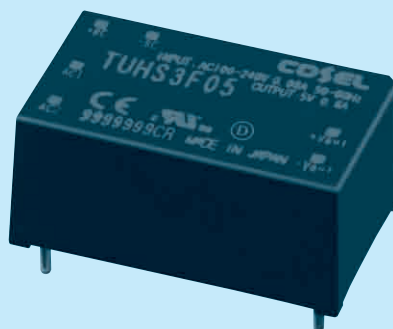


TUHS3

TUH S 3 F 05

① ② ③ ④ ⑤



- ① Series name
② Single output
③ Output wattage
④ Universal Input
⑤ Output voltage

□ Class II

* Avoid short circuit between +BC and -BC. It may cause the failure of inside components.

* To use TUHS, external components are required. Refer to the instruction manual for details.

MODEL	TUHS3F05	TUHS3F12	TUHS3F24
MAX OUTPUT WATTAGE[W]	3.00	3.00	3.12
DC OUTPUT	5V 0.6A	12V 0.25A	24V 0.13A

SPECIFICATIONS

	MODEL		TUHS3F05	TUHS3F12	TUHS3F24
INPUT	VOLTAGE[V]		AC85 - 264 1 φ DC120 - 370		
	CURRENT[A]	ACIN 100V	0.08typ (Io=100%)		
		ACIN 200V	0.05typ (Io=100%)		
	FREQUENCY[Hz]		50/60 (47 - 63)		
	EFFICIENCY[%]	ACIN 100V	79typ	81typ	81typ
		ACIN 200V	78typ	79typ	79typ
INRUSH CURRENT		Limited by external components			
LEAKAGE CURRENT[ma]		0.40/0.75 max (ACIN100V/240V , 60Hz, Io=100% , According to IEC60950-1)			
OUTPUT	VOLTAGE[V]		5	12	24
	CURRENT[A]		0.6	0.25	0.13
	LINE REGULATION[mV]		20max	48max	96max
	LOAD REGULATION[mV]		40max	100max	150max
	RIPPLE[mVp-p]	30 to 100% Load *1	120max	160max	200max
		0 to 30% Load AC85V - 240V *1	400max	480max	580max
	RIPPLE NOISE[mVp-p]	30 to 100% Load *1	160max	200max	240max
		0 to 30% Load AC85V - 240V *1	480max	560max	660max
	TEMPERATURE REGULATION[mV]	0 to +85℃	100max	180max	360max
		-40 to +85℃	150max	270max	480max
DRIFT[mV] *2		20max	48max	96max	
OUTPUT VOLTAGE SETTING[V]		4.90 - 5.30	11.40 - 12.60	23.00 - 25.00	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recover automatically		
	OVERVOLTAGE PROTECTION[V]		5.50 - 8.00	13.20 - 19.20	26.40 - 38.40
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-40 to +85℃ , 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100℃ , 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max		
	VIBRATION		10 - 55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN60950-1		
	CONDUCTED NOISE		Complies with FCC-B,VCCI-B,CISPR-B,EN55022-B *3		
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) (Not built-in to active filter)		
OTHERS	CASE SIZE/WEIGHT		28.7 × 12.7 × 17.5mm[1.13 × 0.50 × 0.69 inches] (W × H × D) / 15g max		
	COOLING METHOD		Convection / Forced air		

