

**SERIES:** CSXX120B | **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> ]
CS03120B	±3	±6
CS05120B	±5	±10
CS10120B	±10	±20
CS15120B	±15	±30
CS20120B	±20	±40

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 and -12 V terminals, 1 and 2, 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	±3.96	±4.00	±4.04	V
zero current offset voltage (Vr)	after demagnetization	-0.03	0	+0.03	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			15	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. Deducing 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

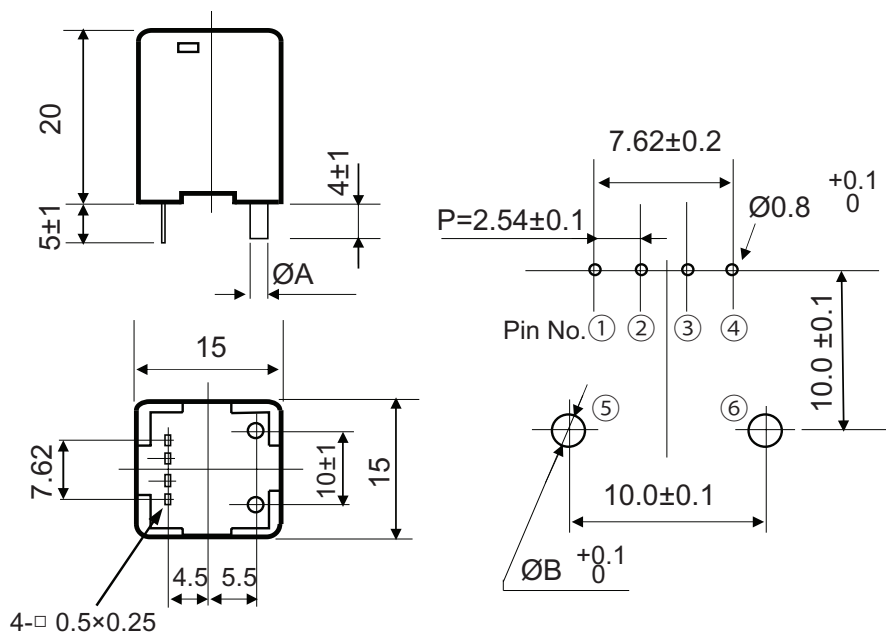
parameter	conditions/description	min	typ	max	units
dimensions	15 x 15 x 20				mm
case material	PBT				
terminals	phosphor bronze with tin plating				
weight			8		g

## MECHANICAL DRAWING

units: mm  
tolerance: ±0.5 mm

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

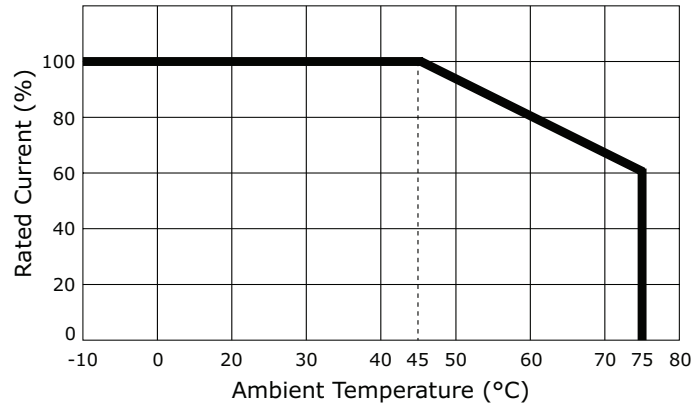
MODEL NO.	ØA [mm]	ØB [mm]
CS03120B	0.6	1.2
CS05120B	0.9	1.5
CS10120B	1.1	1.7
CS15120B	1.4	2.0
CS20120B	1.7	2.3



