

# ECSTA1V0703

## Automotive grade SMT current sense transformer



### Product features

- AEC-Q200 qualified
- EE4.6 SMT package (7.2 mm x 5.2 mm x 3.0 mm)
- Very low DC resistance
- Wide selection of turns ratios
- Sensed current – primary rated for 9 A
- Frequency range: 50 kHz to 1 MHz
- Moisture sensitivity level (MSL): 1

### Applications

- Motor drive
- On-board chargers
- DC/DC converters
- Wireless chargers
- Battery management systems (BMS)
- EV charging
- Feedback control
- Overload sensing

### Environmental compliance and general specifications

- Storage temperature (component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant



**Product specifications**

Part number <sup>3</sup>	Turns ratio sec :pri	Secondary inductance (mH) @ 100 kHz 0.1 V minimum	DCR sec ( $\Omega$ ) maximum	DCR pri (m $\Omega$ ) reference	Hi-pot pri to sec @ 2 mA 3 seconds 50 Hz	Sensed current <sup>1</sup> (A) maximum
ECSTA1V0703-1020-R	20:1	0.053	0.42	1.5	500 Vac	9
ECSTA1V0703-1050-R	50:1	0.333	2.76	1.5	500 Vac	9
ECSTA1V0703-1070-R	70:1	0.652	5.04	1.5	500 Vac	9
ECSTA1V0703-1100-R	100:1	1.33	10.68	1.5	500 Vac	9
ECSTA1V0703-1150-R	150:1	2.993	22.3	1.5	500 Vac	9

1. Primary current of 9 A causes less than 40°C temperature rise @ +2.5°C ambient. Higher current causes a greater temperature rise

2. Electrical specifications at +25 °C

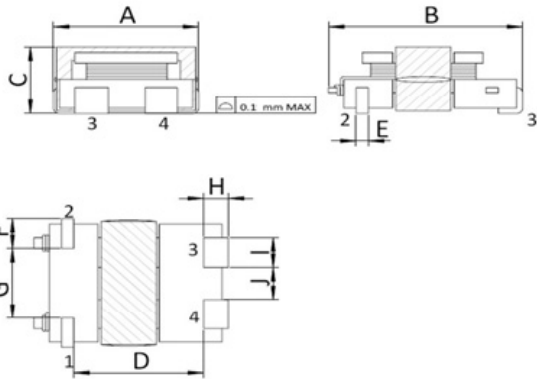
3. Part Number Definition: ECSTA1V0703-1xxx-R

ECSTA1V0703 = Product code and size

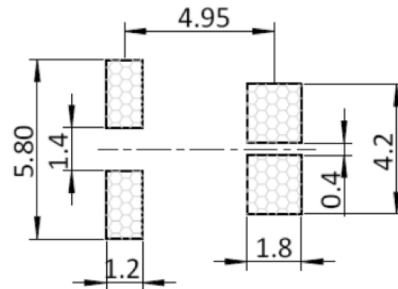
1xxx= Turns ratio sec:pri 1=pri, xxx=sec; 1020= 20:1

-R suffix = RoHS compliant

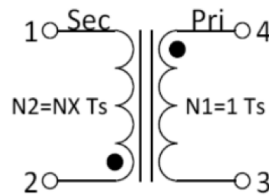
**Mechanical parameters, schematic, pad layout (mm)**



**Recommended PCB Layout**



**Schematic**



Dimension	Value
A	5.20 maximum
B	7.20 maximum
C	3.00 maximum
D	4.05
E	0.4
F	1.1
G	2.6
H	1.2
I	1.1
J	1.2

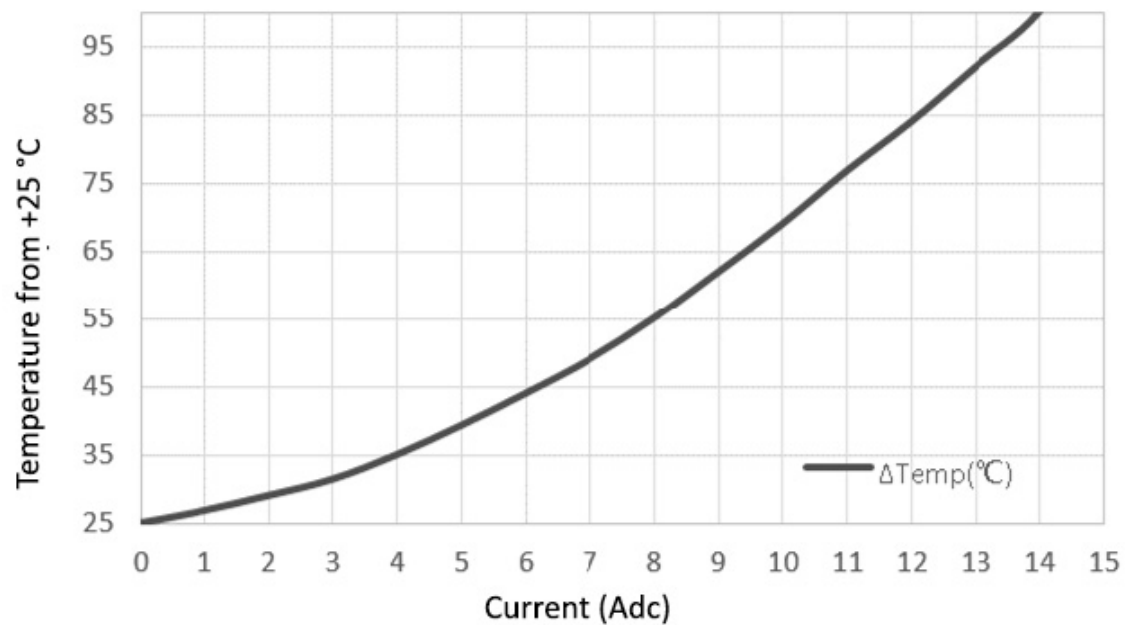
Part marking: White dot, Pin 2 indicator

