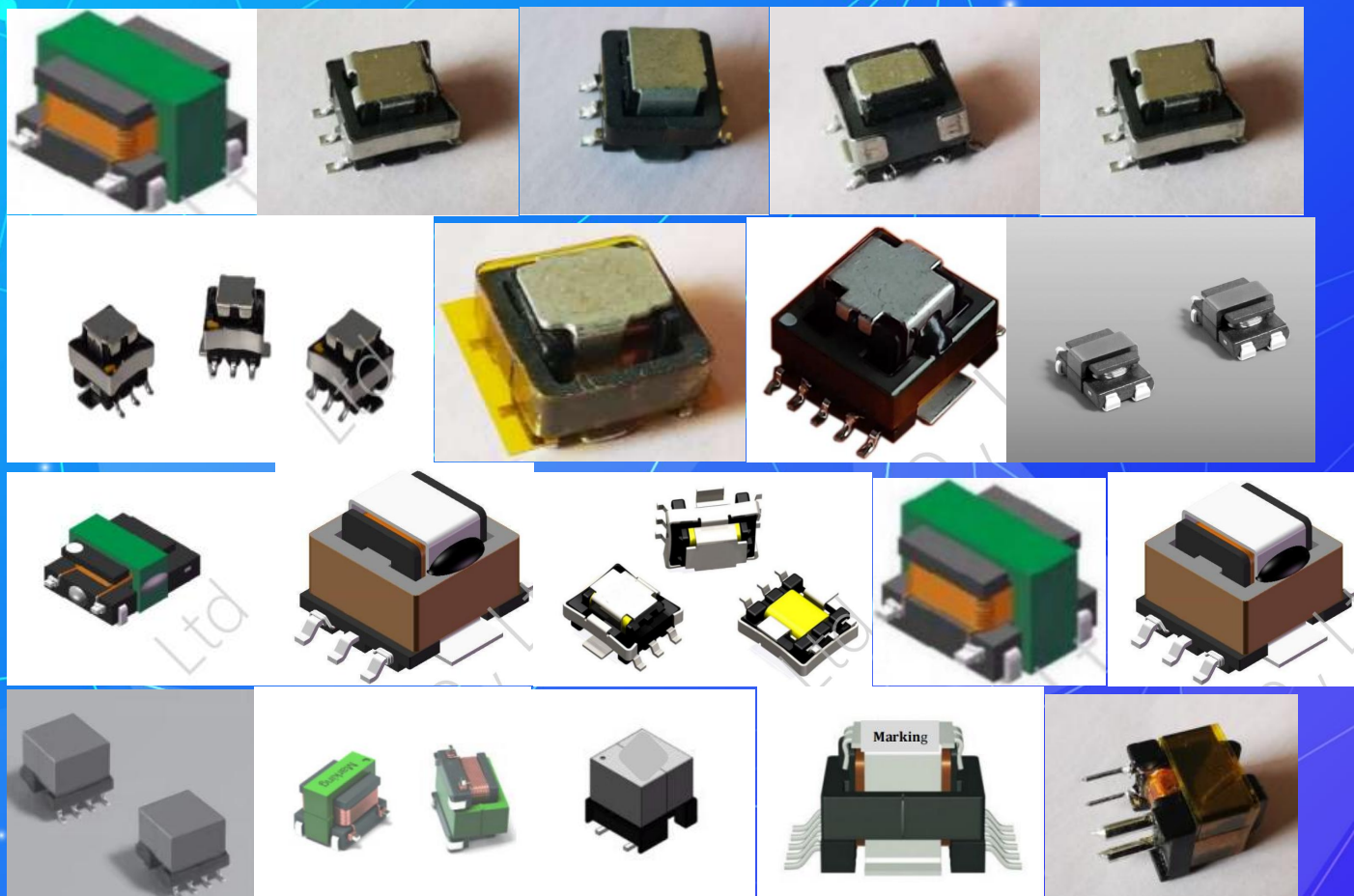




2023

Current Sense Transformers

电流互感器



权智电子科技（珠海）有限公司
Power widom Electronic uhai) (Zhuhai) Co. Ltd.
Mobile:13823059328
E-mail:johnzheng00@163.com



INDEX

目录

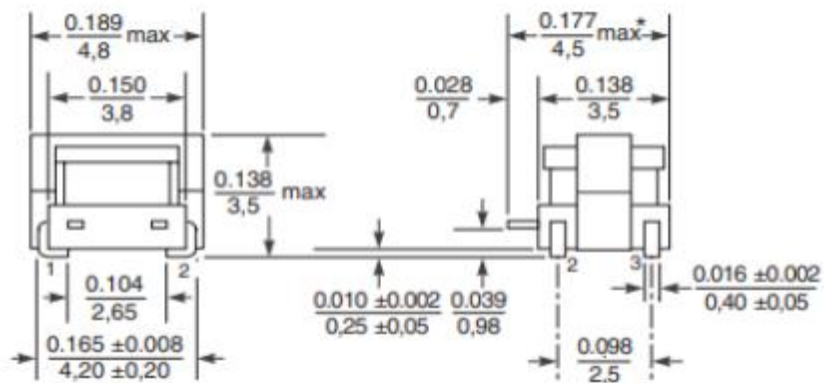
目录	1
PW-EE4.2 SERIES	2-3
PW-EE4.4 SERIES	4-5.
PW-EE4.6 SERIES	6-7.
PW-EE5.0 SERIES	8-9.
PW-EE5.0 SERIES	10
PW-SMD05E1155-CT SERIES	11.
PW-SMD05E1156-CT SERIES	12
PW-SMD1123-05E SERIES	13
PW-EE5.7 SERIES	14-15
PW-EE6.0 SERIES	16-17.
PW-EE6.6 SERIES	18.
PW-EE8.3A SERIES	19-20.
PW-EE8.3B SERIES	21-22
PW-EE8.3DIP SERIES	23.
PW-EE8.5 SERIES	24.
PW-EP0710 SERIES	25
PW-EP10 SERIES	26-27.
PW-UU9.8 SERIES	28.
PW-Ef12.6 SERIES	29-31.



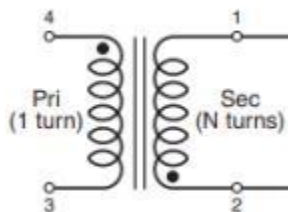
KEE 4.2 - Series Current Sense Transformers

Can also be used in 48 V vehicle electrical systems

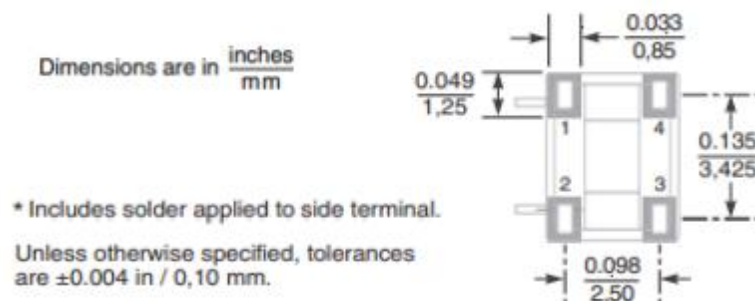
1. Dimensions:mm



2.Schematic:



3. Recommended Land Pattern



4. ELECTRIC CHARACTERISTICS

Electrical Specifications @ 25°C — Operating Temperature -40°C to +125°C

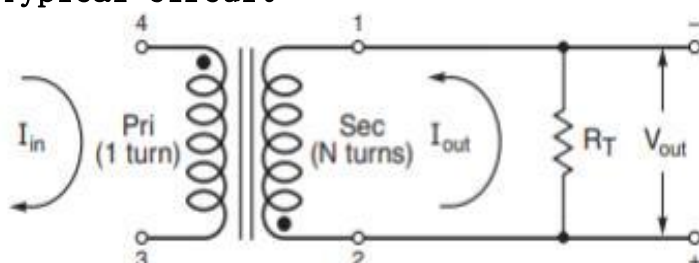
Part Number	Turns Ration	Current Rating _{2 NP} (A)	Secondary Inductance (uH MIN)	DCR (Ω typ)		Hipot (V _{RMS})
				Primary (4-3)	Secondary (2-1)	Np-Ns
PW-BKEE4.2-1:20	1:20	7	33	0.003	0.35	1500V
PW-BKEE4.2-1:30	1:30	7	74	0.003	0.90	1500V
PW-BKEE4.2-1:40	1:40	7	132	0.003	1.60	1500V
PW-BKEE4.2-1:50	1:50	7	205	0.003	2.50	1500V
PW-BKEE4.2-1:60	1:60	7	295	0.003	3.60	1500V
PW-BKEE4.2-1:70	1:70	7	400	0.003	4.60	1500V
PW-BKEE4.2-1:100	1:100	7	820	0.003	9.50	1500V
PW-BKEE4.2-1:125	1:125	7	1280	0.003	13.0	1500V
PW-BKEE4.2-1:150	1:150	7	1800	0.003	21.0	1500V

Inductance measured between secondary pins at 100 kHz, 0.1 Vrms,

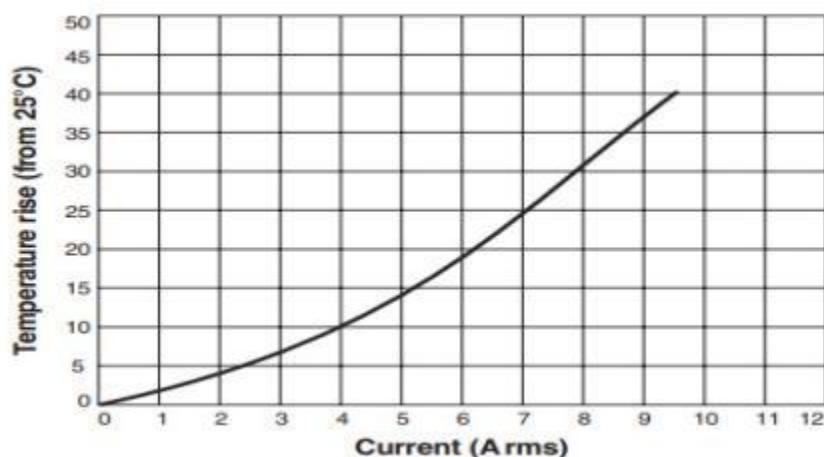
Ambient temperature -40 ° C to +125 ° C

Storage temperature Component: -40 ° C to +85 ° C

5. Typical Circuit



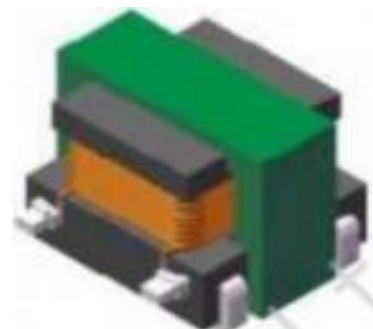
6. Temperature Rise vs Current



PW-EE4.4 SERIES SMT CURRENT SENSE TRANSFORMERS

Features :

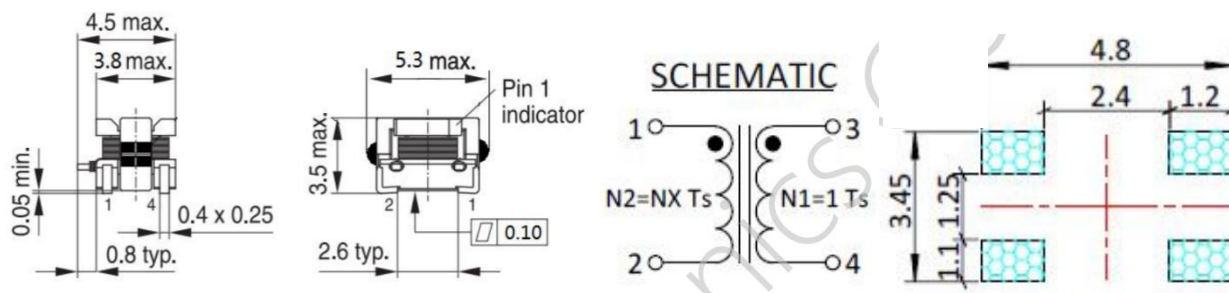
- Very low DC resistance
- Different turns ratios
- Very small package
- RoHS compatible.
- .500Vrms, one minute isolation (hipot) between Endings .
- **Sensed Current - primary rated for 7 Amps..**



Applications :

- .Switching power supply (Aes)
- .feedback control
- .overload sensing.
- .Load drop/shut down detection

Shape and Dimensions (Dimensions are in mm):



Characteristics:

RECOMMEND LAYOUT

Part No.	Turns ratio secipri	Secondary Inductance @100KHZ0.1V (uH)MIN	DCRCQ)		Sensed Current(A) (Max)
			Sec Max	Pri Ref	
PW-EE4.4-20T-1T	20:1	33	0.35	0.003	7
PW-TEE4.4-30T-1T	30:1	74	0.80	0.003	7
PW-EE4.4-40T-1T	40:1	132	1.60	0.003	7
PW-EE4.4-50T-1T	50:1	205	2.50	0.003	7
PW-EE4.4-60T-1T	60:1	295	3.60	0.003	7
PW-EE4.4-70T-1T	70:1	400	4.60	0.003	7
PW-EE4.4-100T-1T	100:1	820	9.50	0.003	7
PW-EE4.4-125T-1T	125:1	1280	13.0	0.003	7
PW-EE4.4-150T-1T	150:1	1840	21.0	0.003	7



