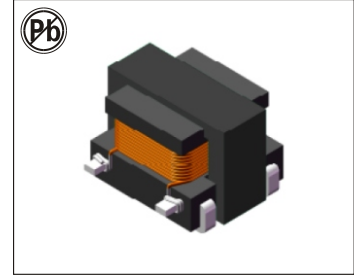


Current Sense Transformer

ACSTE4.4 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Very small package
- 500Vrms, one minute isolation (hipot) between windings
- Sensed Current – primary rated for 7 Amps

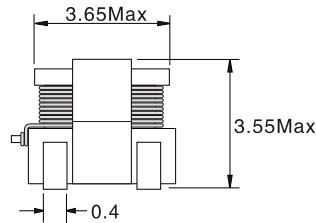
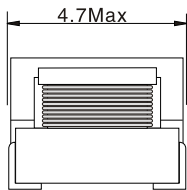
APPLICATIONS:

- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/Shut down detection

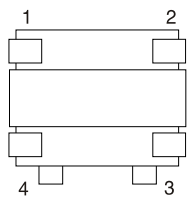
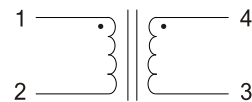
ELECTRICAL SPECIFICATIONS:

Part No.	Turns ratio	Ls (uH, Min) 100KHz, 0.1V	Rp (Ω, Max)	Rs (Ω, Max)	Sensed Current (A)
ACSTE4.4-200	1:20	33	0.003	0.35	7
ACSTE4.4-300	1:30	74	0.003	0.8	7
ACSTE4.4-400	1:40	132	0.003	1.6	7
ACSTE4.4-500	1:50	205	0.003	2.5	7
ACSTE4.4-600	1:60	295	0.003	3.6	7
ACSTE4.4-700	1:70	400	0.003	4.6	7
ACSTE4.4-101	1:100	820	0.003	9.5	7
ACSTE4.4-121	1:125	1280	0.003	13.0	7
ACSTE4.4-151	1:150	1800	0.003	21.0	7

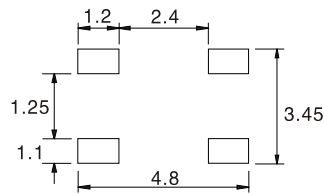
MECHANICAL: Unit:mm



Schematic



Bottom view



Recommended PCB layout

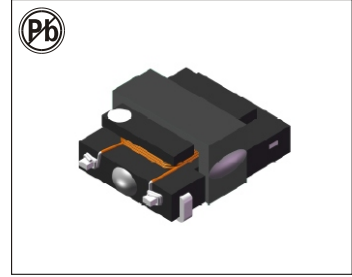
NOTES

- 1.Primary current of 7 A causes less than 35°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise
- 2.Operating temperature : -40°C to 125°C
- 3.Storage temperature Component: -40°C to +125°C
- 4.Inductance measured between secondary pins at 100kHz, 0.1 Vrms, 0 Adc
- 5.Measuring Frequency: @50KHz to 1MHz
- 6.Electrical specifications at 25°C
- 7.Inductance measured at 0Adc on HP 4284A LCR Meter or equivalent
- 8.DCR measured on Chroma 16502 micro-ohmmeter or equivalent

Specifications subject to change without notice

Current Sense Transformer

ACSTE4.6 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Very small package
- 500Vrms,one minute isolation(hipot) between windings
- Sensed Current – primary rated for 20 Amps

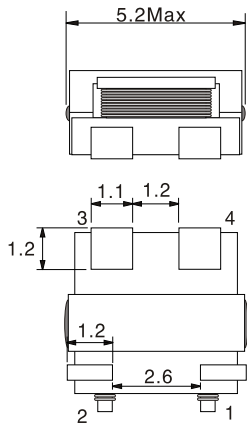
APPLICATIONS:

- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/Shut down detection

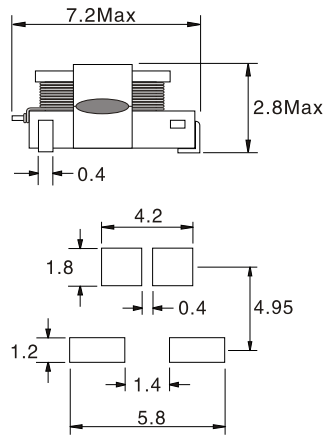
ELECTRICAL SPECIFICATIONS:

Part No.	Turns ratio	Ls (uH, Min) 100KHz,0.1V	Rp (Ω,Max)	Rs (Ω,Max)	Sensed Current (A)
ACSTE4.6-200	1:20	53	0.0015	0.42	9
ACSTE4.6-500	1:50	333	0.0015	2.76	9
ACSTE4.6-700	1:70	652	0.0015	5.04	9
ACSTE4.6-101	1:100	1330	0.0015	10.68	9
ACSTE4.6-151	1:150	2993	0.0015	22.30	9

