FC-SCT5.0 –Series Current Sense Transformers

Height: 5.5mm Max

It is used as DC current transformer for various electronic device detection

Current Rating: up to 20A

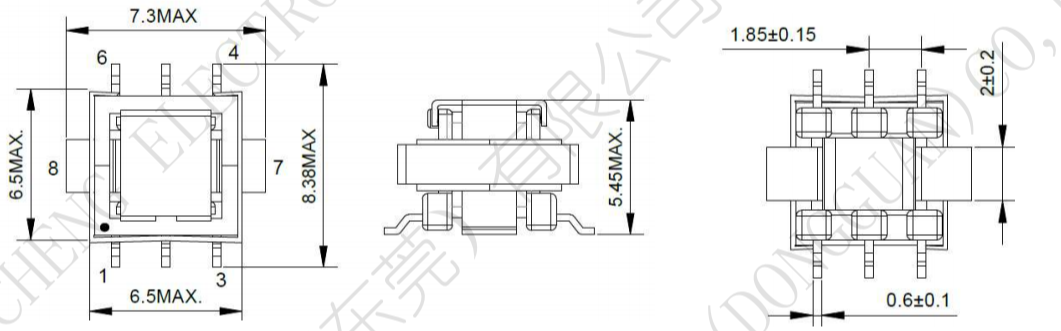
Frequency Range: 100 kHz, 0.1 Vrms

Low Primary DCR version

Ambient temperature -40° C to +85° C

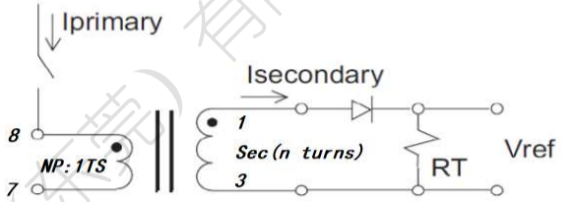
Storage temperature Component: -40° C to +125° C

1. Dimensions:mm

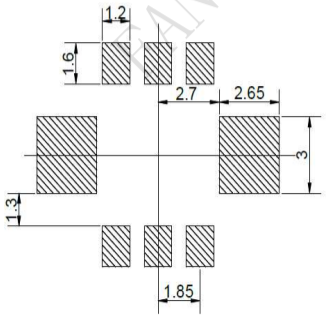


2.Schematic:

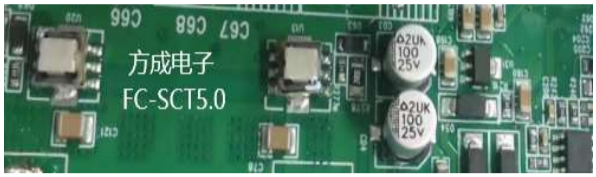
3.Application:



3.LAYOUT RECOMMENDATION



Rt (W) = Vref * N / (Ipeak_primary)



It is used as DC current transformer for various electronic device detection

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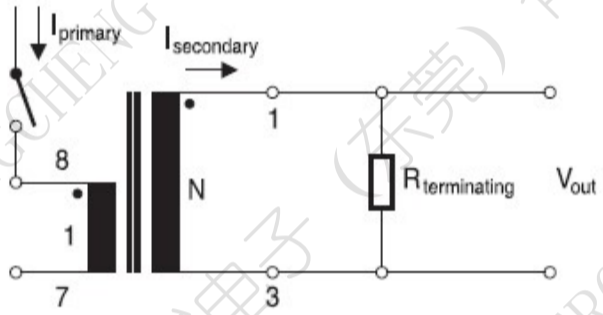
5. ELECTRIC CHARACTERICS)

Part Number	Turns Ration	Current Rating2 NP8-7,(A)	Secondary Inductance (mH min)	DCR (mΩ MAX)		Hipot (V_{RMS})
				Primary (8-7)	Secondary (1-3)	Np-Ns
FC-SCT5.0-1:20-20A	1:20	20	0.08	0.75	550	1500V
FC-SCT5.0-1:30-20A	1:30	20	0.18	0.75	870	1500V
FC-SCT5.0-1:40-20A	1:40	20	0.32	0.75	1140	1500V
FC-SCT5.0-1:50-20A	1:50	20	0.5	0.75	1500	1500V
FC-SCT5.0-1:60-20A	1:60	20	0.72	0.75	2250	1500V
FC-SCT5.0-1:70-20A	1:70	20	0.98	0.75	4750	1500V
FC-SCT5.0-1:100-20A	1:100	20	2.0	0.75	5500	1500V
FC-SCT5.0-1:125-20A	1:125	20	3.0	0.75	6500	1500V

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

6. Application circuit and pinning



$$B_{max} = \frac{V_{sense,\,max} \cdot \delta_{max}}{n_s \cdot A_e \cdot f_{osc}}$$

$$R_T = \frac{V_{sense,\,max} \cdot n_s}{I_{prim,\,max}}$$

With:1

B_{max} Maximum magnetic flux density in the ferrite core of the current sense transformer

$V_{sense,max}$ Maximum output voltage of the measurement signal $_{max}$ Maximum duty cycle

n_s Number of turns of the secondary winding of the current sense transformer

A_e Effective magnetic area of the ferrite core

f_{osc} Operating frequency of the switching operator IC

Typical value for A_e: 2.5 x 10_{-6} m_2

Typical B_{max}: 200 m

With:2

RT Resistance of burden resistor

Vsense,max Maximum output voltage of the measurement signal

ns Number of turns on the secondary side of the CT

Iprim,max Maximum primary current (peak current)

7. Temperature Rise vs Current