

**SERIES:** CSXX05U | **DESCRIPTION:** CURRENT SENSOR

**FEATURES**

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


**MODEL**

MODEL	rated current (If)	linearity range <sup>1</sup> (Im)
	[A <sub>RMS</sub> ]	[A <sub>PEAK</sub> ]
CS0305U	+3	+6
CS0505U	+5	+10
CS1005U	+10	+20
CS1505U	+15	+30
CS2005U	+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 +5 V terminal 1 to avoid noise problems.

**SPECIFICATIONS**

parameter	conditions/description	min	typ	max	units
supply voltage (Vcc)		4.75	5.00	5.25	V
max current consumption (Ic)				25	mA
output voltage (Vo)	at +If	2.26	2.30	2.34	V
zero current offset voltage (Vr)	after demagnetization	0.27	0.30	0.33	V
output voltage linearity <sup>4</sup> (ΔK <sub>o</sub> )				±0.5	%
response (tr)	at di/dt = If/μs		7		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. Deducing the value of hysteresis and offset voltage, calculated by (V/V<sub>o</sub>)/(IfxI-1)x100%.

## SOLDERABILITY

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

## MECHANICAL

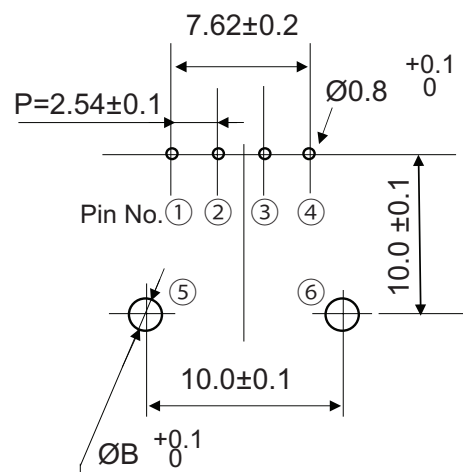
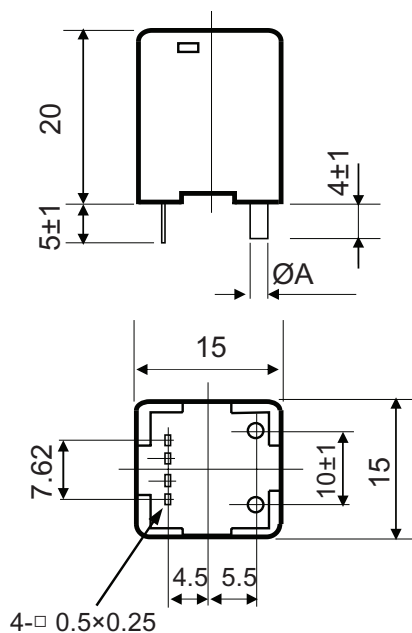
parameter	conditions/description	min	typ	max	units
dimensions	15 x 15 x 20				mm
case material	PBT				
terminals	phosphor bronze with tin plating				
weight			8		g

## MECHANICAL DRAWING

units: mm  
tolerance: ±0.5 mm

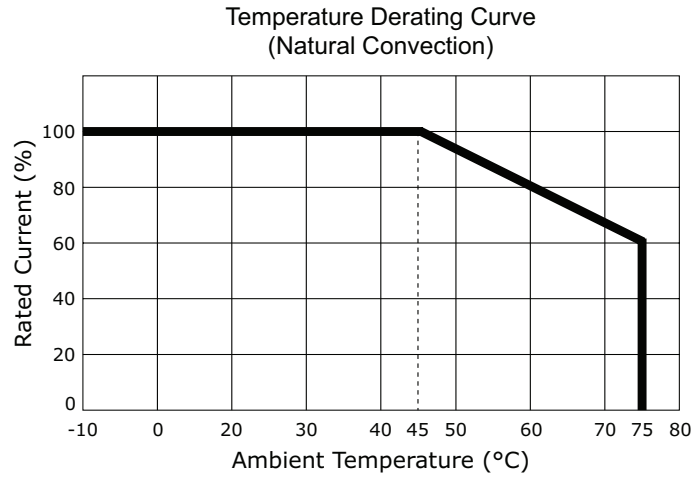
PIN CONNECTIONS	
PIN	FUNCTION
1	+5 V
2	NC
3	Output [V]
4	0 V
5	+Input [A]
6	-Input [A]

