



SERIES: CSXX12U | DESCRIPTION: CURRENT SENSOR

FEATURES

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



MODEL

	rated current [I_f] [A _{RMS}]	linearity range ¹ [I_m] [A _{PEAK}]
CS0312U	+3	+6
CS0512U	+5	+10
CS1012U	+10	+20
CS1512U	+15	+30
CS2012U	+20	+40

Notes: 1. I_m is the maximum peak current for which the output voltage specifications are guaranteed, however the I_f RMS rating must not be exceeded.
 2. All specifications measured at 25°C, $R_L=10\text{ k}\Omega$, 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 [V_{cc}]		11.4	12.0	12.6	V
max current consumption [I_c]				25	mA
output voltage [V_o]	at $+I_f$	4.96	5.00	5.04	V
zero current offset voltage [V_r]	after demagnetization	0.97	1.0	1.03	V
output voltage linearity ⁴ [ΔK_o]				± 0.5	%
response [t_r]	at $di/dt = I_f/\mu\text{s}$		3		μs
output voltage temperature characteristics				± 0.1	%/°C
zero current offset voltage characteristics				± 1.5	mV/°C
hysteresis [V_h]	at $+I_f$ to zero current			15	mV
primary over current	for maximum 50 ms, no damage			$10 \times I_f$	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		M Ω
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 $(V/V_o)/(I_f \times I - 1) \times 100\%$.

SOLDERABILITY

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

MECHANICAL

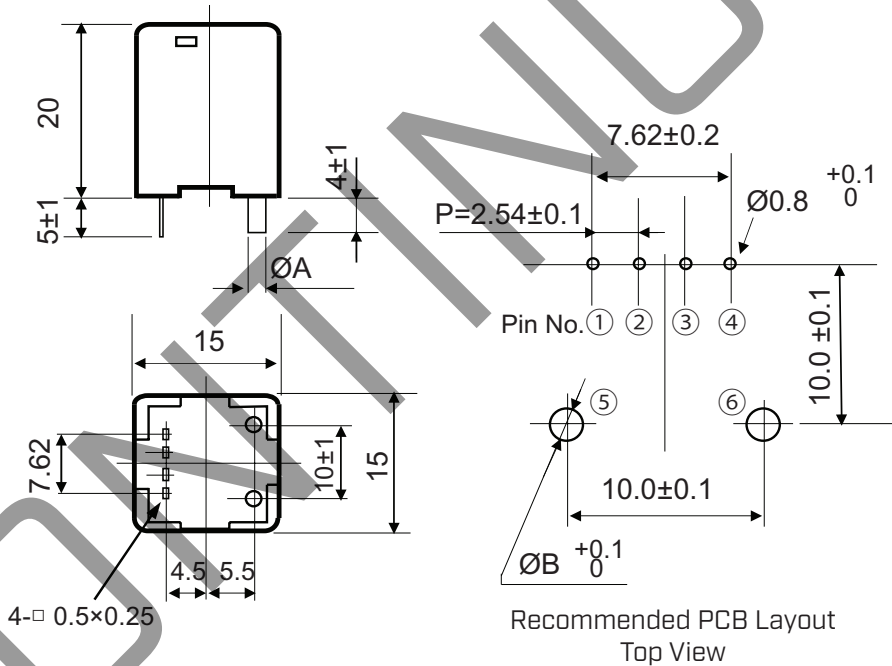
parameter	conditions/description	min	typ	max	units
dimensions	15 x 15 x 20				mm
case material	PBT				
terminals	phosphor bronze with tin plating				
weight			8		g

MECHANICAL DRAWING

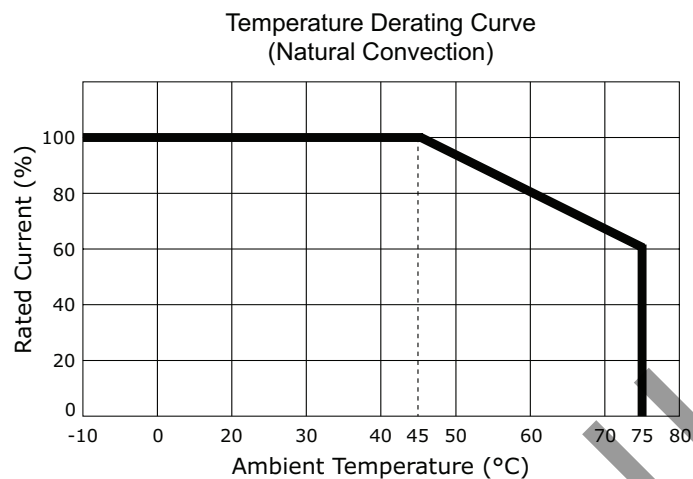
units: mm
tolerance: ±0.5 mm

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]
CS0312U	0.6	1.2
CS0512U	0.9	1.5
CS1012U	1.1	1.7
CS1512U	1.4	2.0
CS2012U	1.7	2.3