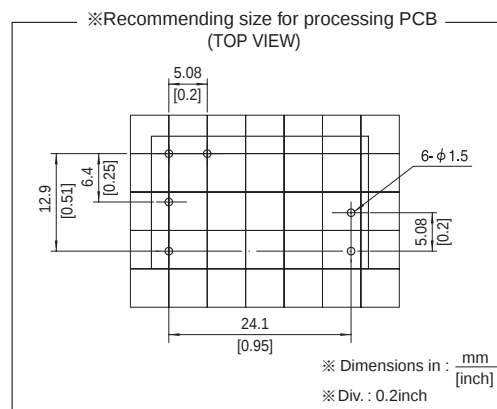
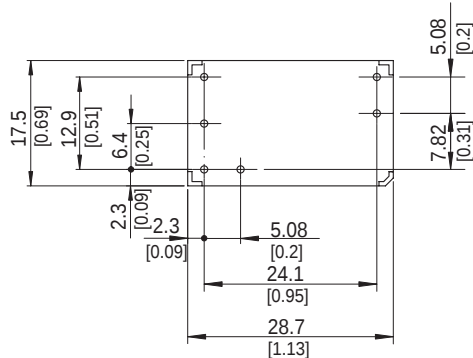
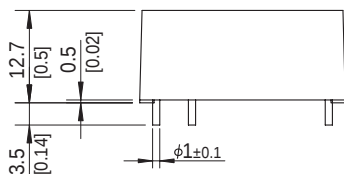
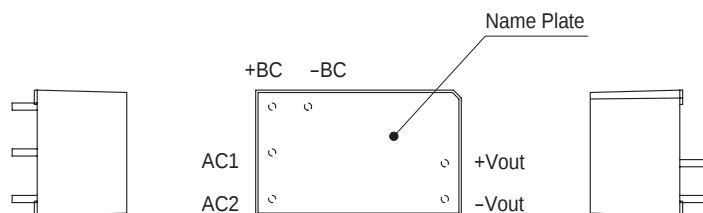
*1 Refer to instruction manual for measuring method of electric characteristics.

*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated value.

*3 Do not ground secondarily circuit, in case of a standard adapted.

* Measured with 18μF capacitor as Cbc.

External view



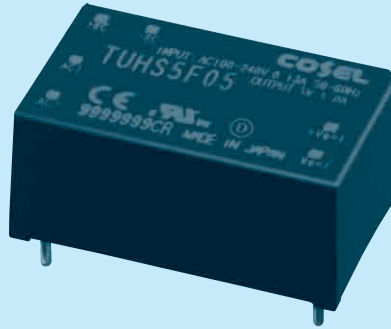
- ※ Tolerance : ± 0.5 [± 0.02]
- ※ Weight : 15g max
- ※ Case material : PBT
- ※ Pin material : Copper
- ※ Plating treatment of pin : Lead free plating
- ※ Dimensions in mm, []=inches

TUHS

TUHS5

TUH S 5 F 05

① ② ③ ④ ⑤



- ① Series name
② Single output
③ Output wattage
④ Universal Input
⑤ Output voltage

□ Class II

* Avoid short circuit between +BC and -BC. It may cause the failure of inside components.
* To use TUHS, external components are required. Refer to the instruction manual for details.

MODEL	TUHS5F05	TUHS5F12	TUHS5F24
MAX OUTPUT WATTAGE[W]	5.00	5.40	5.28
DC OUTPUT	5V 1A	12V 0.45A	24V 0.22A

SPECIFICATIONS

	MODEL		TUHS5F05	TUHS5F12	TUHS5F24
INPUT	VOLTAGE[V]		AC85 - 264 1ϕ DC120 - 370		
	CURRENT[A]	ACIN 100V	0.13typ (Io=100%)		
		ACIN 200V	0.08yp (Io=100%)		
	FREQUENCY[Hz]		50/60 (47 - 63)		
	EFFICIENCY[%]	ACIN 100V	78typ	82typ	83typ
		ACIN 200V	79typ	82typ	83typ
INRUSH CURRENT			Limited by external components		
LEAKAGE CURRENT[ma]			0.40/0.75 max (ACIN100V/240V , 60Hz, Io=100% , According to IEC60950-1)		
OUTPUT	VOLTAGE[V]		5	12	24
	CURRENT[A]		1	0.45	0.22
	LINE REGULATION[mV]		20max	48max	96max
	LOAD REGULATION[mV]		40max	100max	150max
	RIPPLE[mVp-p]	30 to 100% Load *1	120max	160max	200max
		0 to 30% Load AC85V - 240V *1	400max	480max	580max
	RIPPLE NOISE[mVp-p]	30 to 100% Load *1	160max	200max	240max
		0 to 30% Load AC85V - 240V *1	480max	560max	660max
	TEMPERATURE REGULATION[mV]	0 to +80℃	100max	180max	360max
		-40 to +80℃	150max	270max	480max
DRIFT[mV] *2		20max	48max	96max	
OUTPUT VOLTAGE SETTING[V]		4.90 - 5.30	11.40 - 12.60	23.00 - 25.00	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recover automatically		
	OVERVOLTAGE PROTECTION[V]		5.50 - 8.00	13.20 - 19.20	26.40 - 38.40
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-40 to +85℃ , 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100℃ , 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max		
	VIBRATION		10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT		196.1m/s ² (20G), 11ms, once each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN60950-1		
	CONDUCTED NOISE		Complies with FCC-B,VCCI-B,CISPR-B,EN55022-B *3		
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) (Not built-in to active filter)		
OTHERS	CASE SIZE/WEIGHT		28.7 × 12.7 × 17.5mm[1.13 × 0.50 × 0.69 inches] (W × H × D) / 15g max		
	COOLING METHOD		Convection / Forced air		