PWEE4.4 SERIES SMT CURRENT SENSE TRANSFORMERS

权智电子科技 (珠海) 有限公司

Primary current of 7 A causes less than

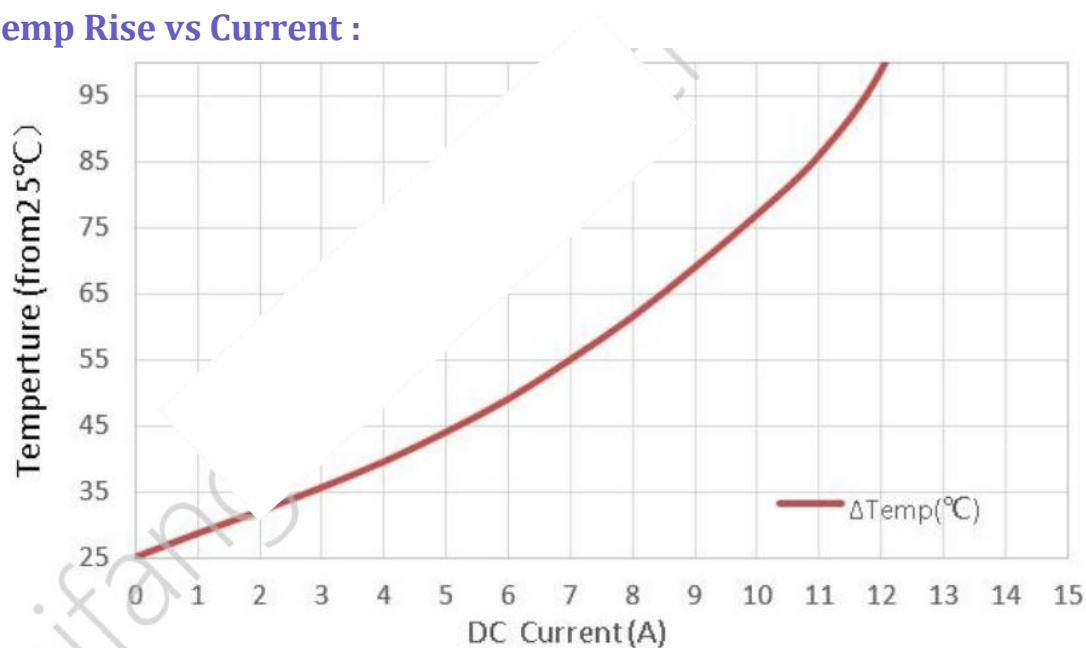
.Operating -40° to 125°C.

Storage temperature Component -40° to 165°C.

Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0ADc

Measuring Frequency :PW-EE4.4@50KHZ TO 1MHZ

Temp Rise vs Current :



Current Sense Transformers PW-EE4.6

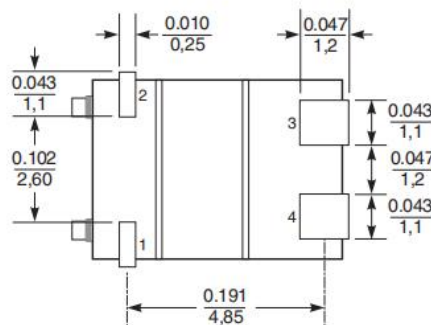
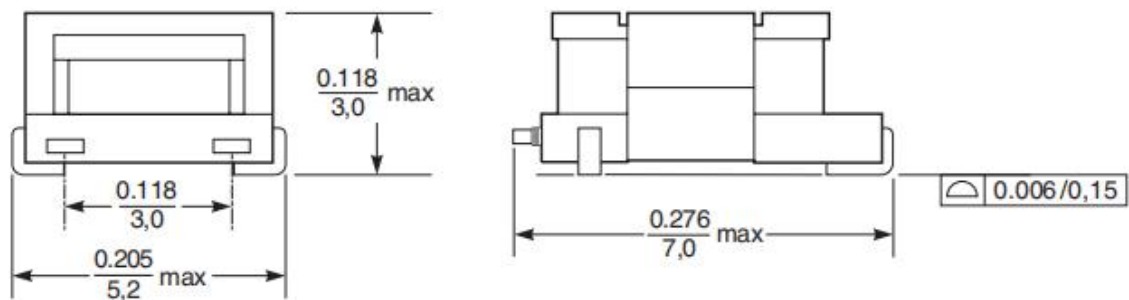
● FETURE: 特点

- AEC-Q200 Grade 1 (-40°C to +125°C)
- Small surface mount current sensors
- Sensed current up to 20 A; Designed for frequency range up to 1 MHz and above
- Very low primary DC resistance
- 500 Vrms, one minute isolation (hipot) between windings
- Designed for:

Continuous AC current monitoring in switched-mode power supply; Overload and short-circuit protection; Current measurement in traction motor and battery management systems in conventional and xEV (EV, HEV, FCEV) vehicles.

- Can also be used in 48 V vehicle electrical sy

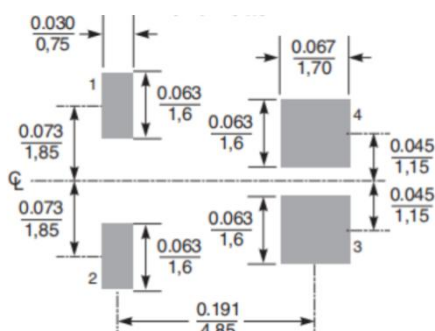
● Dimensions



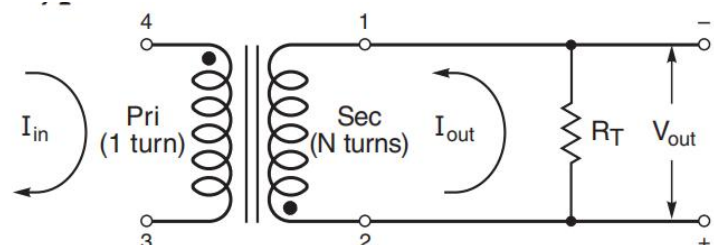
Dimensions are in $\frac{\text{inches}}{\text{mm}}$



● Recommended Land Pattern



Typical Circuit



● Characteristics

Part number ¹	Turns (N) pri :sec	Inductance ¹ min (mH)	DCR max (Ohms) pri sec		Frequen cy range ² (kHz)	Volt-time product ³ (Vμsec)	Sensedcurr ent lin ⁴ max (A)	Terminating resistance RT ⁵ (Ohms)	Coicraft'sPart number ¹
PW-EE4.6-20T	1:20	0.053	0.0015	0.42	78 - >1000	0.4	20	1.0	CST7030-020L
PW-EE4.6-50T	1:50	0.333	1.0015	2.76	31 - >1000	16.0	20	2.5	CST7030-050L
PW-EE4.6-70T	1:70	0.652	2.0015	5.04	22 - >1000	22.4	20	3.5	CST7030-070L
PW-EE4.6-100T	1:100	1.33	3.0015	10.68	16 - >1000	32.0	20	5.0	CST7030-100L
PW-EE4.6-150T	1:150	2.993	4.0015	22.3	10 - >1000	48.0	20	7.5	CST7030-150L

1.. Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0 Adc.

2. For specific questions regarding frequency range, please contact us at cst@coilcraft.com.

3. Volt-time product is for the secondary, between pin 1 and 2.

4. Primary current of 20 A causes less than 25°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

5. Terminating resistance (RT) value is based on 1 Volt output with 20 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation: $RT = V_{out} \times N_{sec} / I_{in}$.

6. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering

7.Core material Ferrite

8.Terminations RoHS compliant tin-silver-copper over tin over nickel over copper

9.Ambient temperature -40°C to +125°C

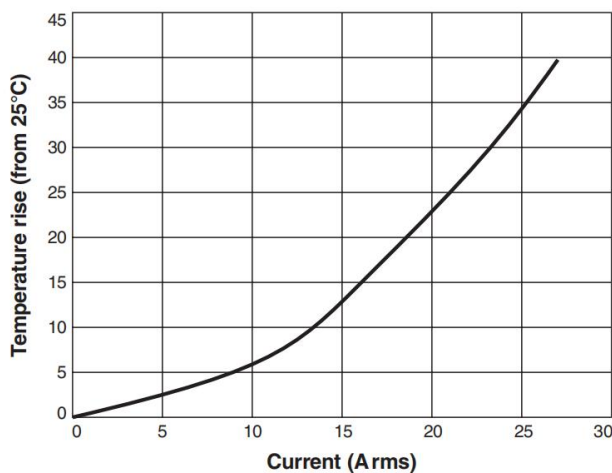
10.Maximum part temperature +165°C (ambient + temp rise)

11.Storage temperature Component: -40°C to +125°C.

12.Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

13.Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

● Temperature Rise vs Current



PW-EE5.0 SERIES Current Sense Transformers

Features:

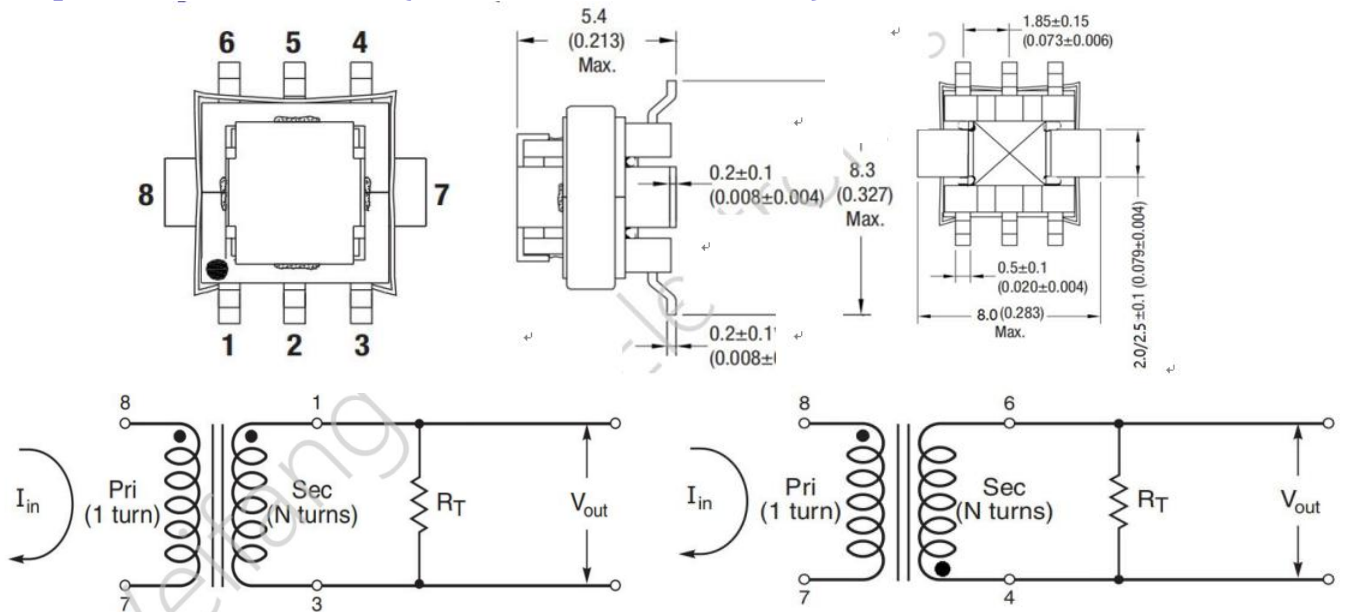
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.

Applications :

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



Shape and Dimension (Dimensions are in mm)



Characteristics : Electrical specifications at 25°C

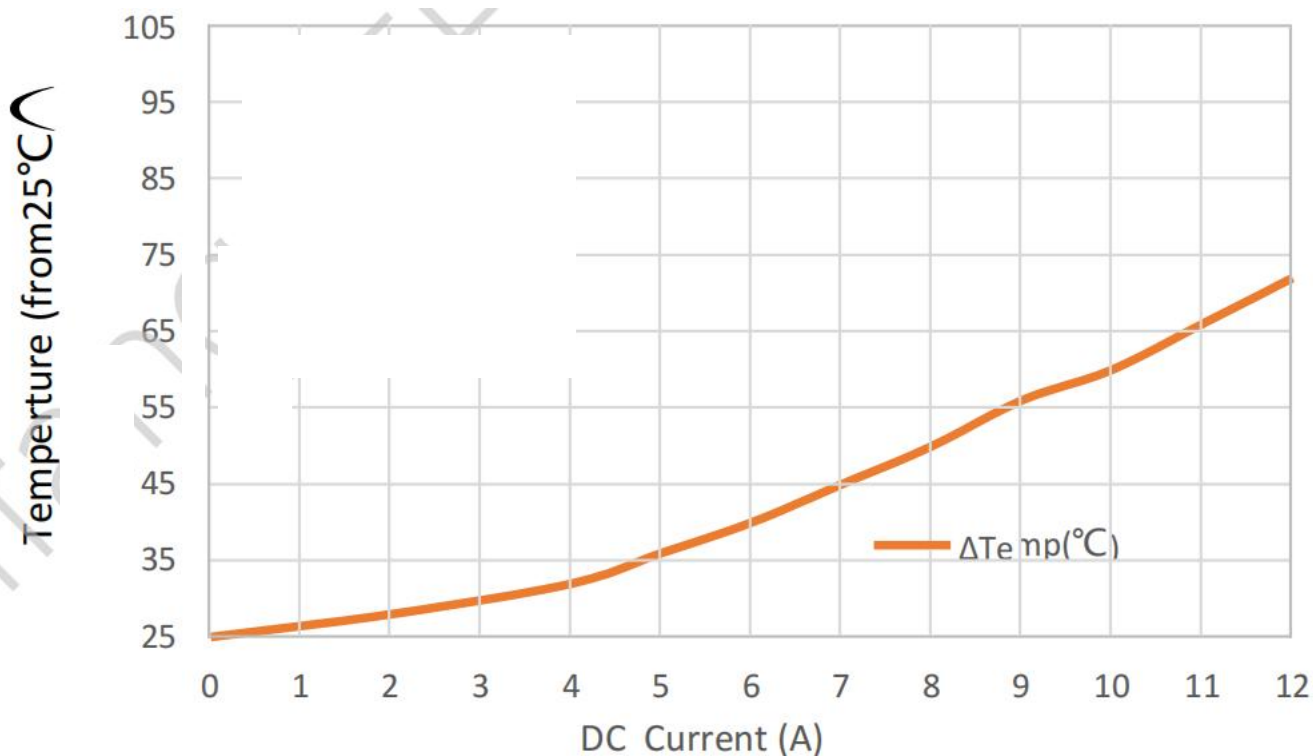
Part No.	Turns ratio sec: Pri	Secondary Impedance @100KHZ, 1V (uH)MINI	DCR(n)		Primary Current(A) gIQ
			Sec Max	Pri Ftef	
PW-EE5.0-20T- 1T	20:1	50	0.40	0.0007	10/20
PW-EE5.0-30T- 1T	30:1	180	0.07	0.0007	10/20
PW-EE5.0-40T- 1 T	40:1	320	1.14	0.0007	10/20
PW-TEE5.0-50T- 1T	50:1	500	1.85	0.0007	10/20
PW-EE5.0-60T- 1T	60:1	730	2.30	0.0007	10/20
PW-EE5.0-70T- 1T	70:1	,980	4.75	0.0007	10/20
SMTEE5.0- 100T- 1T	100:1	2000	5.50	0.0007	10/20
SMTEE5.0- 125T- 1T	125:1	3000	11.50	0.0007	10/20

