

FC-SCT5.0 –Series Current Sense Transformers

Height: 5.3mm Max

Footprint: 8.0mm x 6.0mm

Current Rating: up to 20A

Frequency Range: 100 kHz, 0.1 Vrms

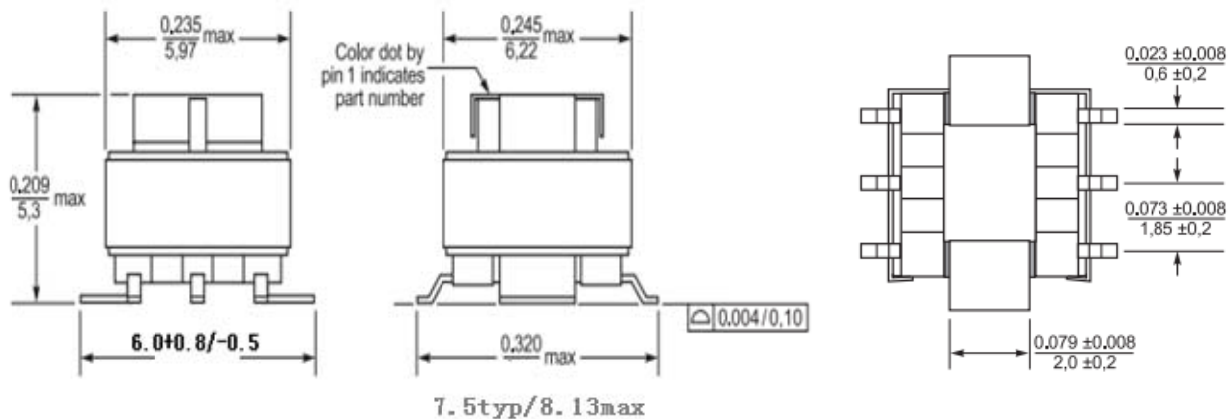
Low Primary DCR version

Ambient temperature -40°C to $+85^{\circ}\text{C}$

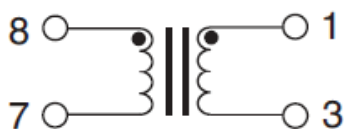
Storage temperature Component: -40°C to $+125^{\circ}\text{C}$



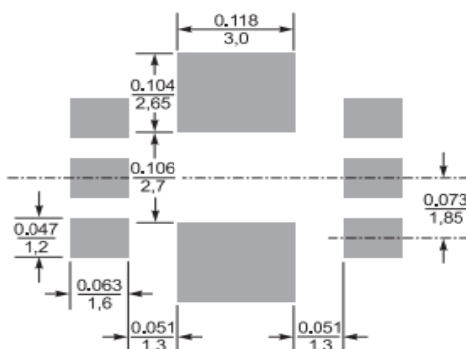
1. Dimensions:mm



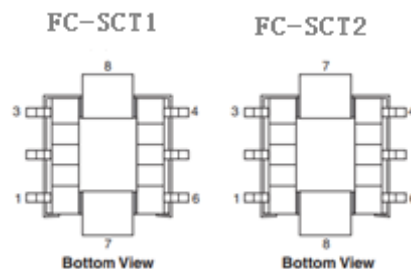
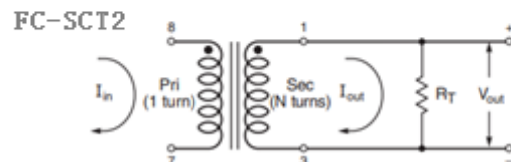
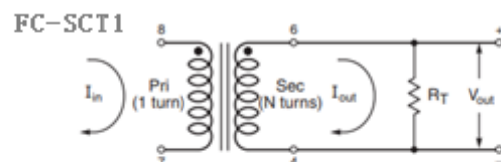
2.Schematic:



4.LAYOUT RECOMMENDATION



3. Schematic:

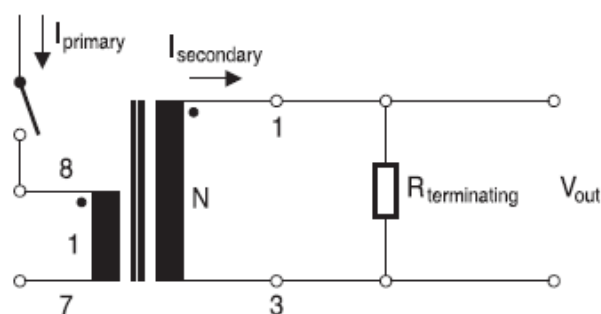


5. ELECTRIC CHARACTERISTICS)

Part Number	Turns Ration	Current Rating ₂ NP,(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



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

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

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 δ_{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 m²

Typical B_{max}: 200 m

With:2

R_T Resistance of burden resistor

V_{sense, max} Maximum output voltage of the measurement signal

n_s Number of turns on the secondary side of the CT

I_{prim, max} Maximum primary current (peak current)

7. Temperature Rise vs Current