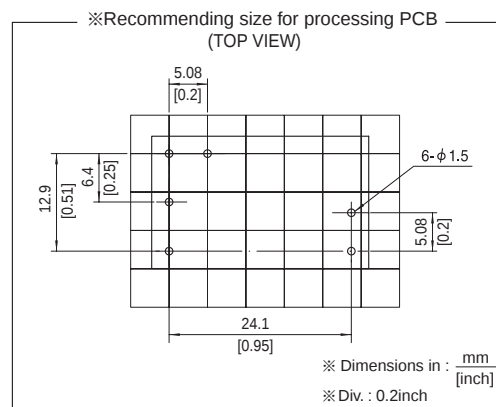
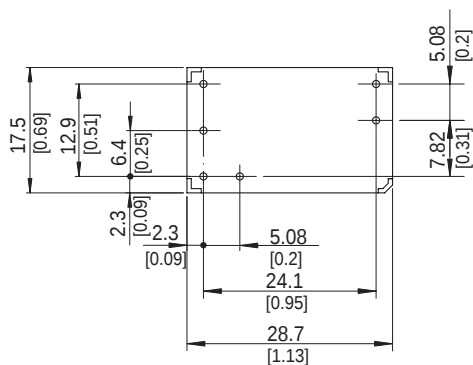
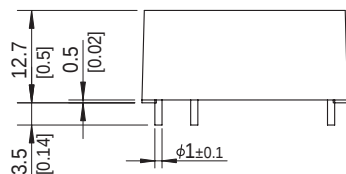
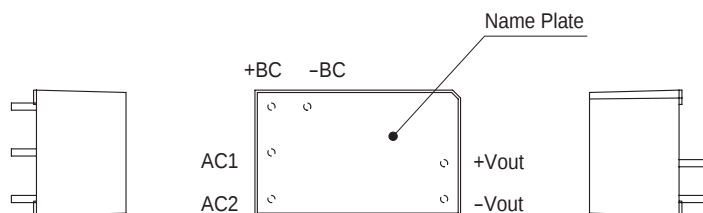
*1 Refer to instruction manual for measuring method of electric characteristics.

*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃ , with the input voltage held constant at the rated value.

*3 Do not ground secondly circuit, in case of a standard adapted.

* Measured with 22μF capacitor as Cbc.

External view

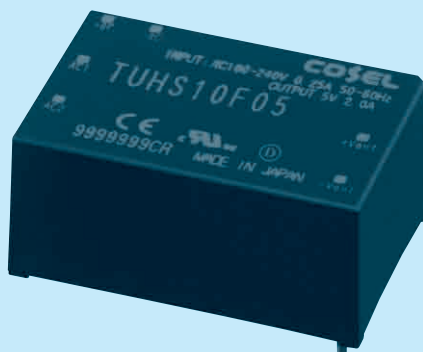


- ※ Tolerance : ± 0.5 [± 0.02]
- ※ Weight : 15g max
- ※ Case material : PBT
- ※ Pin material : Copper
- ※ Plating treatment of pin : Lead free plating
- ※ Dimensions in mm, []=inches

TUHS10

TUH S 10 F 05

① ② ③ ④ ⑤



① Series name
② Single output
③ Output wattage
④ Universal Input
⑤ Output voltage

□ Class II

*Avoid short circuit between +BC and -BC. It may cause the failure of inside components.
*To use TUHS, external components are required. Refer to the instruction manual for details.