MODEL NO.	ØA [mm]	ØB [mm]
CS0305U	0.6	1.2
CS0505U	0.9	1.5
CS1005U	1.1	1.7
CS1505U	1.4	2.0
CS2005U	1.7	2.3



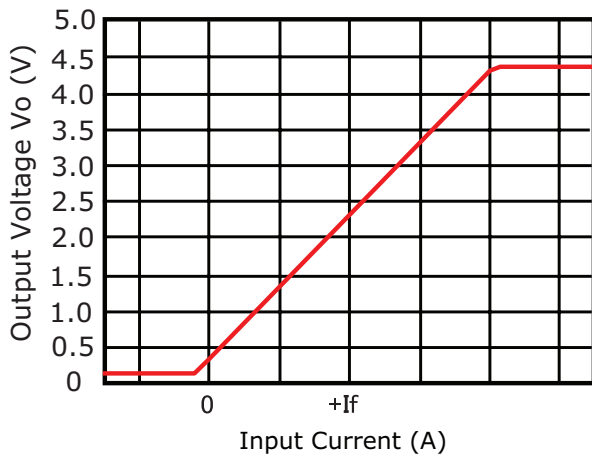
Recommended PCB Layout  
Top View

## DERATING CURVE

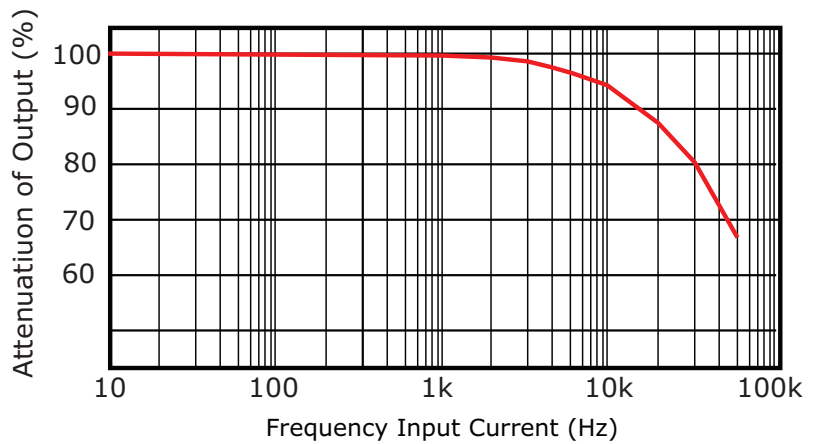


## PERFORMANCE CURVES

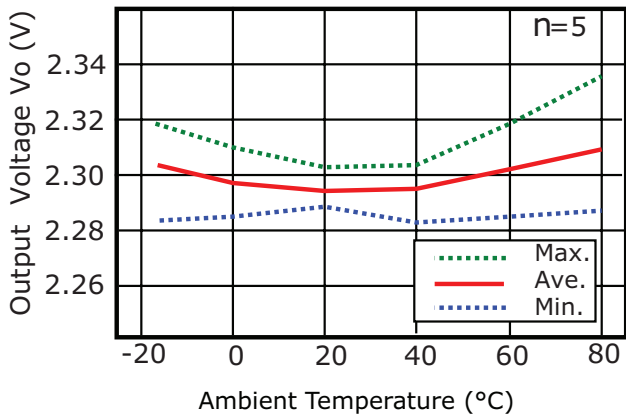
Output Voltage vs. Input Current



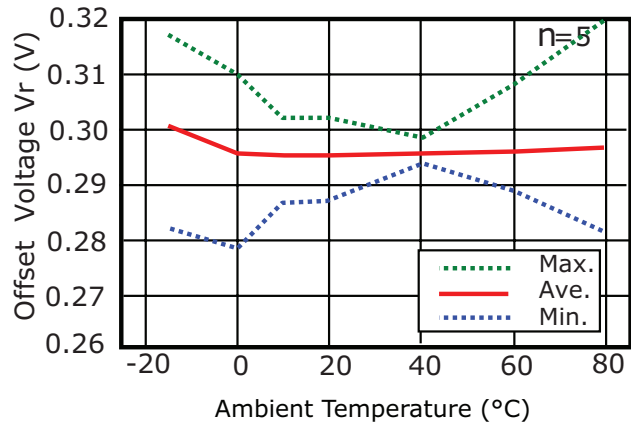
Input Current Frequency vs. Output Attenuation



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	02/19/2020
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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