><td>0.77</td><td>0.87</td><td>0.93</td></tr><tr><td>10.8</td><td>0.84</td><td>0.94</td><td>1.00</td></tr><tr><td>9.6</td><td>0.99</td><td>1.11</td><td>1.15</td></tr><tr><td>8.4</td><td>1.13</td><td>1.25</td><td>1.28</td></tr><tr><td>7.2</td><td>1.22</td><td>1.33</td><td>1.34</td></tr><tr><td>6.0</td><td>1.29</td><td>1.39</td><td>1.36</td></tr><tr><td>4.8</td><td>1.38</td><td>1.46</td><td>1.34</td></tr><tr><td>3.6</td><td>1.49</td><td>1.52</td><td>1.28</td></tr><tr><td>2.4</td><td>1.60</td><td>1.52</td><td>1.22</td></tr><tr><td>1.2</td><td>1.62</td><td>1.52</td><td>1.14</td></tr><tr><td>0.0</td><td>1.67</td><td>1.47</td><td>1.63</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	12.0	0.62	0.64	0.62	11.4	0.77	0.87	0.93	10.8	0.84	0.94	1.00	9.6	0.99	1.11	1.15	8.4	1.13	1.25	1.28	7.2	1.22	1.33	1.34	6.0	1.29	1.39	1.36	4.8	1.38	1.46	1.34	3.6	1.49	1.52	1.28	2.4	1.60	1.52	1.22	1.2	1.62	1.52	1.14	0.0	1.67	1.47	1.63
Output Voltage [V]	Load Current [A]																																																											
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																									
12.0	0.62	0.64	0.62																																																									
11.4	0.77	0.87	0.93																																																									
10.8	0.84	0.94	1.00																																																									
9.6	0.99	1.11	1.15																																																									
8.4	1.13	1.25	1.28																																																									
7.2	1.22	1.33	1.34																																																									
6.0	1.29	1.39	1.36																																																									
4.8	1.38	1.46	1.34																																																									
3.6	1.49	1.52	1.28																																																									
2.4	1.60	1.52	1.22																																																									
1.2	1.62	1.52	1.14																																																									
0.0	1.67	1.47	1.63																																																									
Object		-12V0.45A																																																										
1.Graph		<div><div></div>Input Volt. 36V</div> <div><div></div>Input Volt. 48V</div> <div><div></div>Input Volt. 76V</div>		2.Values																																																								
<div><div>Output Voltage [V]</div><div><div>0.01.02.0</div><div>Load Current [A]</div></div></div>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-12.0</td><td>0.70</td><td>0.79</td><td>0.84</td></tr><tr><td>-11.4</td><td>0.77</td><td>0.88</td><td>0.93</td></tr><tr><td>-10.8</td><td>0.82</td><td>0.95</td><td>1.00</td></tr><tr><td>-9.6</td><td>0.98</td><td>1.10</td><td>1.15</td></tr><tr><td>-8.4</td><td>1.12</td><td>1.25</td><td>1.28</td></tr><tr><td>-7.2</td><td>1.21</td><td>1.33</td><td>1.34</td></tr><tr><td>-6.0</td><td>1.29</td><td>1.39</td><td>1.37</td></tr><tr><td>-4.8</td><td>1.38</td><td>1.46</td><td>1.34</td></tr><tr><td>-3.6</td><td>1.49</td><td>1.52</td><td>1.29</td></tr><tr><td>-2.4</td><td>1.60</td><td>1.52</td><td>1.23</td></tr><tr><td>-1.2</td><td>1.62</td><td>1.53</td><td>1.16</td></tr><tr><td>0.0</td><td>1.67</td><td>1.48</td><td>1.70</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-12.0	0.70	0.79	0.84	-11.4	0.77	0.88	0.93	-10.8	0.82	0.95	1.00	-9.6	0.98	1.10	1.15	-8.4	1.12	1.25	1.28	-7.2	1.21	1.33	1.34	-6.0	1.29	1.39	1.37	-4.8	1.38	1.46	1.34	-3.6	1.49	1.52	1.29	-2.4	1.60	1.52	1.23	-1.2	1.62	1.53	1.16	0.0	1.67	1.48	1.70
Output Voltage [V]	Load Current [A]																																																											
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																									
-12.0	0.70	0.79	0.84																																																									
-11.4	0.77	0.88	0.93																																																									
-10.8	0.82	0.95	1.00																																																									
-9.6	0.98	1.10	1.15																																																									
-8.4	1.12	1.25	1.28																																																									
-7.2	1.21	1.33	1.34																																																									
-6.0	1.29	1.39	1.37																																																									
-4.8	1.38	1.46	1.34																																																									
-3.6	1.49	1.52	1.29																																																									
-2.4	1.60	1.52	1.23																																																									
-1.2	1.62	1.53	1.16																																																									
0.0	1.67	1.48	1.70																																																									
Note: Slanted line shows the range of the rated load current.																																																												