MODEL	TUHS10F05	TUHS10F12	TUHS10F24
MAX OUTPUT WATTAGE[W]	10.00	10.80	10.80
DC OUTPUT	5V 2A	12V 0.9A	24V 0.45A

SPECIFICATIONS

	MODEL		TUHS10F05	TUHS10F12	TUHS10F24
INPUT	VOLTAGE[V]		AC85 - 264 1 ϕ DC120 - 370		
	CURRENT[A]	ACIN 100V	0.25typ (Io=100%)		
		ACIN 200V	0.14typ (Io=100%)		
	FREQUENCY[Hz]		50/60 (47 - 63)		
	EFFICIENCY[%]	ACIN 100V	81typ	85typ	86typ
		ACIN 200V	82typ	85typ	87typ
INRUSH CURRENT			Limited by external components		
LEAKAGE CURRENT[ma]			0.40/0.75 max (ACIN100V/240V , 60Hz, Io=100% , According to IEC60950-1)		
OUTPUT	VOLTAGE[V]		5	12	24
	CURRENT[A]		2	0.9	0.45
	LINE REGULATION[mV]		20max	48max	96max
	LOAD REGULATION[mV]		40max	100max	150max
	RIPPLE[mVp-p]	30 to 100% Load *1	120max	160max	200max
		0 to 30% Load AC85V - 240V *1	400max	480max	580max
	RIPPLE NOISE[mVp-p]	30 to 100% Load *1	160max	200max	240max
		0 to 30% Load AC85V - 240V *1	480max	560max	660max
	TEMPERATURE REGULATION[mV]	0 to +70℃	100max	180max	360max
		-40 to +70℃	150max	270max	480max
DRIFT[mV]		*2 20max	48max	96max	
OUTPUT VOLTAGE SETTING[V]		4.90 - 5.30	11.40 - 12.60	23.00 - 25.00	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recover automatically		
	OVERVOLTAGE PROTECTION[V]		5.50 - 8.00	13.20 - 19.20	26.40 - 38.40
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-40 to +85℃ , 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100℃ , 20 - 95%RH (Non condensing) , 9,000m (30,000 feet) max		
	VIBRATION		10 - 55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN60950-1		
	CONDUCTED NOISE		Complies with FCC-B,VCCI-B,CISPR-B,EN55022-B *3		
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) (Not built-in to active filter)		
OTHERS	CASE SIZE/WEIGHT		33.0×15.0×22.0mm[1.3×0.59×0.86 inches] (W×H×D) / 25g max		
	COOLING METHOD		Convection / Forced air		