Recommended PCB Layout  
Top View

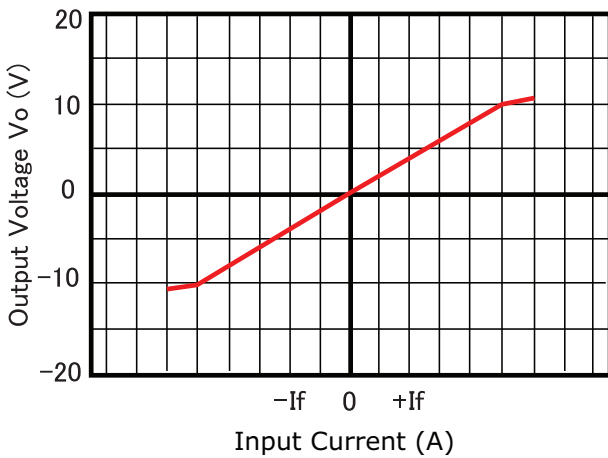
## DERATING CURVE

Temperature Derating Curve  
(Natural Convection)

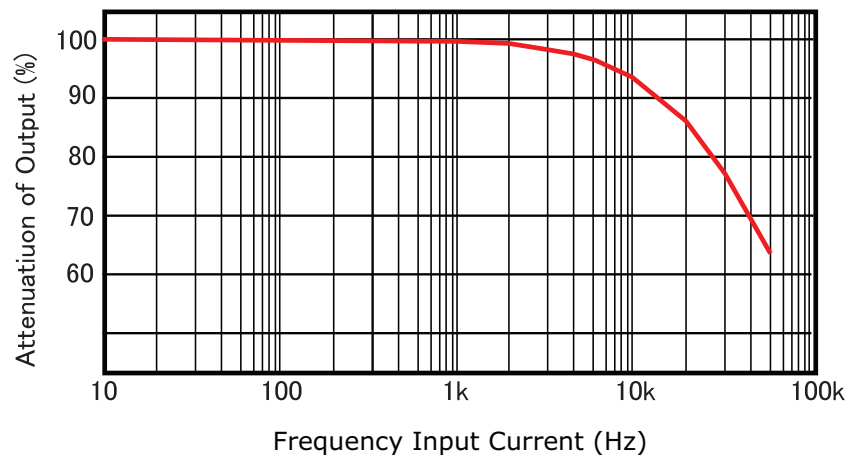


## PERFORMANCE CURVES

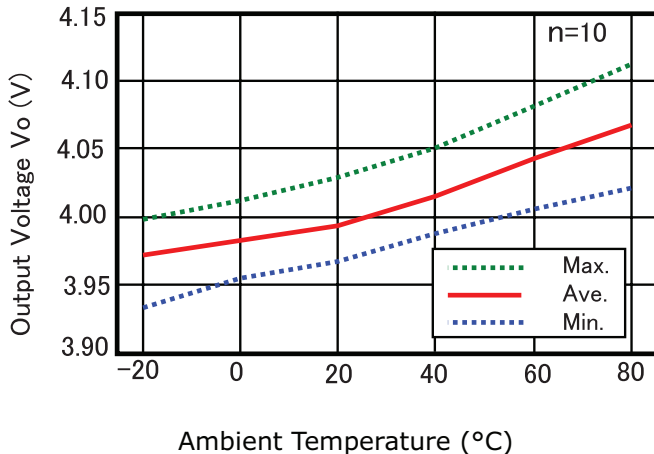
Output Voltage vs. Input Current



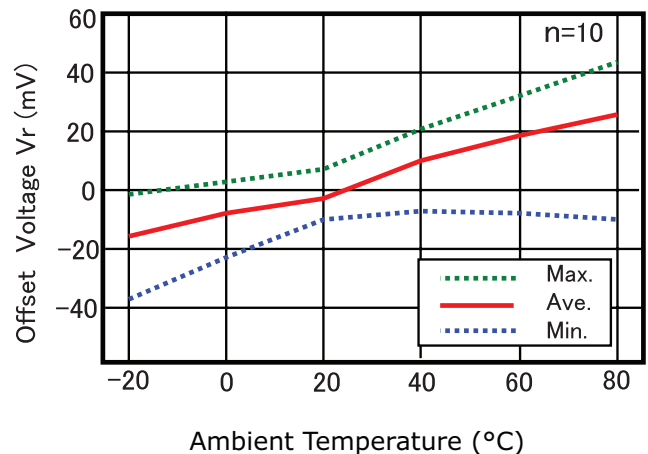
Input Current Frequency vs. Output Attenuation



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	02/19/2020
1.02	logo, datasheet style update	08/05/2022

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



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