- 21 -

BC-3814

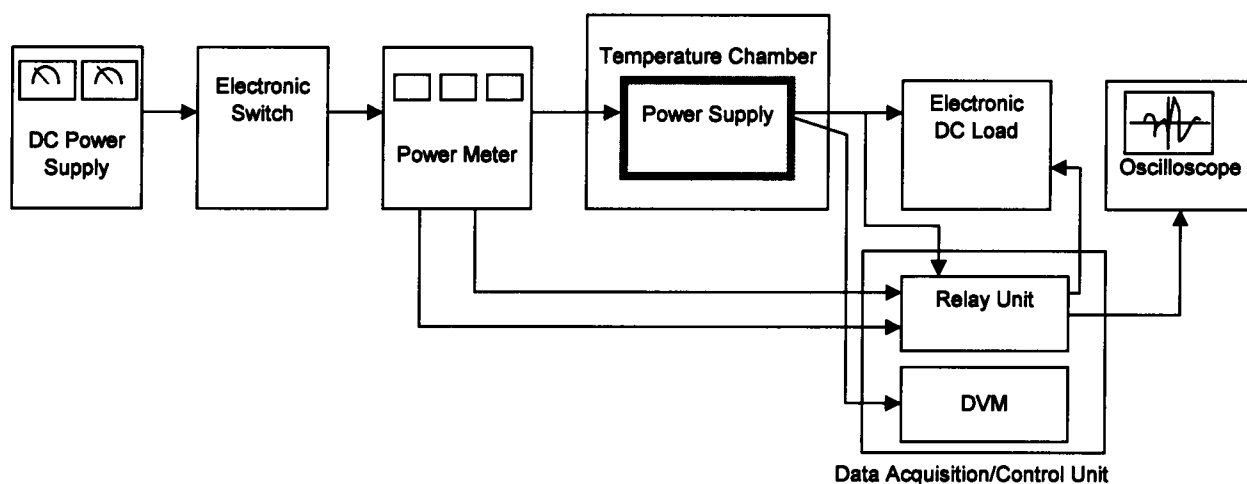


Figure A

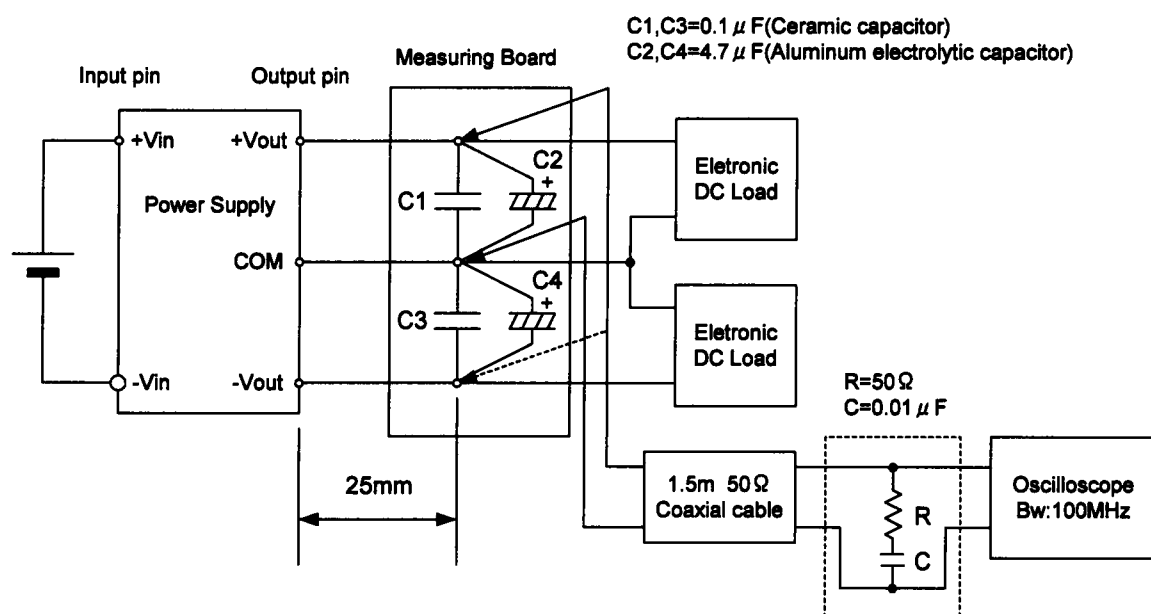


Figure B (Ripple and Ripple noise Characteristic)