MECHANICAL: Unit:mm

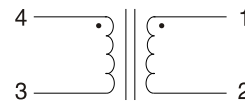


Bottom view



Recommended PCB layout

Schematic



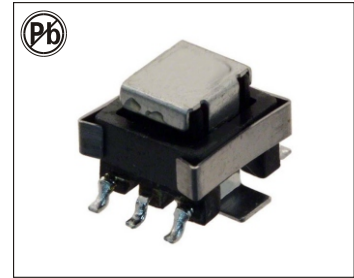
NOTES

- 1.Primary current of 9 A causes less than 35°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise
- 2.Operating temperature : -40°C to 125°C
- 3.Storage temperature Component: -40°C to +125°C
- 4.Inductance measured between secondary pins at 100kHz, 0.1 Vrms, 0 Adc
- 5.Measuring Frequency: @50KHz to 1MHz
- 6.Electrical specifications at 25°C
- 7.Inductance measured at 0Adc on HP 4284A LCR Meter or equivalent
- 8.DCR measured on Chroma 16502 micro-ohmmeter or equivalent

Specifications subject to change without notice

Current Sense Transformer

ACSTE5.0 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Small package
- Other pinning on request

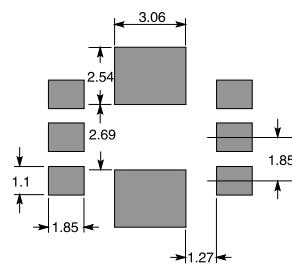
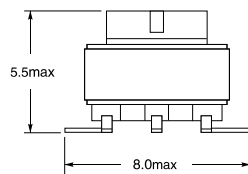
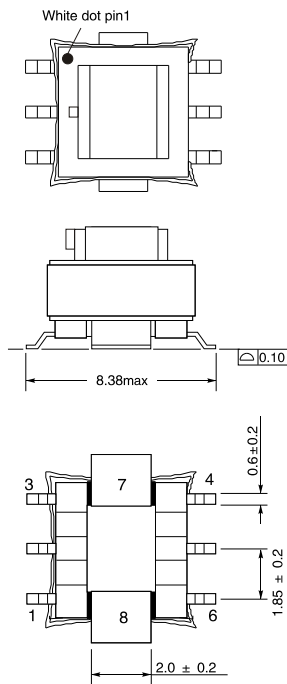
APPLICATIONS:

- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/Shut down detection

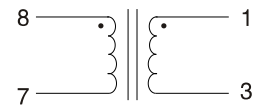
ELECTRICAL SPECIFICATIONS:

Part No.	Turns ratio	Ls (μ H, Min) 100KHz, 0.1V	Rp (Ω , Max)	Rs (Ω , Max)	Sensed Current (A)
ACSTE5.0-200	1:20	80	0.0007	0.4	10
ACSTE5.0-300	1:30	180	0.0007	0.87	10
ACSTE5.0-400	1:40	320	0.0007	1.14	10
ACSTE5.0-500	1:50	500	0.0007	1.85	10
ACSTE5.0-600	1:60	730	0.0007	2.3	10
ACSTE5.0-700	1:70	980	0.0007	4.75	10
ACSTE5.0-101	1:100	2000	0.0007	5.5	10
ACSTE5.0-121	1:125	3000	0.0007	11.5	10

MECHANICAL: Unit:mm



Schematic



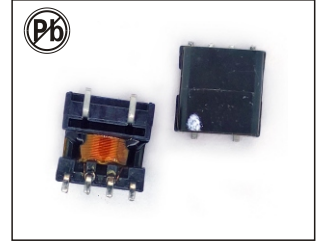
NOTES

1. Operating temperature : -40°C to 125°C
2. Storage temperature Component: -40°C to $+125^{\circ}\text{C}$
3. Inductance measured between secondary pins at 100kHz, 0.1 Vrms, 0 Adc
4. Electrical specifications at 25°C
5. Inductance measured at 0Adc on HP 4284A LCR Meter or equivalent
6. DCR measured on Chroma 16502 micro-ohmmeter or equivalent

Specifications subject to change without notice

SMT CURRENT SENSE TRANSFORMERS

ACSTEP7 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Small SMD package
- RoHS compatible
- Insulation distances in compliance with IEC 60664

APPLCATIONS:

- Switch-mode power supplies
- Feedback control
- Overload sensing
- Load drop/shut-down detection

