

# CS2012B Datasheet

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DiGi Electronics Part Number	CS2012B-DG
Manufacturer	<a href="#">CUI Devices</a>
Manufacturer Product Number	CS2012B
Description	CURRENT SENSOR,OPEN LOOP,20A,+12
Detailed Description	Current Sensor 20A 1 Channel Open Loop Bidirectional Module

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## Purchase and inquiry

Manufacturer Product Number:

CS2012B

Series:

CSXX12B

For Measuring:

AC

Current - Sensing:

20A

Output:

Ratiometric, Voltage

Frequency:

DC ~ 40kHz

Accuracy:

±4.2%

Response Time:

3μs

Operating Temperature:

-10°C ~ 75°C

Mounting Type:

Through Hole

Base Product Number:

CS2012

Manufacturer:

CUI Devices

Product Status:

Active

Sensor Type:

Open Loop

Number of Channels:

1

Sensitivity:

-

Linearity:

±0.5%

Voltage - Supply:

11.4V ~ 12.6V

Current - Supply (Max):

25mA

Polarization:

Bidirectional

Package / Case:

Module

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

9030.33.3400

Moisture Sensitivity Level (MSL):

Not Applicable

ECCN:

EAR99

**SERIES:** CSXX12B | **DESCRIPTION:** CURRENT SENSOR

**FEATURES**

- open loop
- bipolar
- detects current direction
- single channel



**MODEL**

MODEL	rated current (If)	linearity range <sup>1</sup> (Im)
	[A <sub>RMS</sub> ]	[A <sub>PEAK</sub> ]
CS0312B	±3	+9/-3
CS0512B	±5	+15/-5
CS1012B	±10	+30/-10
CS1512B	±15	+45/-15
CS2012B	±20	+60/-20

Notes: 1. Im is the maximum peak current for which the output voltage specifications are guaranteed, however the If RMS rating must not be exceeded.  
 2. All specifications measured at 25°C, RI=10 kΩ, unless otherwise noted.  
 3. It is recommended to add a 1 μF capacitor connected between the common terminal 4 and the +12 V terminal 1 to avoid noise problems.

**SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
supply voltage (Vcc)		11.4	12.0	12.6	V
max current consumption (Ic)				25	mA
output voltage (Vo)	at +If	4.47	4.50	4.53	V
	at -If	0.47	0.50	0.53	V
zero current offset voltage (Vr)	after demagnetization	2.48	2.50	2.52	V
output voltage linearity <sup>4</sup> (ΔKo)				±0.5	%
response (tr)	at di/dt = If/μs		3		μs
output voltage temperature characteristics				±0.1	%/°C
zero current offset voltage characteristics				±1.5	mV/°C
hysteresis (Vh)	at +If to zero current			8	mV
primary over current	for maximum 50 ms, no damage			10*If	A
withstand voltage	between coil and each terminal for 1 minute		2,000		Vac
insulation resistance	between coil and each terminal at 500 Vdc		500		MΩ
operating temperature		-10		75	°C
storage temperature		-30		90	°C
safety approvals	UL 508				
flammability rating	UL94V-0				
RoHS	yes				

Notes: 4. Deducting the value of hysteresis and offset voltage, calculated by (V/Vo)/(|IfxI-1|)x100%.

## SOLDERABILITY

parameter	conditions/description	min	typ	max	units
hand soldering	for maximum 3 seconds		280		°C