All soldering surfaces to be coplanar within 0.1 millimeters

Tolerances are  $\pm 0.1$  millimeters unless stated otherwise

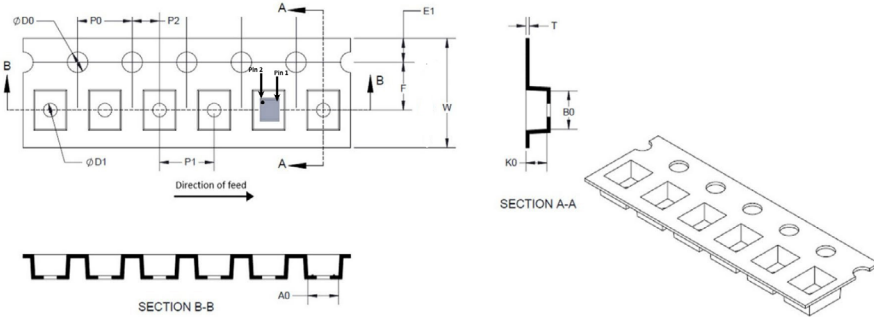
Traces or vias underneath the inductor is not recommended

Temperature rise vs current

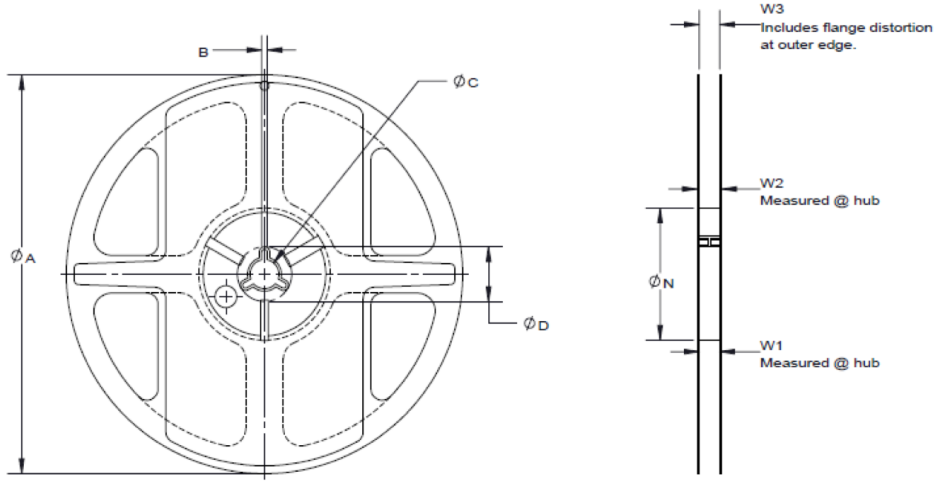


**Packaging information (mm)**

Supplied in tape and reel packaging, 13" diameter reel (EIA-481 compliant)  
2500 parts per reel



Dimension	Value
W	16.0 $\pm$ 0.3
P1	8.0 $\pm$ 0.1
E1	1.75 $\pm$ 0.1
F	7.5 $\pm$ 0.05
P2	2.0 $\pm$ 0.05
D0	1.5 +0.1/-0
D1	1.5 +0.1/-0
B0	7.2 $\pm$ 0.1
A0	5.2 $\pm$ 0.1
K0	2.9 $\pm$ 0.1
P0	4.0 $\pm$ 0.1
T	0.35 $\pm$ 0.05



Dimension	Value
A	330 $\pm$ 3.0
B	2.6 $\pm$ 0.3
N	100 $\pm$ 1.0
C	13+0.5/-0.2
D	21.5 $\pm$ 0.5
W1	16.4 +2.0/-0.0
W2	22.4 max
W3	na