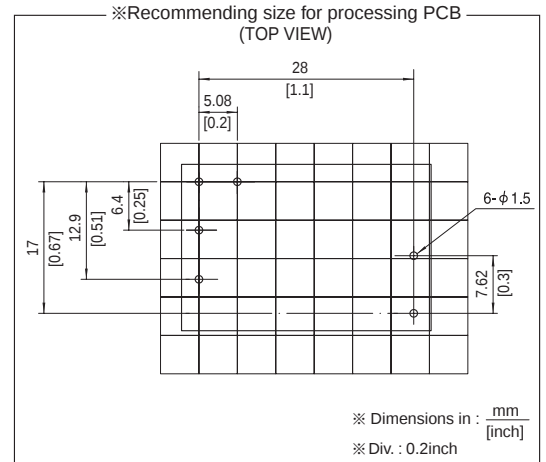
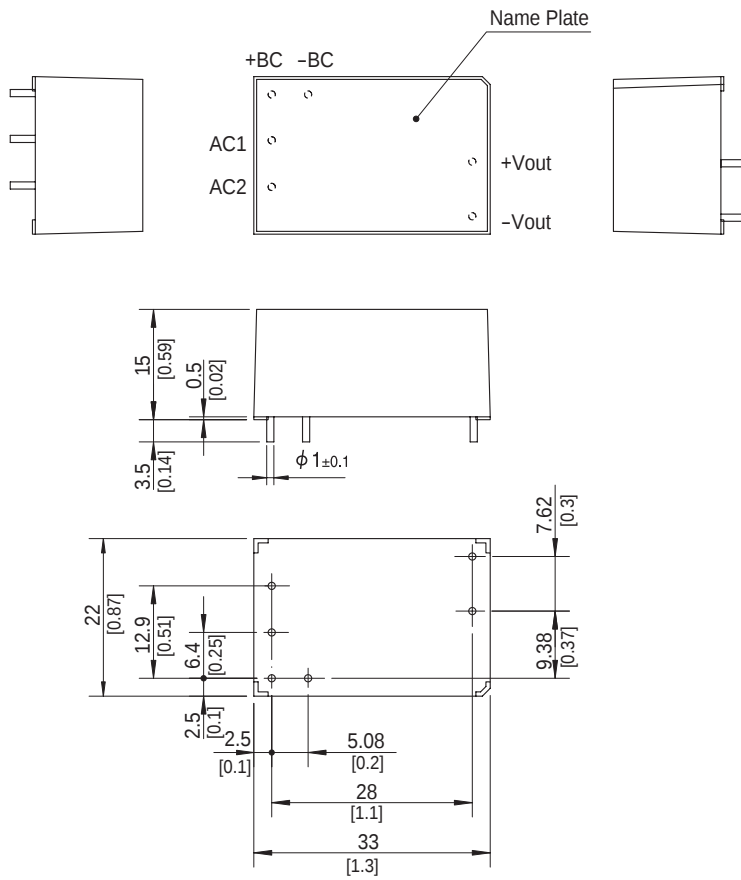
*1 Refer to instruction manual for measuring method of electric characteristics.

*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃ , with the input voltage held constant at the rated value.

*3 Do not ground second circuit, in case of a standard adapted.

* Measured with 47μF capacitor as Cbc.

External view

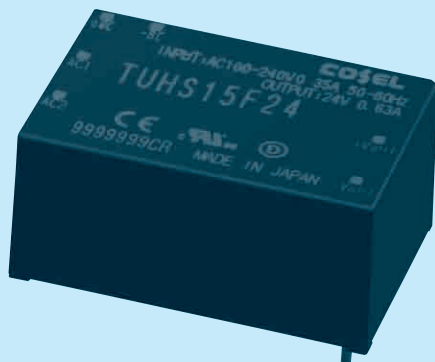


- ※ Tolerance : ± 0.5 [± 0.02]
- ※ Weight : 25g max
- ※ Case material : PBT
- ※ Pin material : Copper
- ※ Plating treatment of pin : Lead free plating
- ※ Dimensions in mm, []=inches

TUHS15

TUH S 15 F 12

① ② ③ ④ ⑤



- ① Series name
② Single output
③ Output wattage
④ Universal Input
⑤ Output voltage

□ Class II

* Avoid short circuit between +BC and -BC. It may cause the failure of inside components.

* To use TUHS, external components are required. Refer to the instruction manual for details.