Temperature Rise Current(Irms):The current when temperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C



PW-EE5.0 SERIES Current Sense Transformers

Temp vs Current



PW-EE5.0 SERIES Current Sense Transformers

Features:

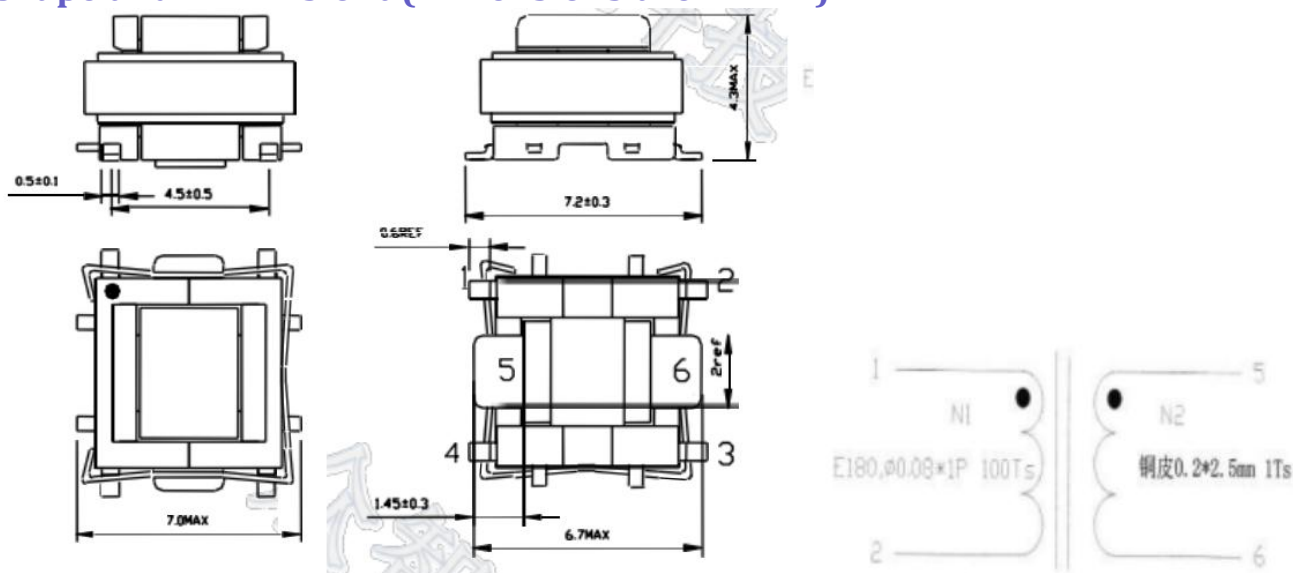
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 28A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、 Notebook PCs、 Portable communication equipment、 DC/DC converters,m etc

Shape and Dimensions (Dimensions are in mm)



Characteristics : Electrical specifications at 25°C

ZZT Model	Inductance (μH)	Maximum current Capacitance (mA Max)	DCR (Max)		VOLTAGE RATIO	Diclectric Rating (for 60 secs)
	@100khz,1V rms		1--2	3--4	1-2:5-6	Pri:Sec
PW-EE5.0-100	1600	2000	5Ω	700mΩ	100: 1	300VDC
PW-EE5.0-50	400	2000	2.3Ω	700mΩ	50: 1	300VDC
PW-EE5.0-20	120	2000	1.4Ω	700mΩ	20: 1	300VDC

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-SMD05E1155-CT SERIES Current Sense Transformers

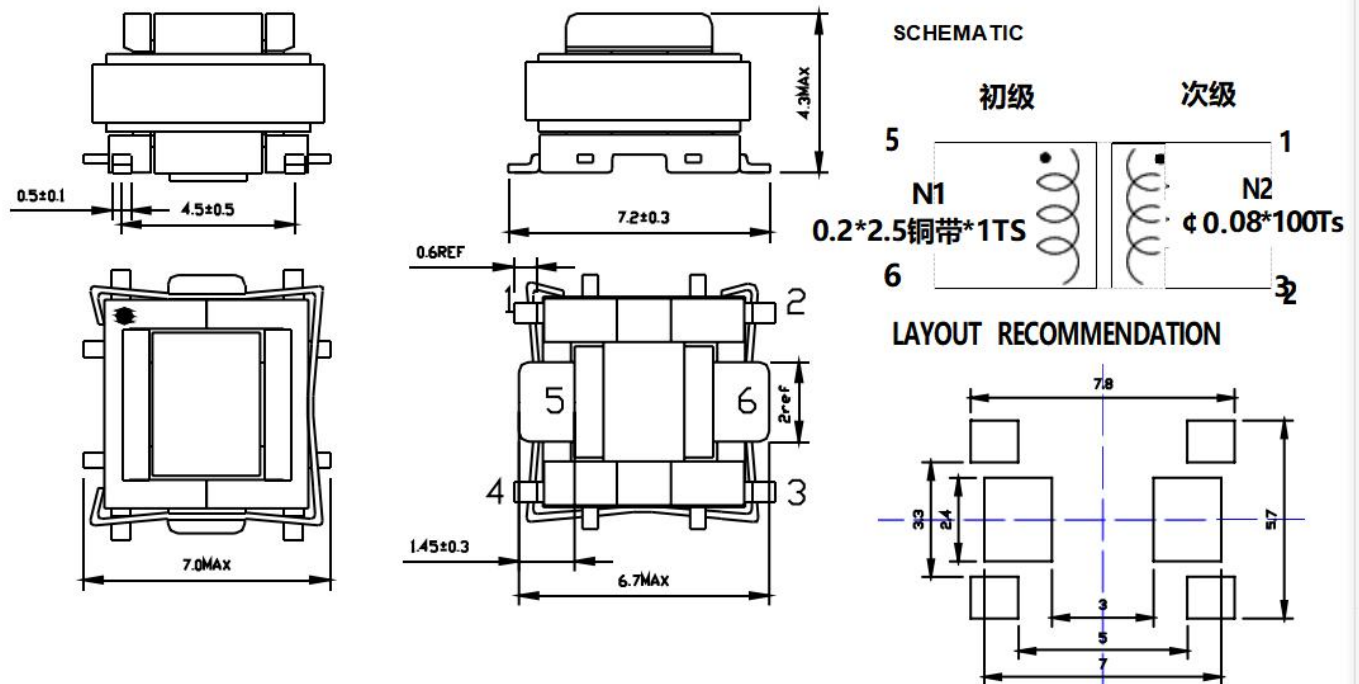
Features:

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

Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 12A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、Notebook PCs、Portable communication equipment.、 DC/DC converters, etc

Shape and Dimension (Dimensions are in mm)



(H高度4.5)

Characteristics : Electrical specifications at 25°C

Inductance (μH)	Leakage Inductance (μH MAX)	Maximum current Capacitance (A Max)	DCR		VOLTAGE RATIO	Dielectric Rating (for 60 secs)	
@100khz,0.1Vrms	@100khz 0.1Vrms		mΩ Max		20khz 1v	VDC	VDC
120 min		12	TYP	0.7	1	300	200
1--2		5--6	1--2	5--6	20--150	Pri:Sec	COIL-CORE

Temperature Rise Current(Irms):The current when temperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-SMD05E1156-CT SERIES Current Sense Transformers

Features:

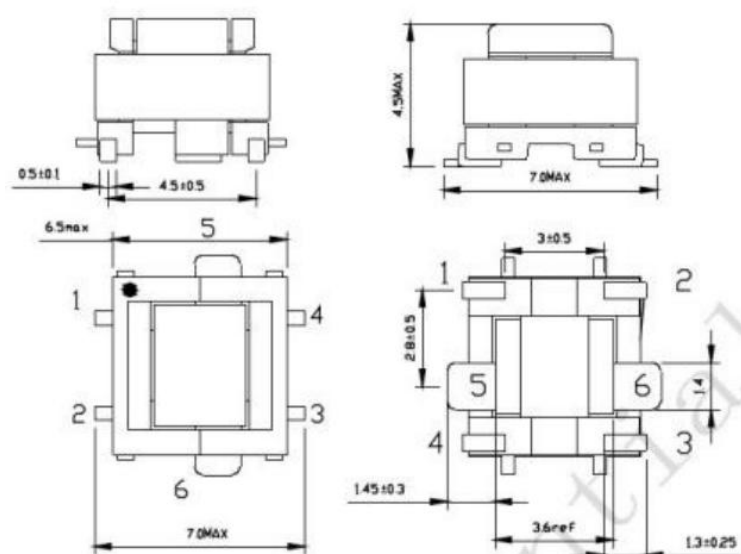
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



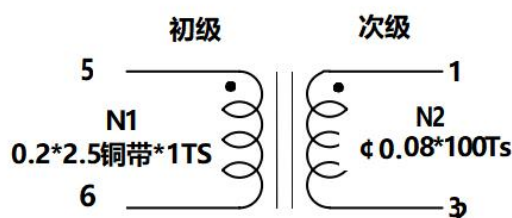
Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 15A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、Notebook PCs、Portable communication equipment.、 DC/DC converters,m etc

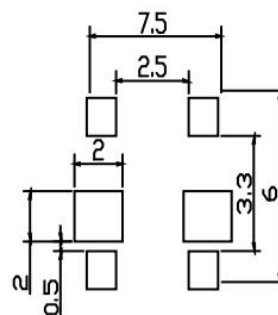
Shape and Dim^{ns}iont (Dimensions are in mm)



SCHEMATIC



LAYOUT RECOMMENDATION



(H高度4.5偏中心)

Characteristics : Electrical specifications at 25°C

Inductance (μ H)	Leakage Inducrance (μ H MAX)	Maximum current Capacitance (A Max)	DCR		VOLTAGE RATIO	Diclectric Rating (for 60 secs)	
@100khz,0.1vms	@100khz 0.1Vrms		m Ω Max		20khz 1v	VDC	VDC
120 min		15	TYP	0.7	1	300	200
1--2		5--6	1--2	5--6	20--150	Pri:Sec	COIL-CORE

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

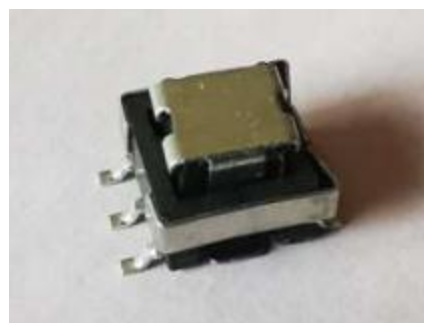
PW-SMD1123-05E SERIES Current Sense Transformers

Features:

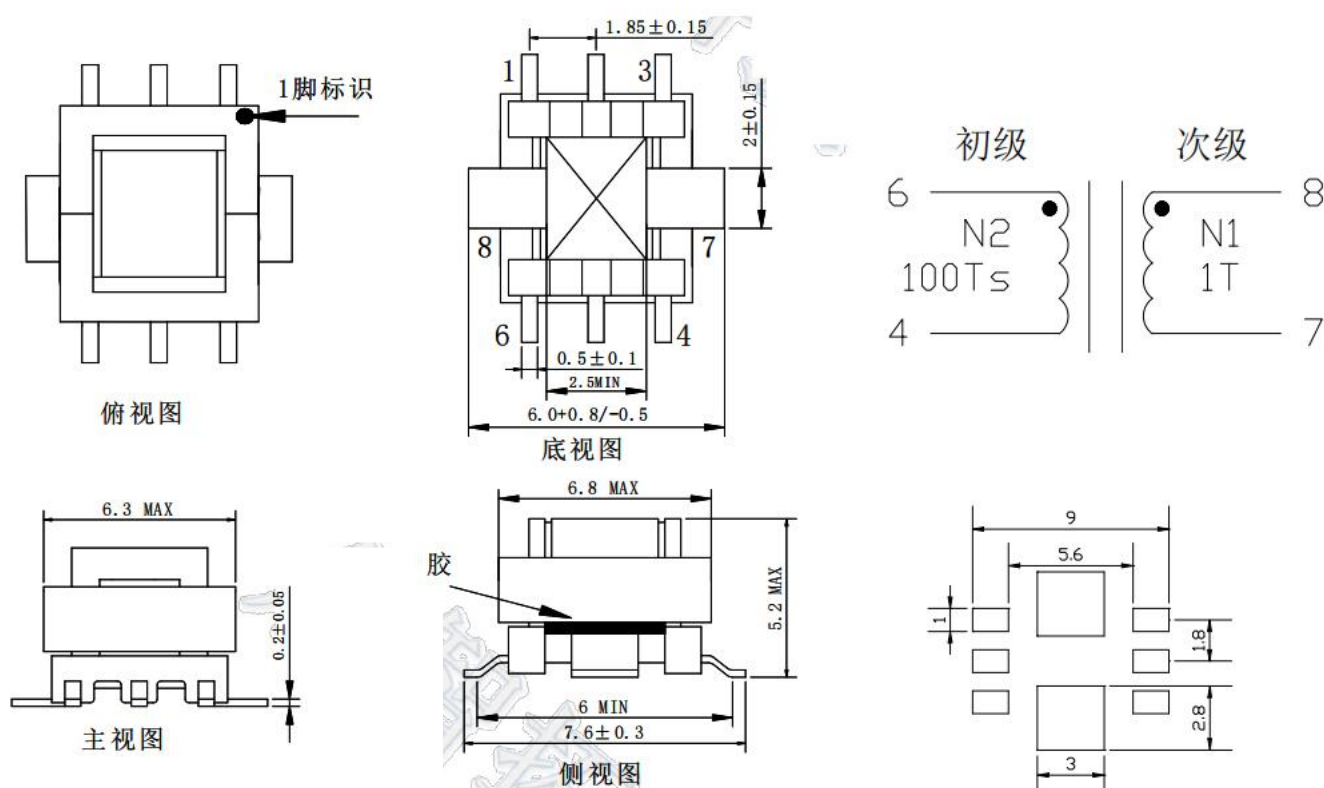
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.

Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 2
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、Notebook PCs、Portable communication equipment.、 DC/DC converters, etc



Shape and Dimensions (Dimensions are in mm)



Characteristics : Electrical specifications at 25°C

ZZT Model	Inductance (μH)	Maximum current Capacitance (A Max)	DCR (Max)		VOLTAGE RATIO	Dielectric Rating (for 60 secs)
	@100khz, 1V rms		Pri	Sec	Pri:Sec	
SMD1123-05E-240	3500	20	26Ω	800mΩ	240: 1	300VDC
SMD1123-05E-100	1600	20	12Ω	800mΩ	100: 1	300VDC
SMD1123-05E-70	1000	20	4.7Ω	800mΩ	70: 1	300VDC
SMD1123-05E-20	100	20	2.5Ω	800mΩ	20: 1	300VDC

Temperature Rise Current(Irms):The current when temperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

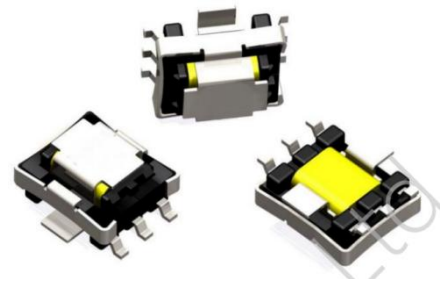
PW-EE5.7 SERIES Current Sense Transformers

Features:

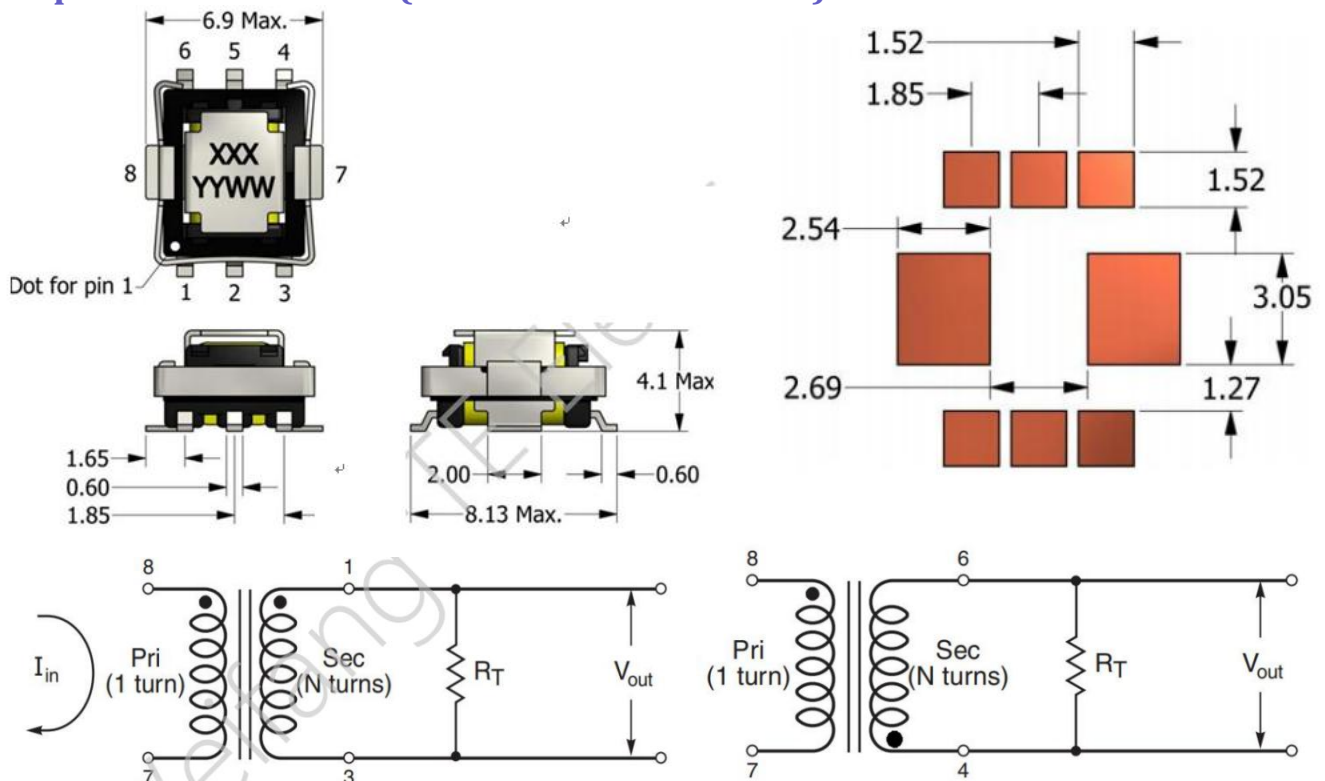
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.

Applications :

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



Shape and Dim^{ns}iont (Dimensions are in mm)



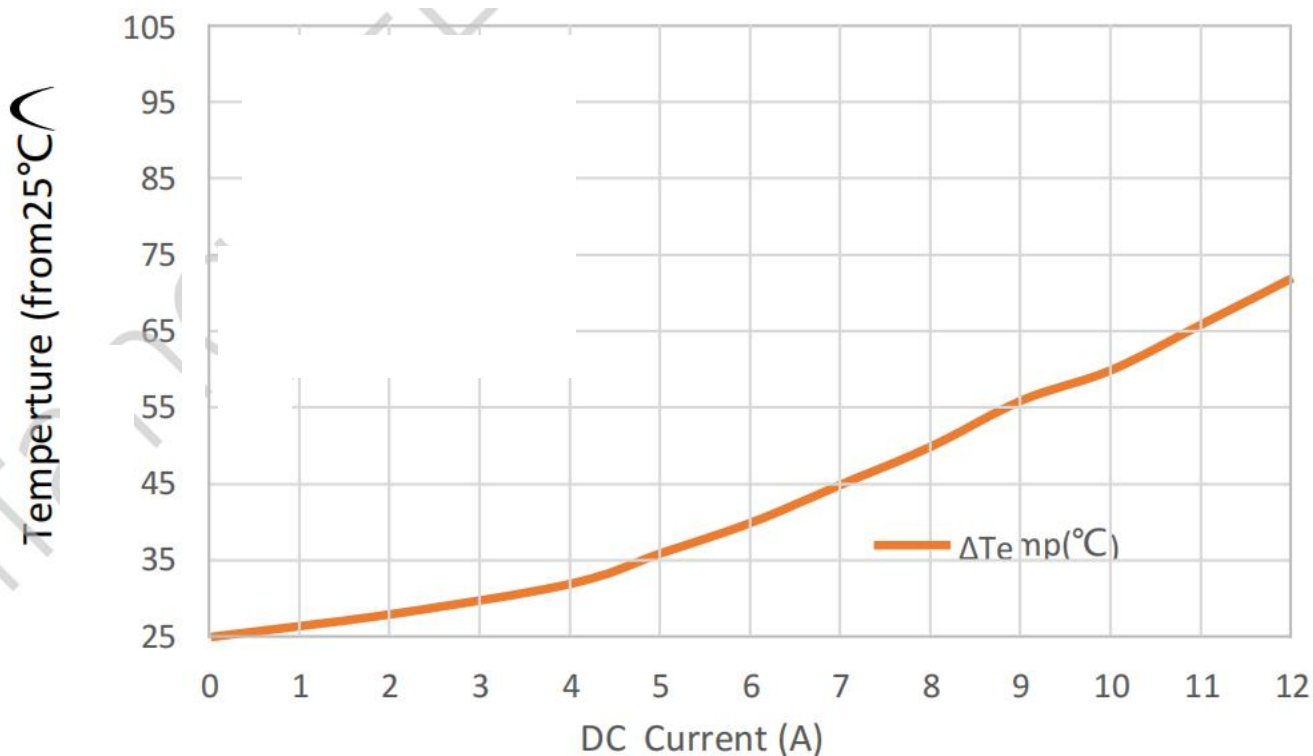
Characteristics : Electrical specifications at 25°C

Part Nlo.	Turns ratio sec: Pri	Secondary ImluGtartce @1D0KHZD. 1V (uHJiMINI	DCR(n)		Primary Current(Aj Max
			Sec Max	Pri Ftef	
PW-EE5.7-50T- 1T	20:1	352	0.90	0.0007	20
PW-EE5.7-70T- 1T	70:1	690	1.70	0.0007	20
SMTEE5.7- 100T- 1T	100:1	1400	3.00	0.0007	20
SMTEE5.7- 125T- 1T	125:1	2200	5.00	0.0007	20

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-EE5.7 SERIES Current Sense Transformers

Temp vs Current



PW-EE6.0 SERIES Current Sense Transformers

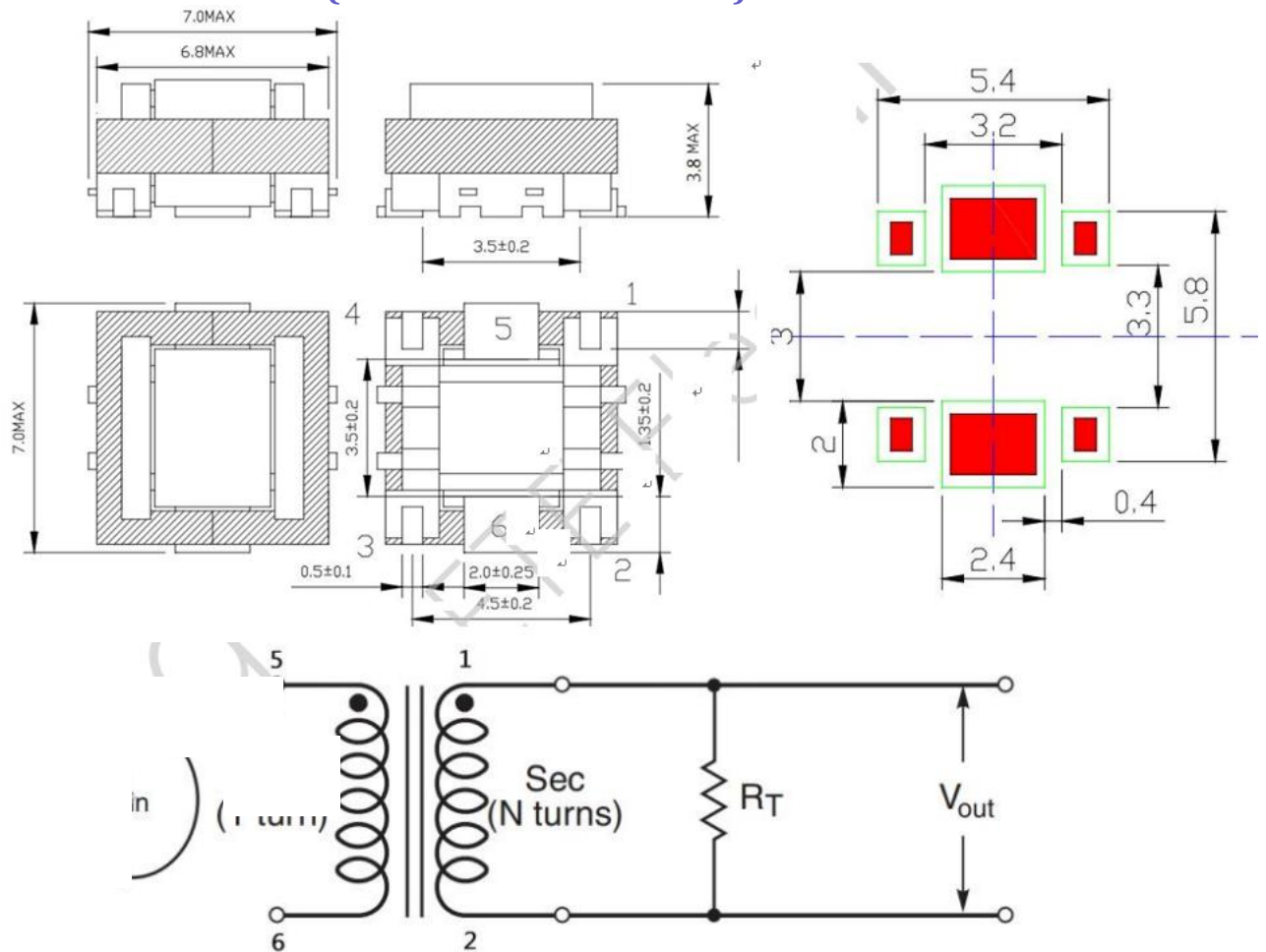
Features:

- 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.