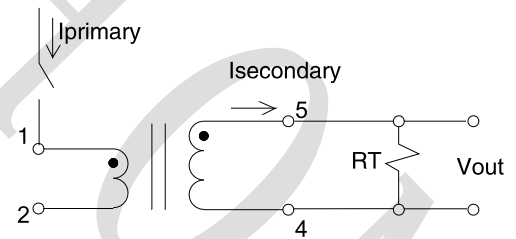
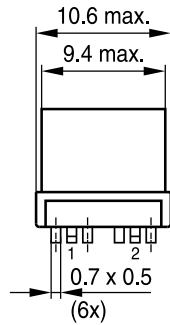
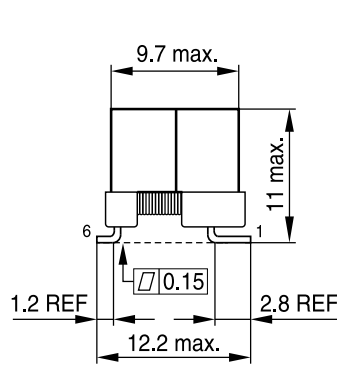
ELECTRICAL CHARACTERISTICS:

Part Number	Turns	Inductance (mH) Min	Voltage-time product +120°C (V.us) (1)	Cp (pF)	R(1-2) (mΩ) Max	R(4-5) (Ω) Max	Rt ⁽²⁾ (Ω) Typ.
ACSTEP7-50	50	1.7	116	4	1.9	2.1	2.5
ACSTEP7-70	70	3.0	163	4	1.9	2.9	3.5
ACSTEP7-100	100	7.0	233	4	1.9	5.0	5.0
ACSTEP7-125	125	11.0	291	4	1.9	5.3	6.0

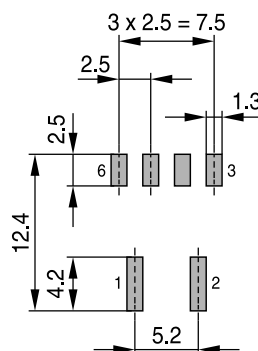
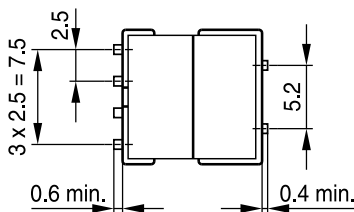
Notes:

- (1)The maximum volt-second rating limits the peak flux density to 220 mT when used in a unipolar drive application.For bipolar drive applications, a maximum volt-sec of two times is acceptable.
- (2)Burden Resistor value is calculated by taking Vout as 1 V reference and with maximum input current (20 A)flowing through the primary winding of the current sense transformer

PHYSICAL CHARACTERISTICS & WINDING



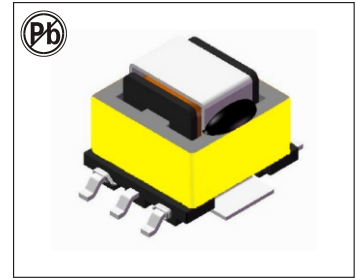
Recommended PCB layout (Top view)



- Typical frequency range: 50~250KHz
- Inductance test frequency: 20KHz,0.01V
- High voltage test: 2400VAC,50Hz,1s (Coil to Coil)
- The max primary current of 20A causes approx +40°C temperature rise
- Couple capacitance measured at 10kHz, 1V, +25°C
- Operating temperature range -40°C to +150°C

Current Sense Transformer

ACSTE8.3 SERIES



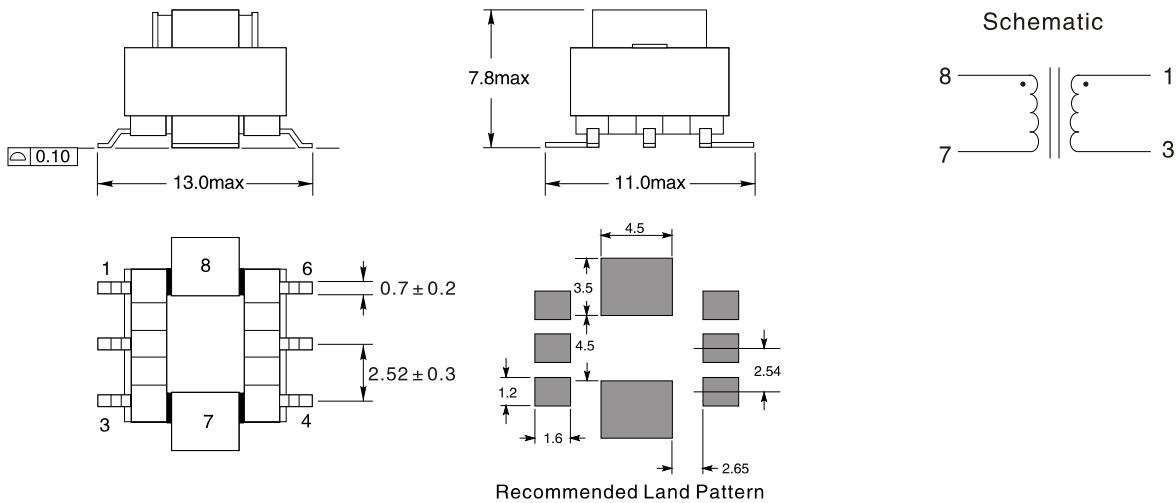
APPLICATIONS:

- Power supply for VTRs
- Small surface mount current sensors
- Sensed current up to 30A; Frequency range up to 1MHz
- Very low primary DC resistance
- 1.5KV AC/3mA / 1S isolation (hipot) between windings

ELECTRICAL SPECIFICATIONS:

Part No.	Turns ratio	Ls (mH, Min) 100KHz, 0.1V	Rp (Ω, Max)	Rs (Ω, Max)	Sensed Current (A)
ACSTE8.3-200	1:20	0.22	0.0039	0.21	30
ACSTE8.3-300	1:30	0.5	0.0039	0.32	30
ACSTE8.3-400	1:40	0.88	0.0039	0.50	30
ACSTE8.3-500	1:50	1.4	0.0039	0.65	30
ACSTE8.3-600	1:60	2.0	0.0039	0.81	30
ACSTE8.3-700	1:70	2.7	0.0039	1.0	30
ACSTE8.3-800	1:80	3.5	0.0039	1.3	30
ACSTE8.3-101	1:100	5.6	0.0039	2.0	30
ACSTE8.3-121	1:125	8.7	0.0039	5.2	30
ACSTE8.3-151	1:150	12.6	0.0039	6.5	30
ACSTE8.3-201	1:200	22.0	0.0039	8.0	30

MECHANICAL: Unit:mm



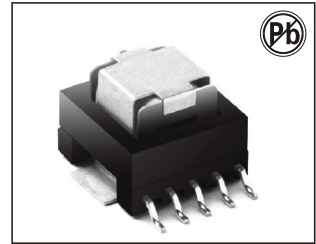
NOTES

- 1.High Current – primary rated for 30 Amps
- 2.Operating temperature : -40°C to 125°C
- 3.Storage temperature Component: -40°C to +125°C
- 4.Inductance measured between secondary pins at 100kHz, 0.1 Vrms, 0 Adc
- 5.Operating Frequency Range up to 100KHz
- 6.Electrical specifications at 25°C
- 7.Inductance measured at 0Adc on HP 4284A LCR Meter or equivalent
- 8.DCR measured on Chroma 16502 micro-ohmmeter or equivalent

Specifications subject to change without notice

SMT CURRENT SENSE TRANSFORMERS

ACSTE12 SERIES



FEATURES:

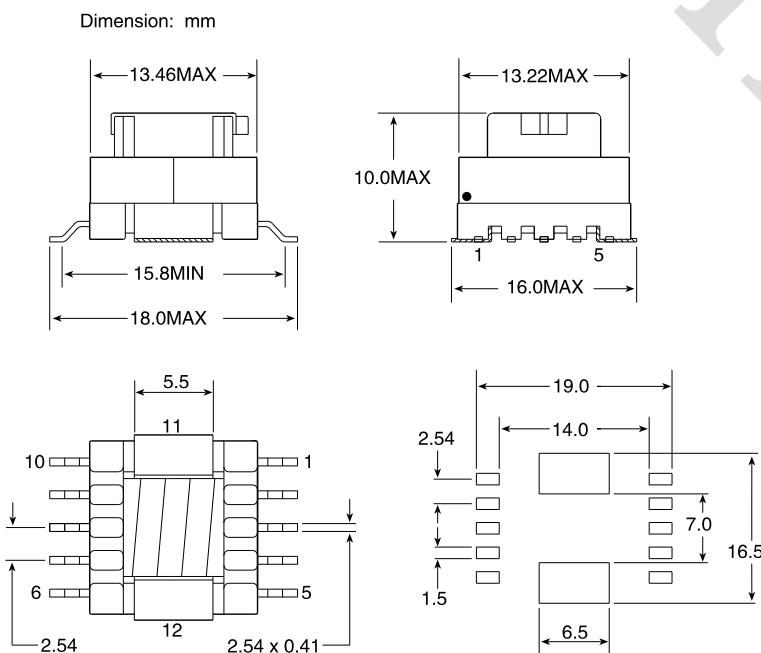
- Height: 10mm Max
- Footprint: 19.9mm X 15.0mm Max
- Frequency range: 50KHz to 500KHz
- Current rating: up to 40A
- Operating temperagure: -40°C to +130°C

ELECTRICAL CHARACTERISTICS:

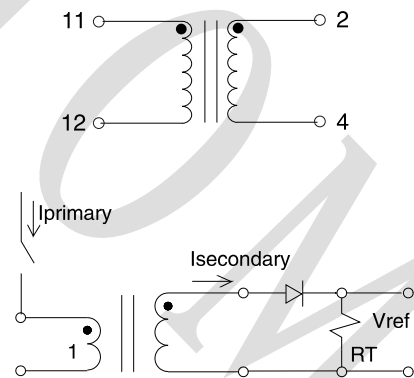
Part Number	Turns ratio	Sec. Inductance (mH) 10KHz,0.1V	DCR (mΩ)Max		Hi-Pot (Vrms)
			Pri	Sec	
ACSTE12-50	1:50	1.4 min.	0.42	700	500
ACSTE12-100	1:100	5.6 min.	0.42	1400	500
ACSTE12-200	1:200	22.4 min.	0.42	2900	500

- 1.The temperature of component (ambient temperature plus temper-ature rise) must be within the specified operating temperature range.
- 2.The maximum current rating is based upon temperature rise of the component and represents the DC current which will cause a typical temperature rise of 40°C with no airflow when both one turn windings connected in parallel.

PHYSICAL CHARACTERISTICS & WINDING



Unless otherwise specified, all tolerances are ± 0.25mm

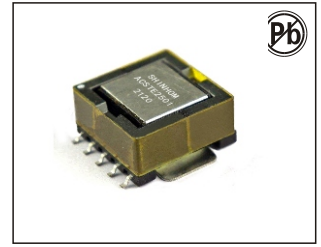


APPLICATION CIRCUIT

Weight..... 4.7g
 Tray..... 100/tray
 Tape&Reel..... 300/reel

SMT CURRENT SENSE TRANSFORMERS

ACSTE25 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Very small package
- 1500Vrms isolation voltage between windings
- Sensed Current – primary rated for 50 Amps

APPLICATIONS:

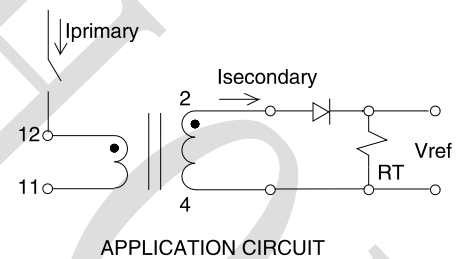
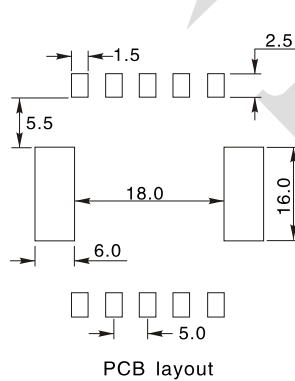
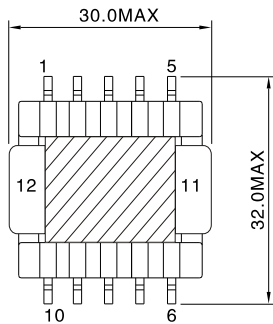
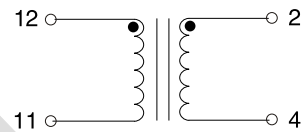
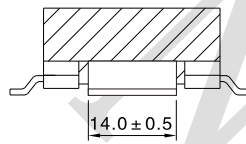
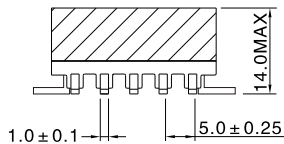
- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/Shut down detection

ELECTRICAL CHARACTERISTICS: @25°C

Part Number	Turns ratio	Sec. Inductance (mH) 100KHz,0.1V	DCR (mΩ)Max		Rated input current (A) Max
			Pri	Sec	
ACSTE2501	1:100	15.0 min.	0.2	1200	50
ACSTE2502	1:150	34.0 min.	0.2	1600	50
ACSTE2503	1:200	60.0 min.	0.2	2000	50

PHYSICAL CHARACTERISTICS & WINDING

Dimension: mm



APPLICATION CIRCUIT

NOTES

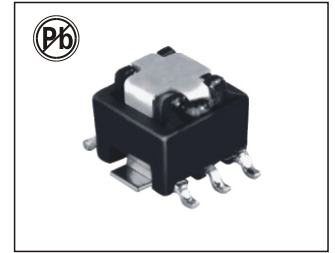
- 1.Primary current of 50 A causes 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise
- 2.Operating temperature : -55°C to 125°C
- 3.Storage temperature Component: -40°C to +105°C
- 4.Tape and reel packaging: -40°C to +80°C
- 5.Moisture sensitivity level(MSL) 1 (Unlimited floor life at <30deg /85% relative humidity)
- 6.Inductance measured between secondary pins at 100kHz, 0.1 Vrms, 0 Adc
- 7.Frequency range: 50KHz to 500KHz
- 8.Inductance measured at 0Adc on HP 4284A LCR Meter or equivalent
- 9.DCR measured on Chroma 16502 micro-ohmmeter or equivalent