## MECHANICAL

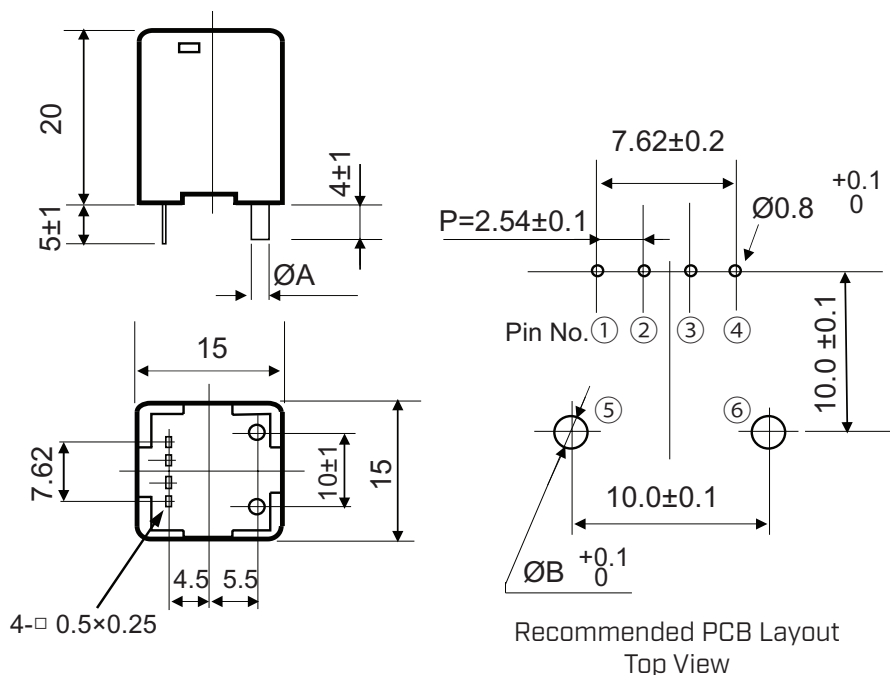
parameter	conditions/description	min	typ	max	units
dimensions	15 x 15 x 20				mm
case material	PBT				
terminals	phosphor bronze with tin plating				
weight			8		g

## MECHANICAL DRAWING

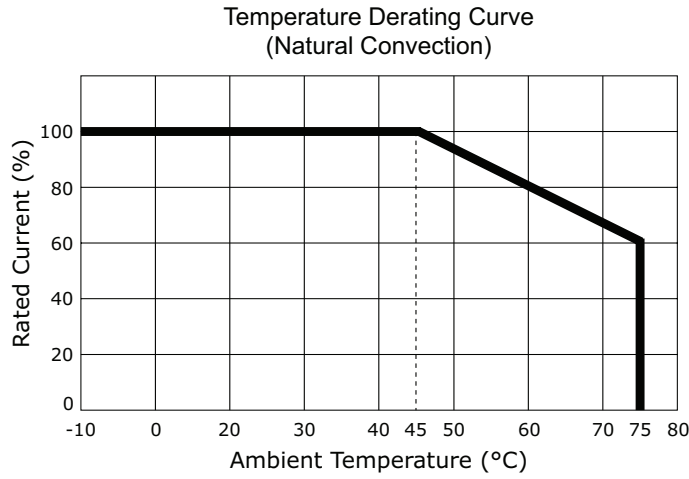
units: mm  
 tolerance: ±0.5 mm

PIN CONNECTIONS	
PIN	FUNCTION
1	+12 V
2	NC
3	Output [V]
4	0 V
5	+Input [A]
6	-Input [A]