Shape and Dim^{ns}iont (Dimensions are in mm)



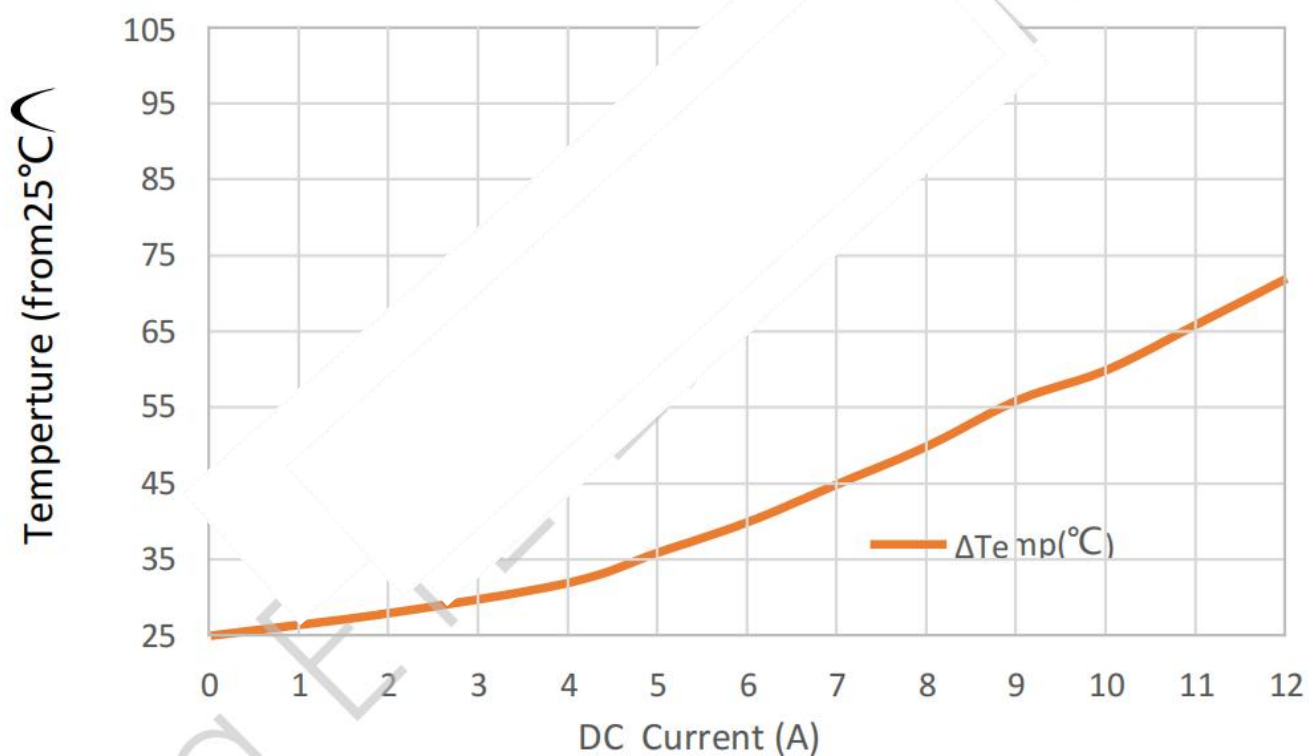
Characteristics : Electrical specifications at 25°C

Part Nlo.	Turns ratio sec: Pri	Secondary ImluGtartce @1D0KHZD. 1V (uHJiMINI	DCR(n)		Primary Current(Aj Max
			Sec Max	Pri Ftef	
PW-EE6.0- 100T- 1T	100:1	800	0.90	0.0007	10

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-EE6.0 SERIES Current Sense Transformers

Temp vs Current



PW-EE6.6 SERIES Current Sense Transformers

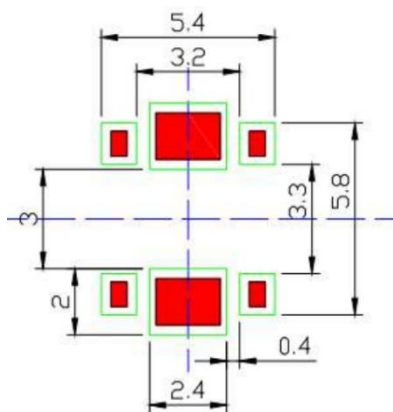
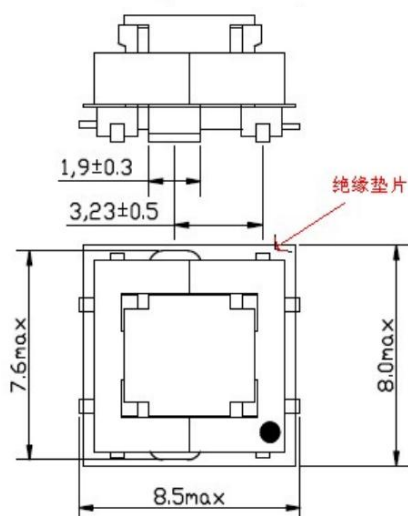
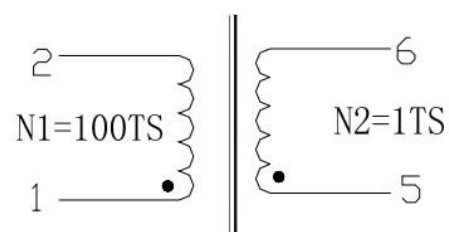
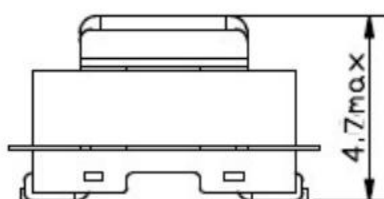
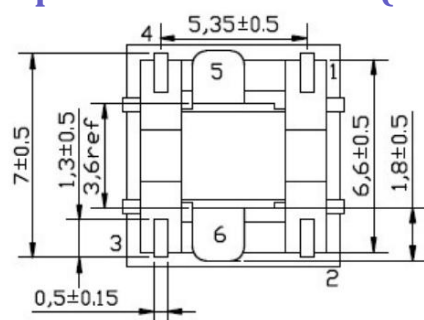
Features:

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

Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 28A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、 Notebook PCs、 Portable communication equipment.、 DC/DC converters,m etc

Shape and Dim^{ns}iont (Dimensions are in mm)



Characteristics : Electrical specifications at 25°C

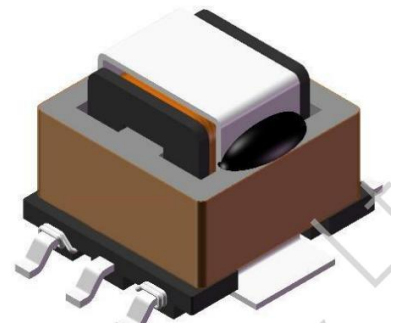
ZZT Model	Inductance (μH)	Maximum current Capacitance (A Max)	DCR (Max)		VOLTAGE RATIO	Diclectric Rating (for 60 secs)
	@100khz,1V rms		初	次	初:次	Pri:Sec
PPW-EE6.6-150	2500	20	12Ω	450mΩ	150: 1	300VDC
PPW-EE6.6-100	800	20	8.6Ω	450mΩ	100: 1	300VDC
PPW-EE6.6-70	400	20	5.8	450mΩ	70: 1	300VDC
PPW-EE6.6-50	100	20	4.5Ω	450mΩ	50: 1	300VDC

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-EE8.3A SERIES Current Sense Transformers

Features:

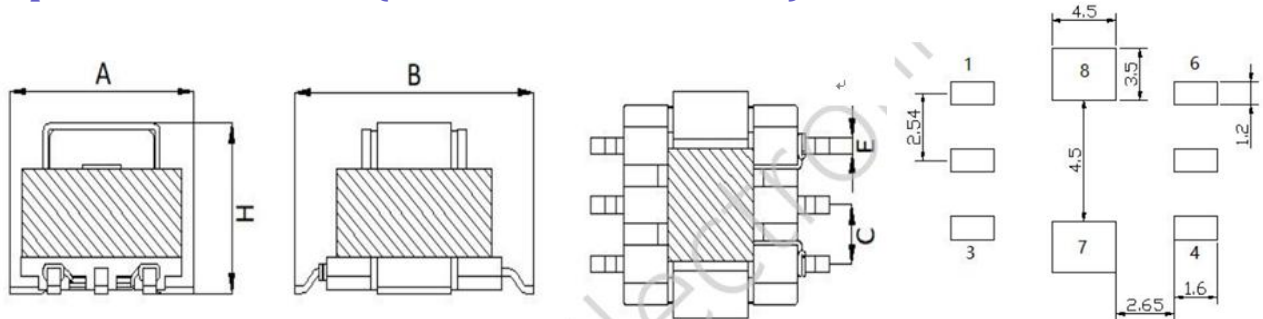
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



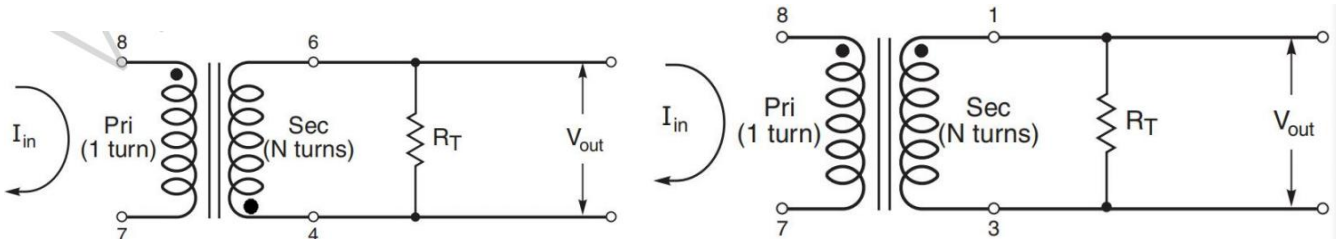
Applications :

- Power supply for VTRs
- Small surface mount current sensors
- Sensing current up to 30A; Frequency range up to 1MHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings
- LCD televisions, Notebook PCs, Portable communication equipment, DC/DC converters, etc

Shape and Dimensions (Dimensions are in mm)



Item	A MAX	B MAX	H MAX	C	E
PW-EE8.3A	9.70	12.80	7.00	2.50	1.00



Characteristics : Electrical specifications at 25°C

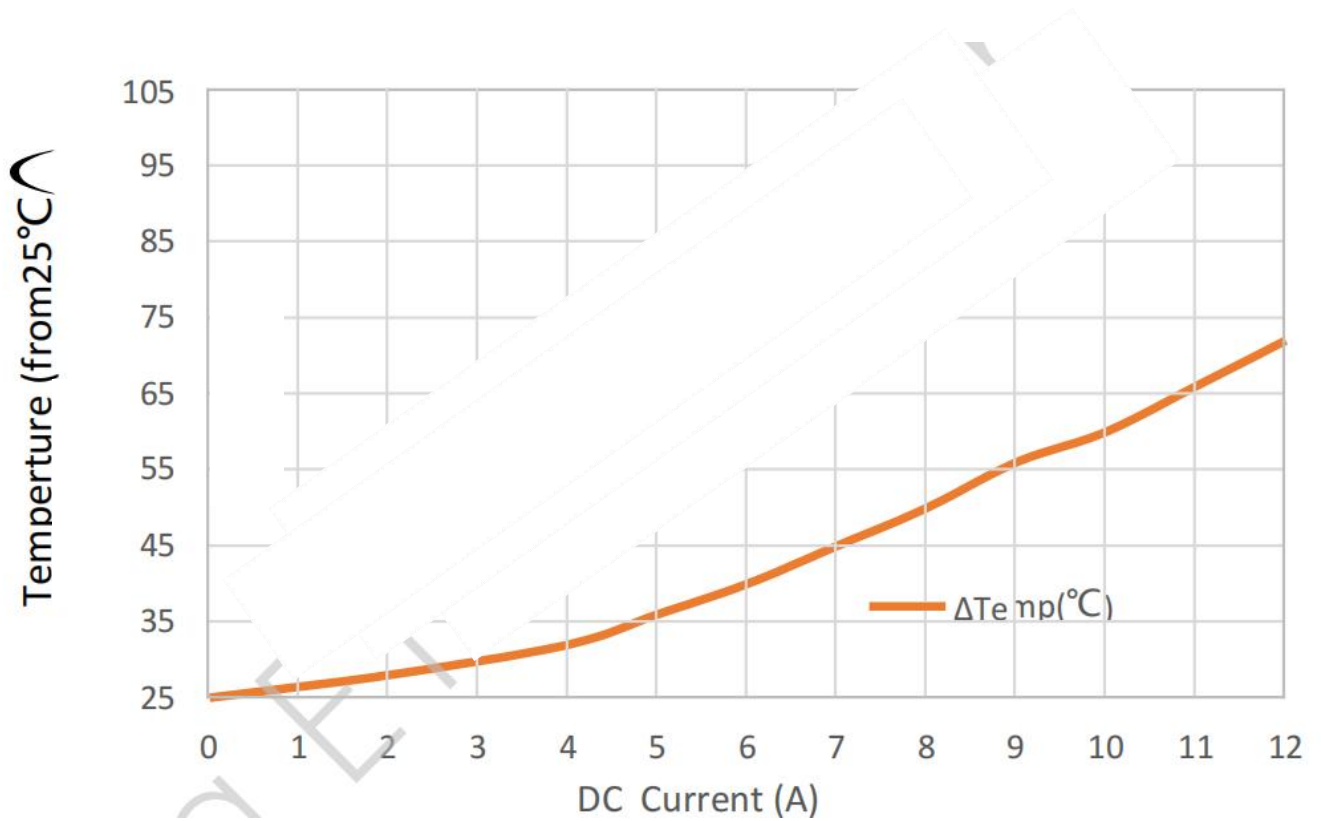
Part Nlo.	Turns ratio sec: Pri	Secondary ImluGtartce @1D0KHZD.1V (uHJiMINI	DCR(n)		Primary Current(Aj Max
			Sec Max	Pri Ftef	
PW-EE8.3A- 50T- 1T	50:1	0.63	0.60	0.0039	30
PW-EE8.3A- 100T- 1T	100:1	2.50	3.00	0.0039	30
PW-EE8.3A- 150T- 1T	150:1	5.63	5.70	0.0039	30
PW-EE8.3A- 200T- 1T	200:1	10.0	10.0	0.0039	30
PW-EE8.3A- 300T- 1T	300:1	22.5	25.0	0.0039	30