Specifications subject to change without notice

SHINHOM ELECTRONICS ENTERPRISE CO.,LTD. No.8,YanTa Northern Road Zip:710054 Tel:0086-29-87851838 Fax:0086-29-87851840

SMD CURRENT SENSER TRANSFORMERS

ACSTE50 Series



FEATURES:

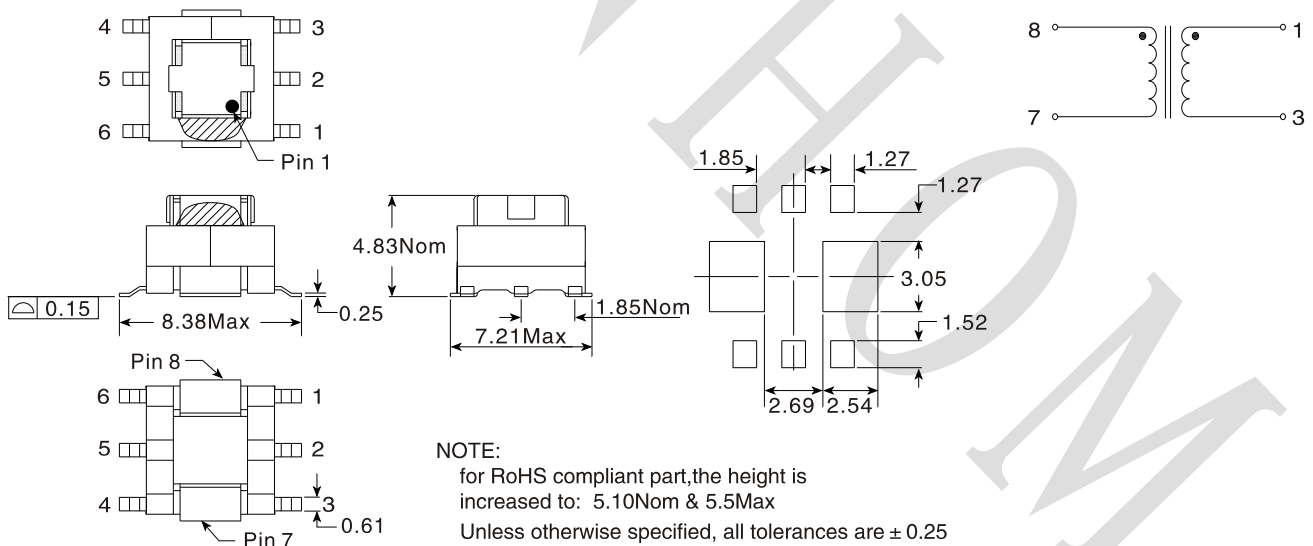
- Working Frequency range:50KHz~1MHz
- Testing Frequency: 10 KHz 0.1Vrms
- Hipot:2000VAC,Primary to Secondary
- Maximum Sensing Current: 20A
- All secondary measurements are in pins 1-3
- Soldering methods: Wave, Reflow

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C

Part No.	Turns Ratio	Current Rating (A)	Secondary inductance (mH)Min	DCR(mΩ Max)		Hi-Pot (Vrms)
				Primary (8-7)	Secondary (1-3)	
ACSTE5020	1:20	20	0.08	0.75	550	500
ACSTE5030	1:30	20	0.18	0.75	870	500
ACSTE5040	1:40	20	0.32	0.75	1140	500
ACSTE5050	1:50	20	0.50	0.75	1500	500
ACSTE5060	1:60	20	0.72	0.75	2250	500
ACSTE5070	1:70	20	0.98	0.75	4750	500
ACSTE5100	1:100	20	2.00	0.75	5500	500
ACSTE5125	1:125	20	3.00	0.75	6500	500

MECHANICAL:

SCHEMATIC:



NOTES:

1. The temperature of component (ambient temperature plus temperature rise) must be within the specified operating temperature range.
2. The maximum current rating is based upon temperature rise of the component and represents the DC current which will cause a typical temperature rise of 40°C with no airflow when both one turn windings connected in parallel.
3. To calculate value of terminating resistor (Rt) use the following formula: $R_t (\Omega) = V_{ref} * N / (I_{peak_primary})$
4. The peak flux density of the device must remain below 2000 Gauss. To calculate the peak flux density for uni-polar current use following formula: $B_{pk} = 37.59 * V_{ref} * (Duty_Cycle_Max) * 105 / (N * Freq_kHz)$ * for bi-polar current applications divide Bpk (as calculated above) by 2

Current Sense Transformer

CT02 SERIES



FEATURES:

- Smallest Footprint
- Hi-Pot tested at 1500VAC
- Current ratings to 18A
- Patent pending

APPLICATION:

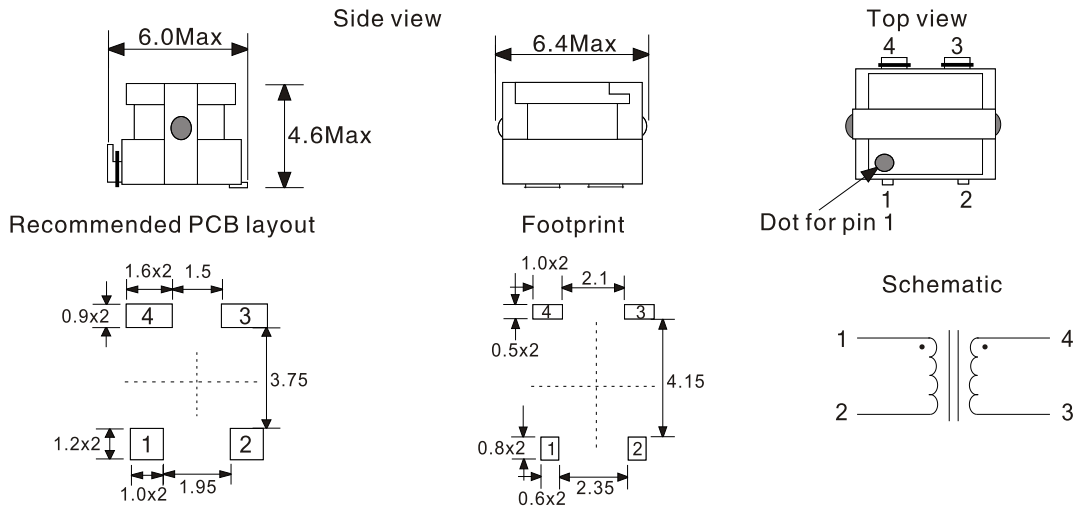
- DC/DC Converters
- DC/DC Converters
- POL Converters

ELECTRICAL SPECIFICATIONS :

Part No.	Turns ratio	E-T Product (V-us)	Ls (mH, Min)	Rs (Ω, Max)	Current rating (A)	Hi-Pot (Vac)
CT02-050	1:50	4.0	0.44	1.25	15.0	1500
CT02-100	1:100	8.0	1.8	4.8	18.0	1500
CT02-150	1:150	12.0	4.0	15.0	18.0	1500
CT02-200	1:200	16.0	7.1	25.0	18.0	1500
CT02-250	1:250	20.0	11.1	37.2	18.0	1500

Note: 1. K= ± 10%, M= ± 20%

MECHANICAL: Unit:mm



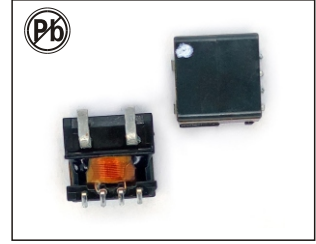
NOTES

1. Tested at 10kHz, 0.1Vrms.
2. Electrical specifications at 25°C
3. Operating range: -40 °C to +130 °C. This is a combination of ambient plus temperature rise.
4. Meets UL94V-0.
5. DC current through primary, plus turns-ratio-divided DC current through secondary winding, to cause a 40°C temperature rise at 25°C ambient.
6. All products are RoHS-compliant

Specifications subject to change without notice

SMT CURRENT SENSE TRANSFORMERS

ACSTEP11 SERIES



FEATURES:

- Very low DC resistance
- Different turns ratios
- Small SMD package
- RoHS compatible
- Qualified to AEC-Q200
- Insulation distances in compliance with IEC61558-2-16

APPLICATIONS:

- Switch-mode power supplies
- Feedback control
- Overload sensing
- Load drop/shut-down detection
- Switching current detection in on-board DC/DC converter and chargers

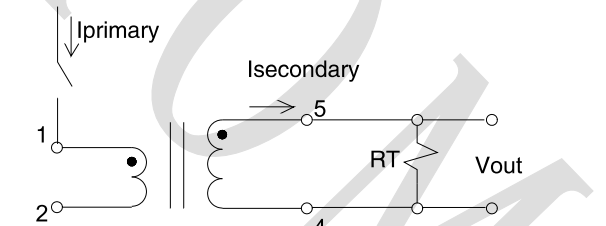
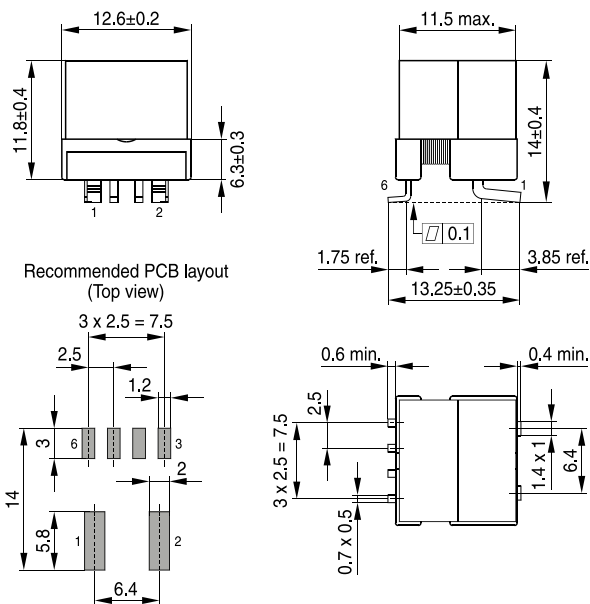
ELECTRICAL CHARACTERISTICS:

Part Number	Turns ratio	Inductance (mH) 20KHz,0.01V	Voltage-time product +120°C (V.us) (1)	Cp (pF) 10KHz,1V	R(1-2) (mΩ) Max	R(4-5) (Ω) Max	Rt (2) (Ω) Typ.
ACSTEP11-50	1:50	1.2 Min	117	4	0.5	1.5	1.6
ACSTEP11-70	1:70	2.8 Min	164	4	0.5	2.1	2.3
ACSTEP11-100	1:100	6.5 Min	235	4	0.5	3.1	3.3
ACSTEP11-125	1:125	7.5 Min	294	4	0.5	4.1	4.1
ACSTEP11-180	1:180	18.0 Min	423	4	0.5	7.4	6.0
Small air gap ensures tighter tolerance of inductance for better sensing accuracy							
ACSTEP11-100A	1:100	2.5 ± 12%	235	4	0.5	3.1	3.3

Notes:

- (1)The maximum volt-second rating limits the peak flux density to 220 mT when used in an unipolar drive application. For bipolar drive applications, a maximum volt-sec of two times is acceptable.
- (2)Burden Resistor value is calculated by taking Vout as 1 V reference and with maximum input current flowing through the input (30 A).

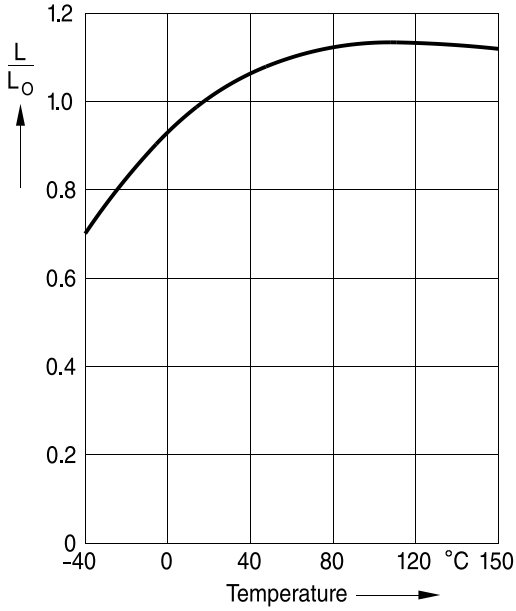
PHYSICAL CHARACTERISTICS & WINDING



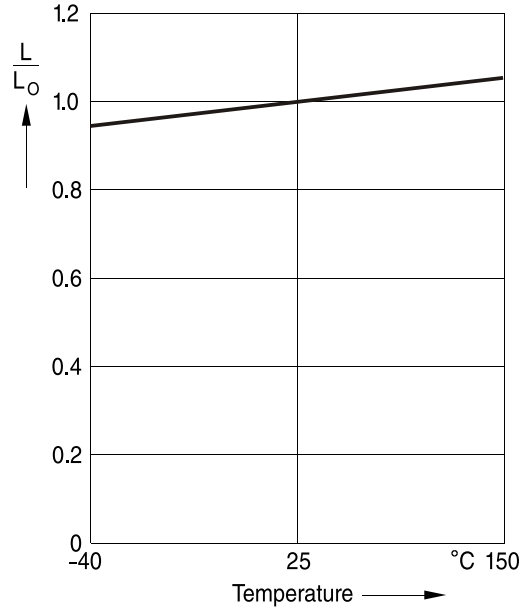
- Typical frequency range: 50~400KHz
- Inductance test frequency: 20KHz,0.01V
- High voltage test: 2500VAC,50Hz,1s (Pri to Sec, Core)
- The primary current of 30A causes approx +40°C temperature rise
- Couple capacitance measured at 10kHz, 1V, +25°C
- Operating temperature range -40°C to +150°C

INDUCTANCE L AS A FUNCTION OF TEMPERATURE TYPICAL CURVES

Parts without air gap according N(4-5) L/Lo vs. Temperature



Parts with air gap according N(4-5) L/Lo vs. Temperature



TAPING AND PACKING