MODEL NO.	ØA [mm]	ØB [mm]
CS0312B	0.6	1.2
CS0512B	0.9	1.5
CS1012B	1.1	1.7
CS1512B	1.4	2.0
CS2012B	1.7	2.3

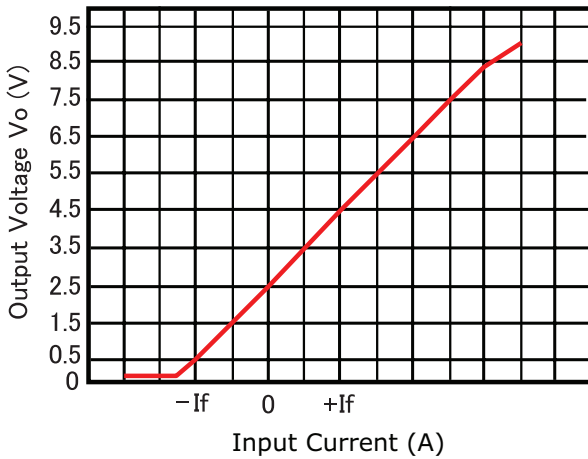


## DERATING CURVE

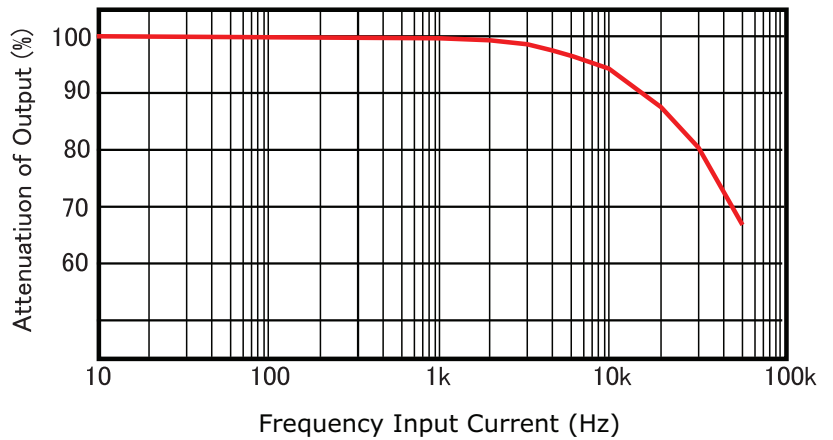


## PERFORMANCE CURVES

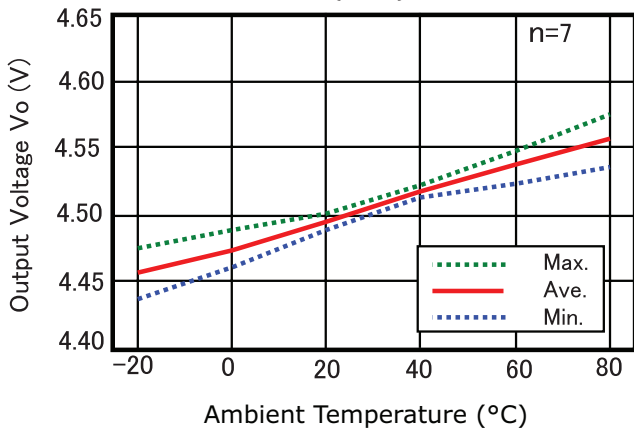
Output Voltage vs. Input Current



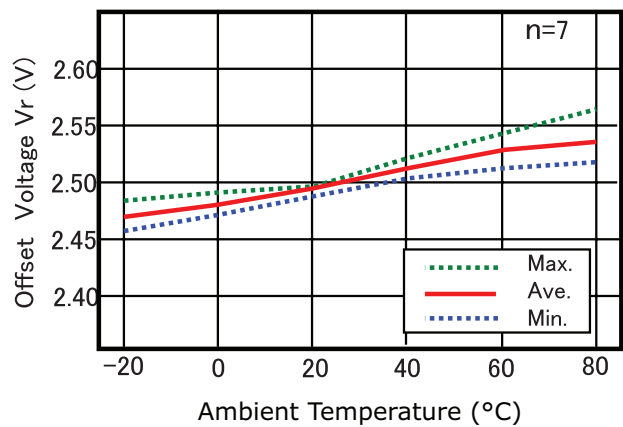
Input Current Frequency vs. Output Attenuation



Output Voltage vs. Ambient Temperature  
[at +If]



Offset Voltage vs. Ambient Temperature  
[at Zero Current]



## REVISION HISTORY

rev.	description	date
1.0	initial release	09/03/2019
1.01	brand update	02/21/2020
1.02	logo, datasheet style update	08/05/2022
1.03	CUI Devices rebranded to Same Sky	09/12/2024

The revision history provided is for informational purposes only and is believed to be accurate.



Same Sky offers a one (1) year limited warranty. Complete warranty information is listed on our website.

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