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C



PW-EE8.3A SERIES Current Sense Transformers

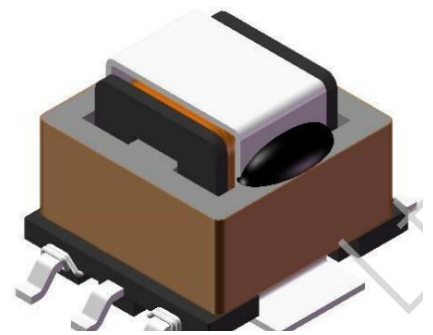
Temp vs Current



PW-EE8.3B SERIES Current Sense Transformers

Features:

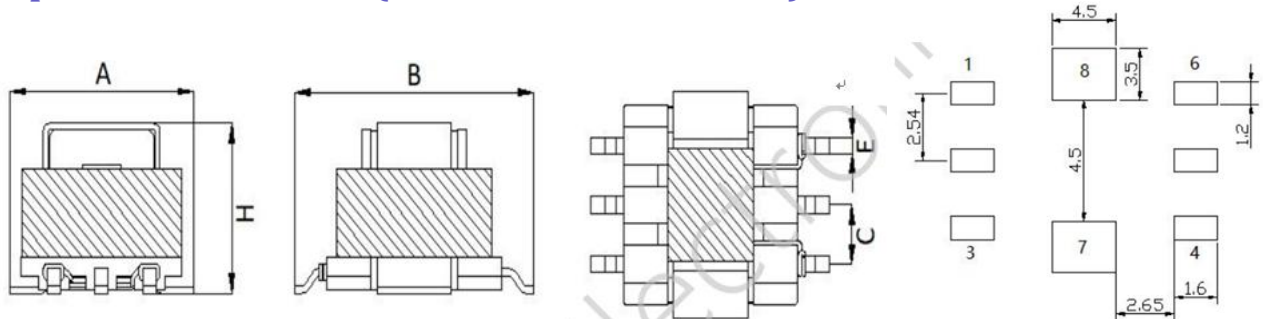
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



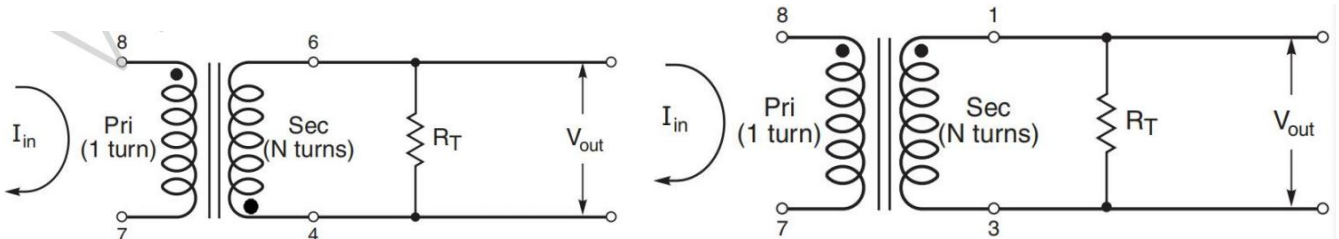
Applications :

- Power supply for VTRs
- Small surface mount current sensors
- Sensing current up to 30A; Frequency range up to 1MHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings
- LCD televisions, Notebook PCs, Portable communication equipment, DC/DC converters, etc

Shape and Dimensions (Dimensions are in mm)



Item	A MAX	B MAX	H MAX	C	E
PW-EE8.3B	9.70	12.80	7.80	2.50	1.00



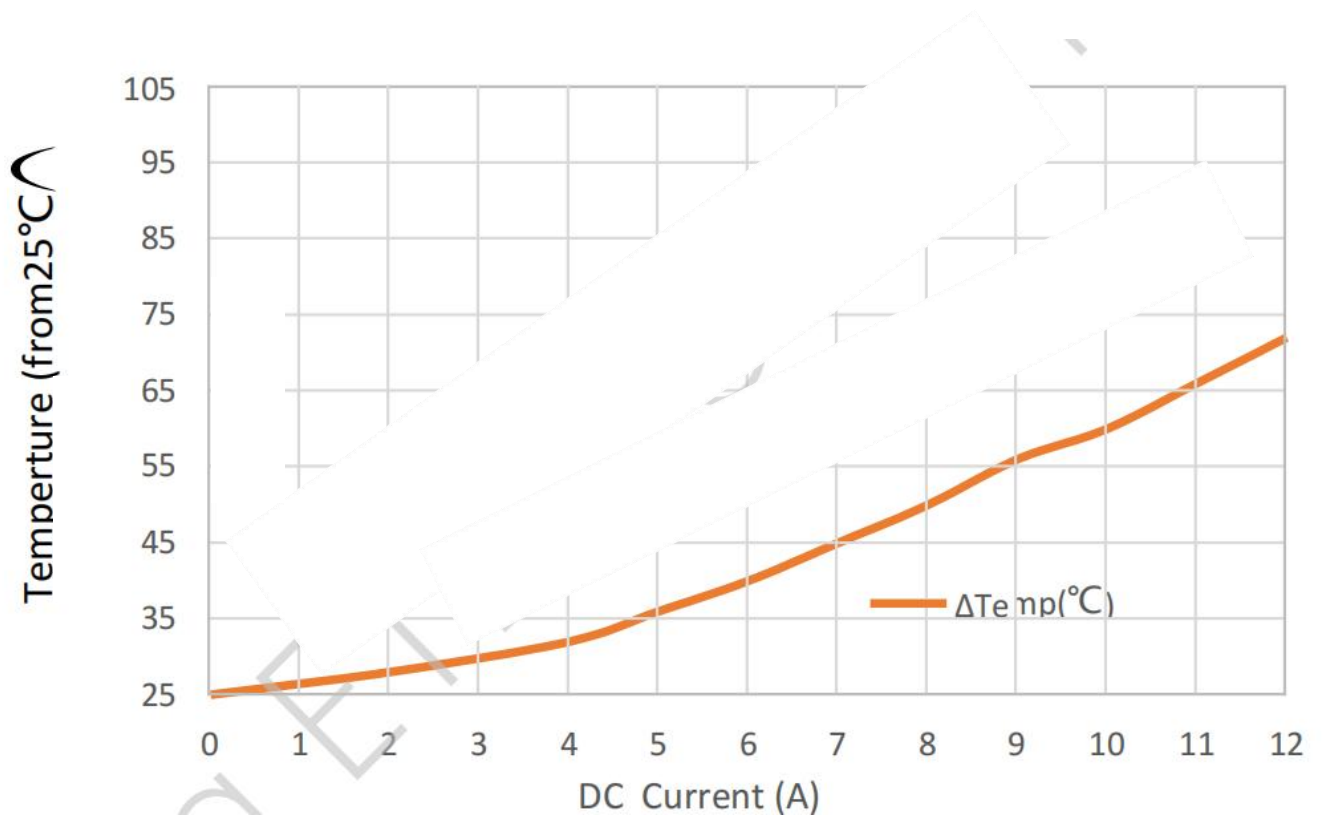
Characteristics : Electrical specifications at 25°C

Part Nlo.	Turns ratio sec: Pri	Secondary ImluGtartce @1D0KHZD.1V (uHJiMINI	DCR(n)		Primary Current(Aj Max
			Sec Max	Pri Ftef	
PW-EE8.3B- 50T- 1T	50:1	1.40	0.65	0.0039	30
PW-EE8.3B- 100T- 1T	100:1	5.60	2.00	0.0039	30
PW-EE8.3B- 125T- 1T	125:1	8.70	5.20	0.0039	30
PW-EE8.3B- 150T- 1T	150:1	12.60	6.50	0.0039	30
PW-EE8.3B-200T- 1T	200:1	22.0	8.00	0.0039	30

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-EE8.3B SERIES Current Sense Transformers

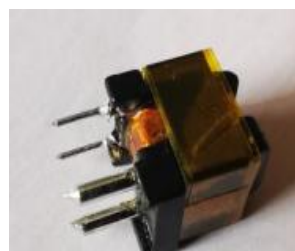
Temp vs Current



PW-EE8.3 DIP SERIES Current Sense Transformers

Features:

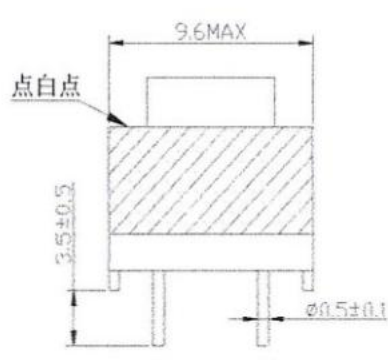
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



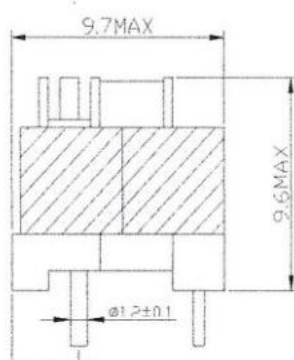
Applications :

- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 28A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、 Notebook PCs、 Portable communication equipment、 DC/DC converters, etc

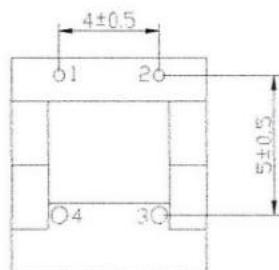
Shape and Dimensions (Dimensions are in mm)



主视图

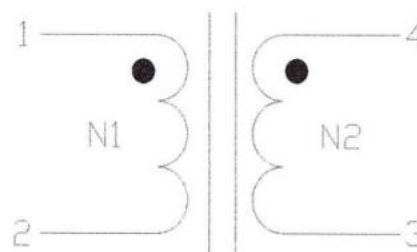


侧视图



底视图

SCHEMATIC



Characteristics : Electrical specifications at 25°C

ZZT Model	Inductance (mH)	Maximum current Capacitance (A Max)	DCR (Max)		VOLTAGE RATIO	Diclectric Rating (for 60 secs)
	@1khz,0.3V rms		Pri	Sec	Pri:Sec	
PW-EE8.3DIP-200	24	7	-	300mΩ	200: 1	1800VDC
PW-EE8.3DIP150	13.5	7	-	300mΩ	150: 1	1800VDC
PW-EE8.3DIP100	6	7	-	300mΩ	100: 1	1800VDC

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

PW-EE8.5 SERIES Current Sense Transformers

Features:

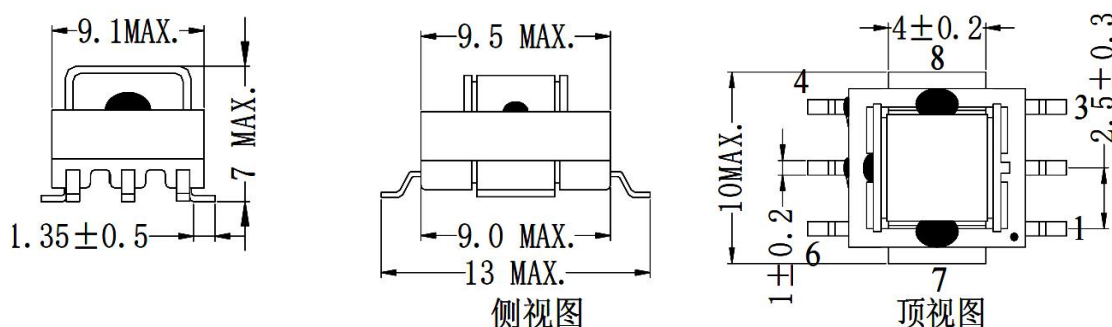
- Very low DC resistance
- Different turns ratios.
- Small package.
- Other pinning on request.