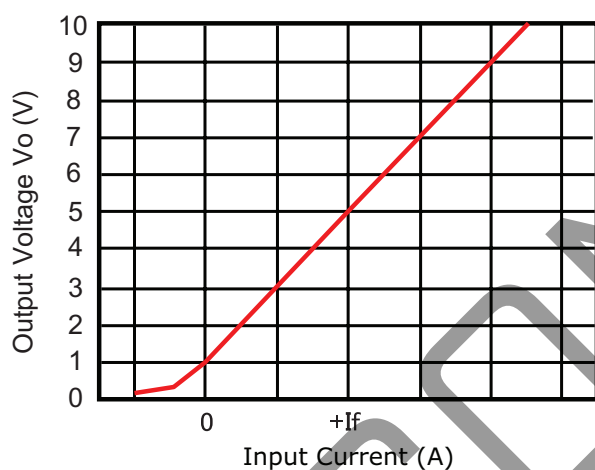


DERATING CURVE

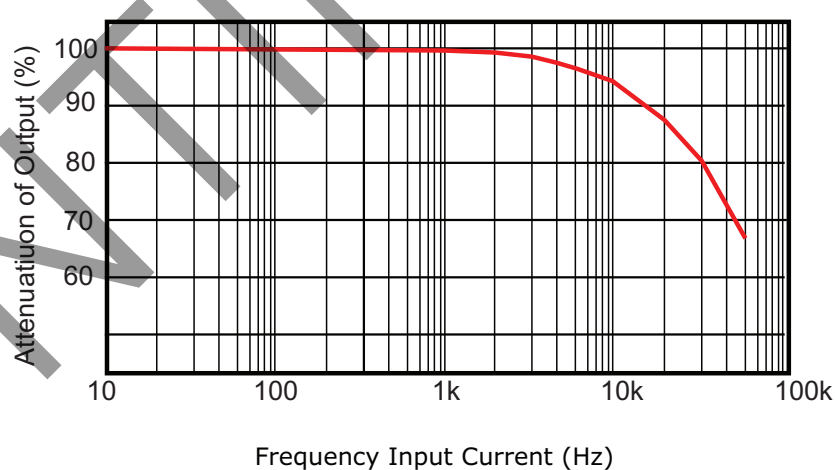
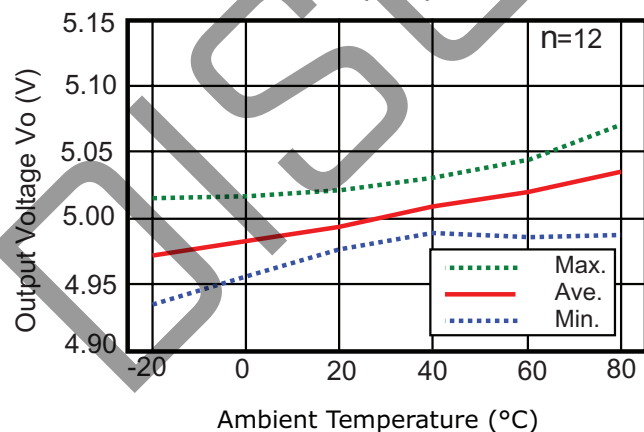
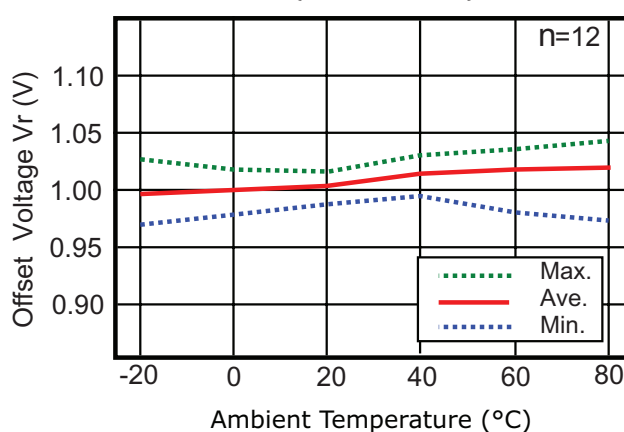


PERFORMANCE CURVES

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	02/19/2020
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.

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