MODEL	TUHS15F12	TUHS15F24
MAX OUTPUT WATTAGE[W]	15.00	15.12
DC OUTPUT	12V 1.25A	24V 0.63A

SPECIFICATIONS

	MODEL	TUHS15F12	TUHS15F24
INPUT	VOLTAGE[V]	AC85 - 264 1 φ DC120 - 370	
	CURRENT[A]	ACIN 100V	0.35typ (Io=100%)
		ACIN 200V	0.18typ (Io=100%)
	FREQUENCY[Hz]	50/60 (47 - 63)	
	EFFICIENCY[%]	ACIN 100V	85typ
		ACIN 200V	85typ
OUTPUT	INRUSH CURRENT	Limited by external components	
	LEAKAGE CURRENT[ma]	0.40/0.75 max (ACIN100V/240V, 60Hz, Io=100%, According to IEC60950-1)	
	VOLTAGE[V]	12	24
	CURRENT[A]	1.25	0.63
	LINE REGULATION[mV]	48max	96max
	LOAD REGULATION[mV]	100max	150max
	RIPPLE[mVp-p]	30 to 100% Load *1	160max
		0 to 30% Load AC85V - 240V *1	480max
	RIPPLE NOISE[mVp-p]	30 to 100% Load *1	200max
		0 to 30% Load AC85V - 240V *1	560max
PROTECTION CIRCUIT AND OTHERS	TEMPERATURE REGULATION[mV]	0 to +50℃	180max
		-40 to +50℃	270max
	DRIFT[mV]	*2 48max	96max
	OUTPUT VOLTAGE SETTING[V]	11.40 - 12.60	23.00 - 25.00
ISOLATION	OVERCURRENT PROTECTION	Works over 105% of rating and recover automatically	
	OVERVOLTAGE PROTECTION[V]	13.20 - 19.20	26.40 - 38.40
ENVIRONMENT	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)	
	OPERATING TEMP., HUMID. AND ALTITUDE	-40 to +85℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max	
	STORAGE TEMP., HUMID. AND ALTITUDE	-40 to +100℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max	
	VIBRATION	10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60minutes each along X, Y and Z axis	
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s ² (20G), 11ms, once each along X, Y and Z axis	
	AGENCY APPROVALS	UL60950-1, C-UL (CSA60950-1), EN60950-1	
	CONDUCTED NOISE	Complies with FCC-B, VCCI-B, CISPR-B, EN55022-B *3	
OTHERS	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 (Class A) (Not built-in to active filter)	
	CASE SIZE/WEIGHT	33.0×15.0×22.0mm[1.3×0.59×0.86 inches] (W×H×D) / 25g max	
	COOLING METHOD	Convection / Forced air	

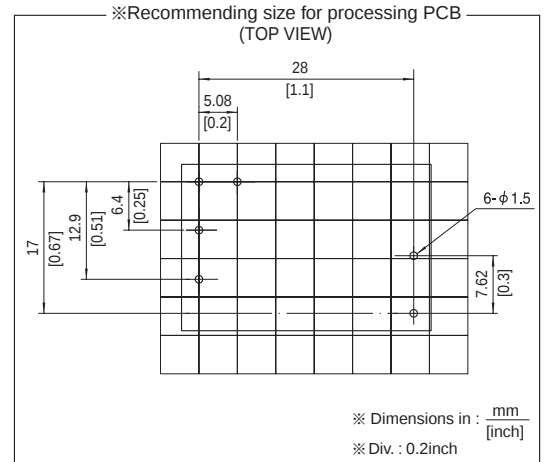
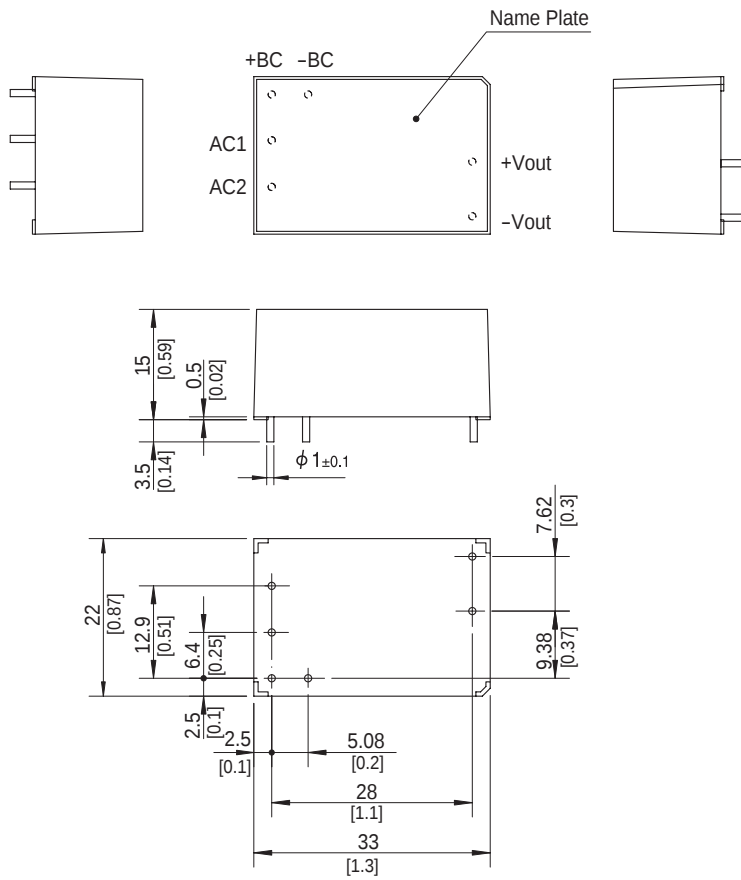
*1 Refer to instruction manual for measuring method of electric characteristics.