Applications :

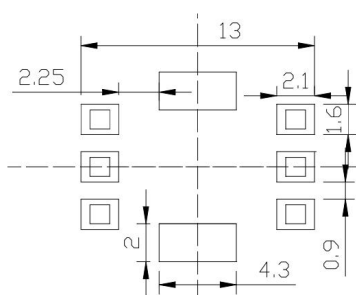
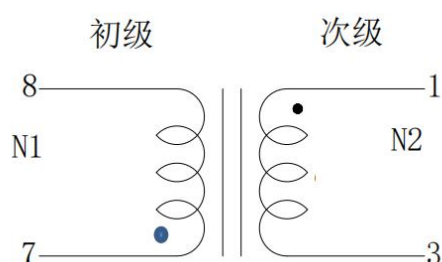
- Power supply for VTRs
- Small surface mount current sensors Sensed current up to 28A; Switching Frequency:64 KHz
- Very low primary DC resistance
- 1.0KV DC/3mA / 1S isolation (hipot) between windings LCD televisions、 Notebook PCs、 Portable communication equipment.、 DC/DC converters,m etc

Shape and Dim^{ns}iont (Dimensions are in mm)



SCHEMATIC

LAYOUT



Characteristics : Electrical specifications at 25°C

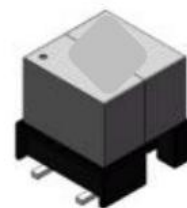
ZZT Model	Inductance (μH)	Maximum current Capacitance (A Max)	DCR (Max)		VOLTAGE RATIO	Diclectric Rating (for 60 secs)
	@100khz,1V rms		Pri	Sec	Pri:Sec	Pri:Sec
PW-EE8.5--300-1T	2500	28	-	300mΩ	300: 1	500VDC
PW-EE8.5--240-1T	800	28	-	300mΩ	240: 1	500VDC
PW-EE8.5--200-1T	400	28	-	300mΩ	200: 1	500VDC
PW-EE8.5--100-1T	100	28	-	300mΩ	100: 1	500VDC

Temperature Rise Current(Irms):The current whentemperature of coil increases up to max.T=40C.(Ta=20C)
Operating temperature : -40C to 125C

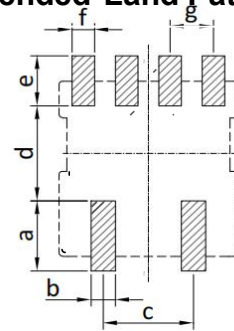
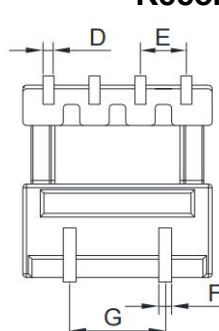
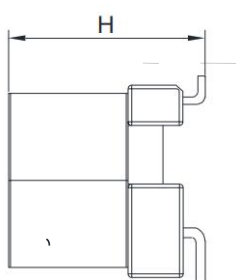
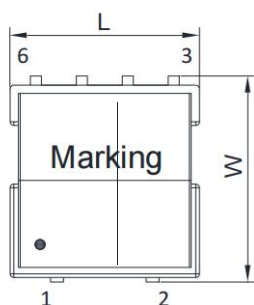
PW-EP0710 Current Transformers

Product Outline

- For use up to 500kHz and sensed currents up to 20A.
- Very low primary DC resistance with frame molded in type.
- Ideally used in On-board Charger(OBC), Mobile device wireless charging and other electronic devices.
- Operating temperature range(Including self temperature rise):-40°C to +125°C.
- Custom design is also available.
- RoHS Compliant.



Dimensions



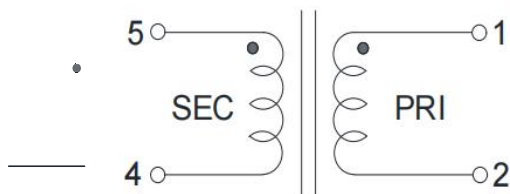
Unit: mm

Recommended Land Patterns

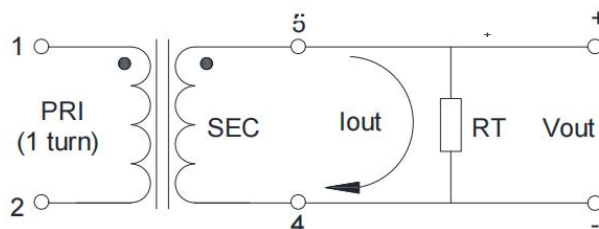
Type	L	W	H	D	E	F	G	a	b	c	d	e	f	g	Packaging (pcs/reel)
CTEP0710	10.6 Max.	11.5 Max.	11.0 Max.	0.6	2.5	0.7	5.2	4.2	1.4	5.2	5.7	3.0	1.3	2.5	300

Dimensions without tolerance are typical.

Schematics



Application Circuit



Electrical Characteristics(at 25°C)

Part Number	Marking	Turns ratio	Inductance ① (mH) Min.	DCR(PR I) (mΩ) Typ.	DCR(SE C) (Ω) Max.	Volt-time ② (μVs)	Isensed ③ (A) Max.	RT ④ (Ω)
PW-EP0710-A001	050	1:50	0	1.25	1.10	103	20	2.50
PW-EP0710-A002	070	1:70	3.00	1.25	2.10	144	20	3.50
PW-EP0710-A003	100	1:100	7.00	1.25	4.20	206	20	5.00
PW-EP0710-A004	125	1:125	11.0	1.25	5.50	258	20	6.30

Note:

- Inductance tested on secondary side at 10kHz, 0.1V using an Agilent/HP 4192A or equivalent.
- Maximum volt-time product for the secondary, based on peak flux density 2000Gauss.
To calculate the peak flux density for uni-polar current use following formula:
 $B_{pk}(Gauss) = 97.09 \cdot V_{REF} \cdot (\text{Max. Duty Cycle}) \cdot 104 / (N \cdot \text{Freq in kHz})$
- The maximum sensed current (Isensed) is based upon temperature rise of the product and represents the DC current which will cause atypical temperature rise of 40°C from 25°C ambient with no airflow.
- Terminating Resistance (RT) value is based on 1V output with maximum sensed current flowing through the primary.
Varying terminating resistance increases or decreases output voltage/current according to the following formula:
 $RT(\Omega) = V_{out} \cdot N_{sec} / I_{Sensed}$

PW-EP10 CurrentSense Transformers

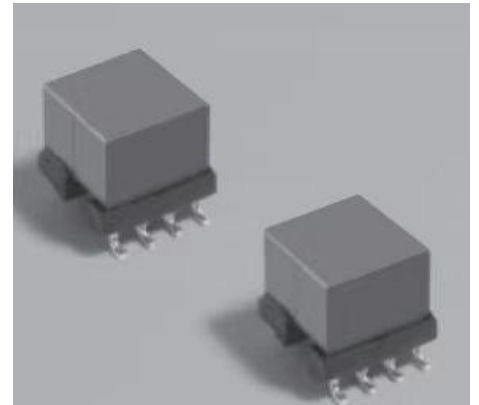
权智电子科技 (珠海) 有限公司

Feature:

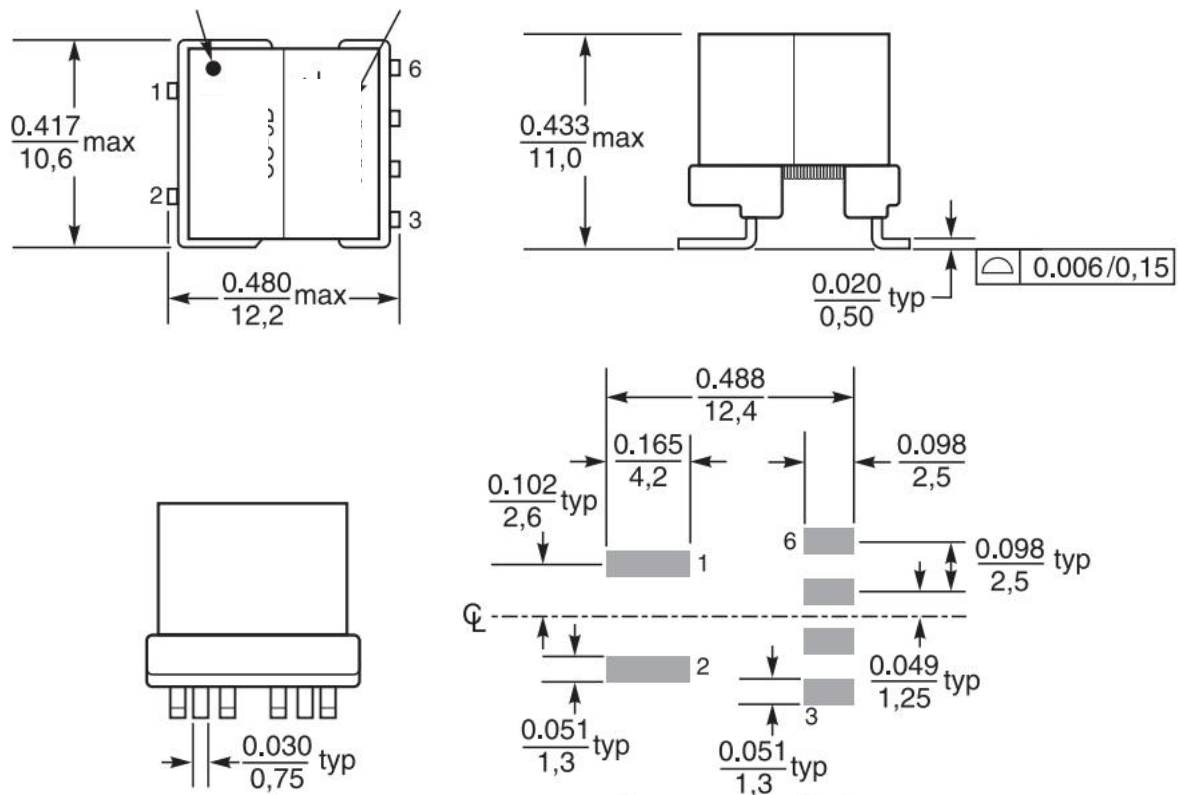
- Designed for use up to 1 MHz and above
- Grade 1 (-40°C to +125°C)
- Insulation distances in compliance with IEC 60664 (basic insulation, working voltage $V_{rms} = 800\text{ V}$)
- UL Class 180 (H) insulating materials, UL 1446 Class F8
- Bobbin plastic UL 94-V0, CTI PLC3
- Pri/Sec: 9 mm creepage and 8 mm clearance

Creepage distance: Pri/Sec: 9 mm; Pri/Core: 5 mm

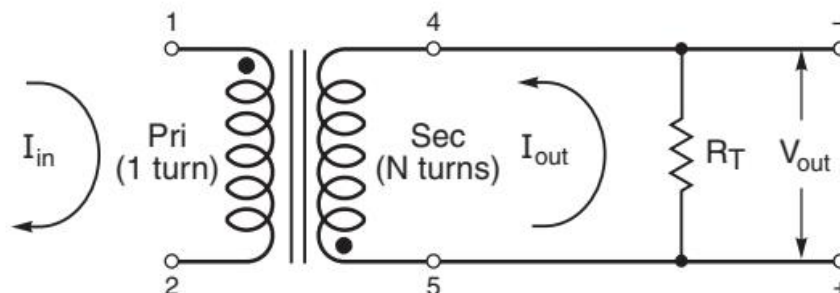
Clearance distance: Pri/Sec: 8 mm; Pri/Core: 4 mm



DIMENSION & Recommended Land Pattern.



SCHEMATIC





ELECTRICAL REQUIREMENTS& TEST CONDITIONAL;

Part number	Turns (N)	L _{min} * 1 (mH)	DCR max (mOhms)		Frequency range*2	Isolation*3	Volt-time product*4	Sensed current I _{in} *5	Terminating resistance RT*6	Coilcraft's Part number
	pri:sec		pri	sec	(kHz)	(Vrms)	(Vμsec)	(A)	(Ohms)	
PW-EP10-50T	1:50	1.7	1.53	650	33->1000	3000	3000	106	28	CST1211-050LD
PW-EP10-70T	1:70	3.0	1.53	1380	24->1000	3000	3000	148.4	28	CST1211-070LD
PW-EP10-100T	1:100	7.0	1.53	2790	17->1000	3000	3000	212	28	CST1211-100LD
PW-EP10-125T	1:125	11.0	1.53	4850	13->1000	3000	3000	265	28	CST1211-125LD
PW-EP10-200T	1:200	32.0	1.53	10.42	11->1000	3000	3000	424	28	CST1211-200LD

Note:

1 Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0 Adc.

2 For specific questions regarding frequency range, please contact us at cst@coilcraft.com.

3 3000 Vrms, one minute isolation (hipot) between windings.

4. Volt-time product is for the secondary, between pin 4 and 5.

5. Primary current of 28 A causes less than 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

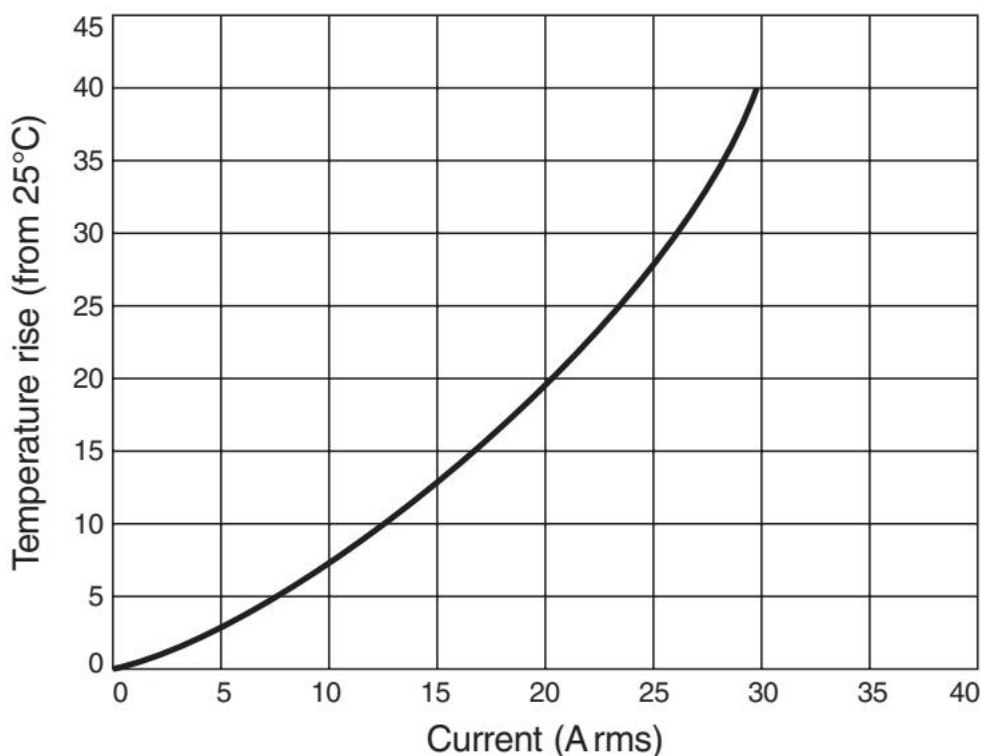
6. Terminating resistance (RT) value is based on 1 Volt output with 28 Amps flowing through the primary.

Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation:

$$RT = V_{out} \times N_{sec} / I_{in}$$

7..Electrical specifications at 25°C.

Temperature Rise vs Current



PW-UU9.8 current sense transformers

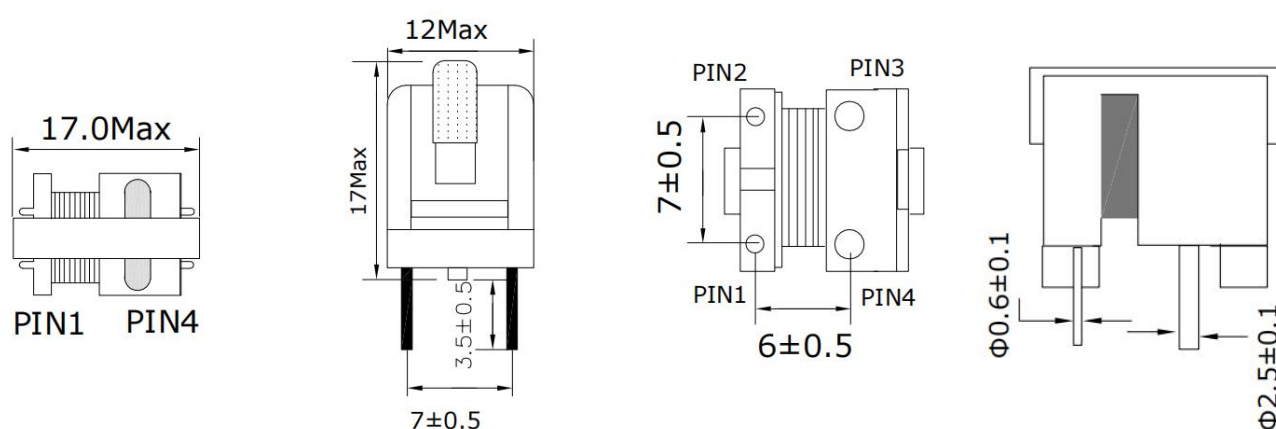
Application

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

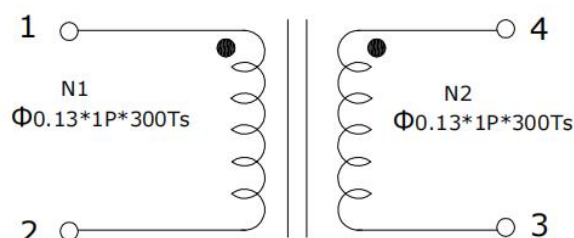
Features

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

Dimensional drawing



ELECTRICAL SCHEMATICS



Technical data and measuring conditions

NO.	L	DCR	HI-POT	HI-POT
Testing Conditions	1KHz/0.30V	AT=25° C	50HZ/1mA/60S	50HZ/1mA/60S
Electrical Parameter	>30mH (Min)	15ΩMax	N1 TO N2 at 3000V	N1.N2 TO CORE at 2000V

PW-EF12.6 SERIES current sense transformers

Features

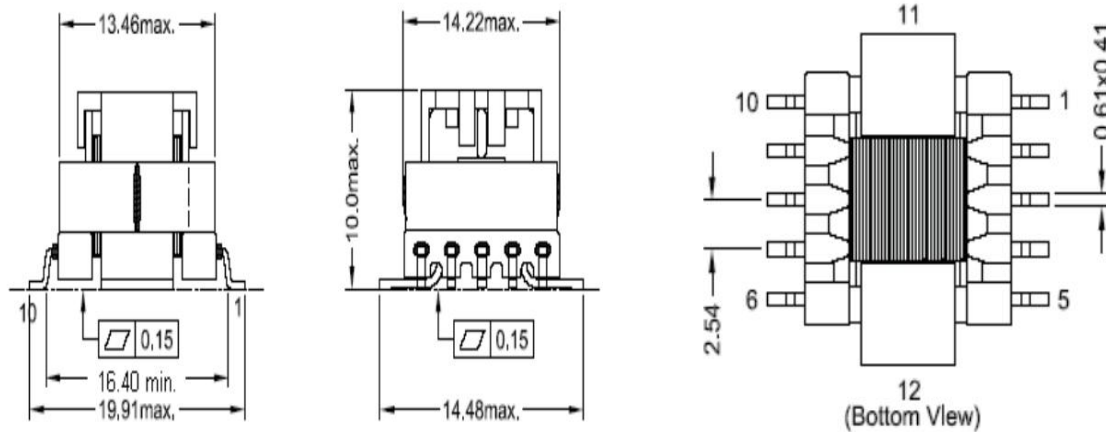
- Very low DC resistance
- Different turns ratios
- Small package
- Other pinning on request
- RoHS compatible

Application

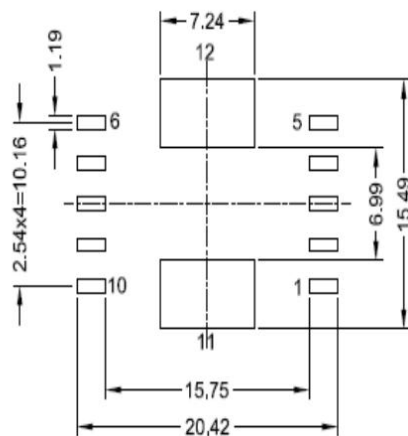
- Switching power supplies
- Feedback control
- Overload sensing
- Load drop/shut down detection



Dimensional drawing

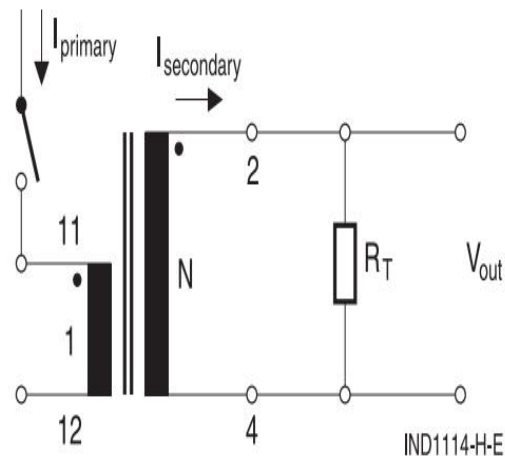


Recommended PCB Layout(Top View)



Dimensions in mm

Application circuit and pinning



PW-EF12.6 SERIES current sense transformers

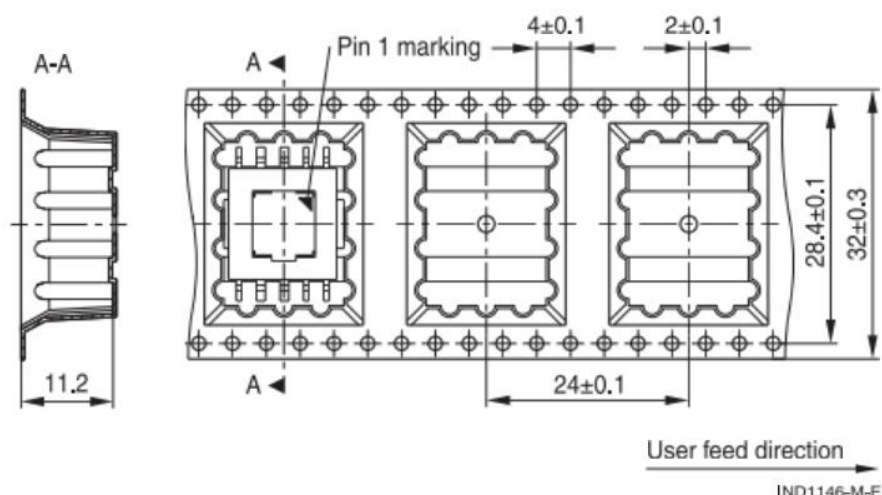
权智电子科技 (珠海) 有限公司

Characteristics and ordering codes

Part No,	$L_{\min}$ mH	Turns ratio $N_p : N_s$	DC resistance $R_{\max}$ (m Ω) primary secondary		Voltage- time product V . μ s	Recom m. RT Ω	TDK's Ordering code
PW-EF12.6-1:50T	1.4	1 : 50	0.28	400	124	50	B82801C0145A050
PW-EF12.6-1:100T	5.6	1 : 100	0.28	1000	248	100	B82801C0565A100
PW-EF12.6-1:150T	12.6	1 : 150	0.28	2200	372	150	B82801C1265A150
PW-EF12.6-1:200T	22.4	1 : 200	0.28	2900	496	200	B82801C2245A200

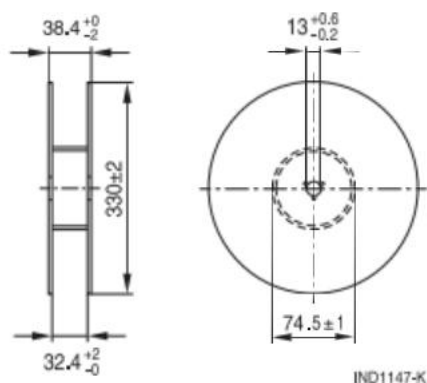
Technical data and measuring conditions

Frequency range	50 ... 500 kHz
Hi-pot	1500 V AC, 50 Hz, 2 s (winding to winding)
Inductance L (2-4)	100 kHz, 100 mV, @ +25 °C
DC resistance $R_{\max}$	Measured at +25 °C (specified per winding)
Sensed current	The max. primary current of 40 A causes approx. +40 °C temperature rise
Solderability	≥ 99.9 Sn, lead-free. Or Sn96.5Ag3.0Cu0.5: +(245 ± 5) °C, (3 ± 0.3) s Wetting of soldering area ≥ 95% (to IEC 60068-2-58)
Resistance to soldering heat	+(260 ± 5) °C, (10 ± 1 s) to IEC 60068-2-58
Storage conditions	−20 °C ... +40 °C, < 75% RH
Operating temperature range	−40 °C ... +125 °C
Weight	Approx. 4.8 g

Blister tape packing
Blister tape


PW-EF12.6 SERIES current sense transformers

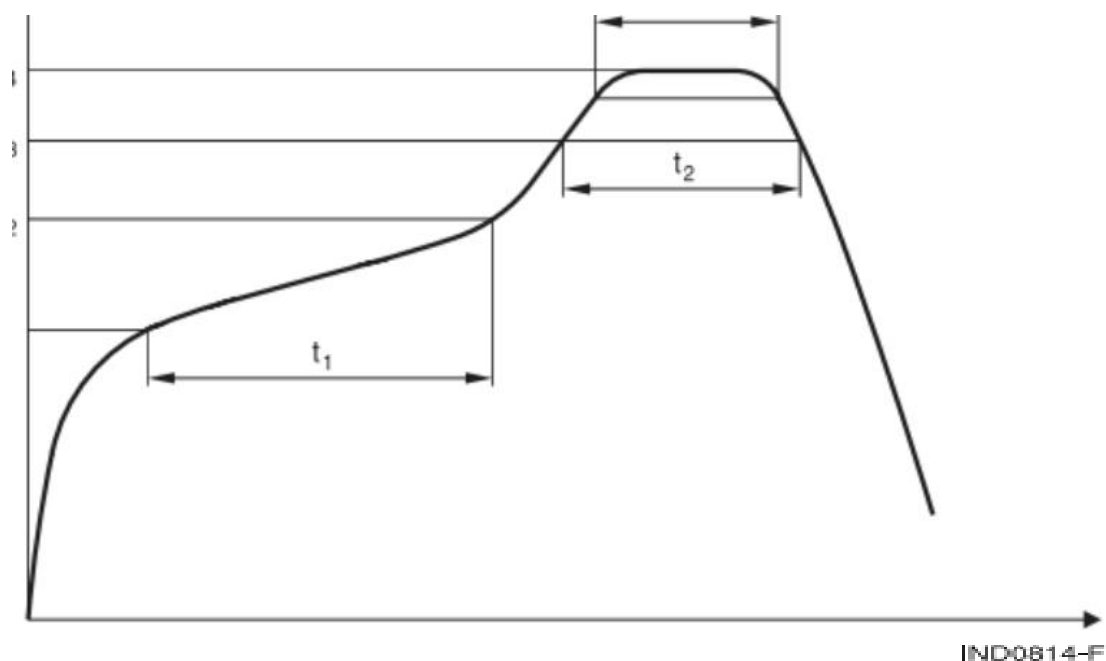
Dimensions in mm



Dimensions in m

Recommended reflow soldering curve

Pb-free solder material (based on JEDEC J-STD 020D)



T1 °C	T2 °C	T3 °C	T4 °C	T1 sec	T2 sec	T3 sec
150	200	217	245	<110	<90	20 ... 40

Max. time from +25 °C to T: 300 seconds

Max. 3 reflow cycles