*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated value.

*3 Do not ground secondarily circuit, in case of a standard adapted.

* Measured with 68μF capacitor as Cbc.

External view

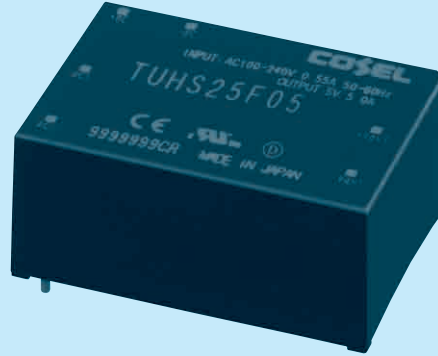


- ※ Tolerance : ± 0.5 [± 0.02]
- ※ Weight : 25g max
- ※ Case material : PBT
- ※ Pin material : Copper
- ※ Plating treatment of pin : Lead free plating
- ※ Dimensions in mm, []=inches

TUHS25

TUH S 25 F 05

① ② ③ ④ ⑤



- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal Input
- ⑤ Output voltage

□ Class II

* Avoid short circuit between +BC and -BC. It may cause the failure of inside components.
* To use TUHS, external components are required. Refer to the instruction manual for details.

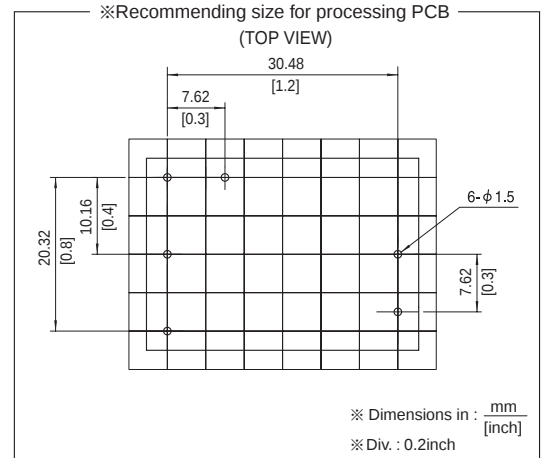
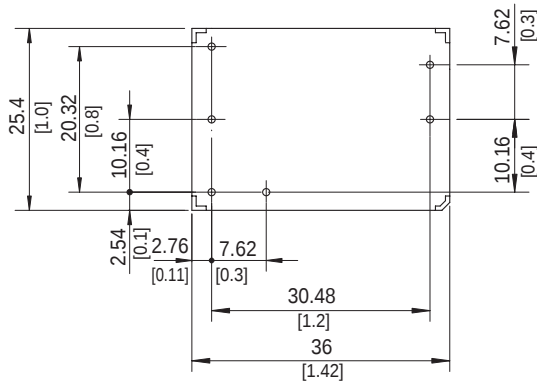
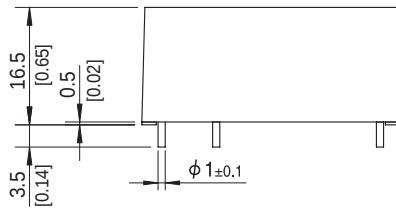
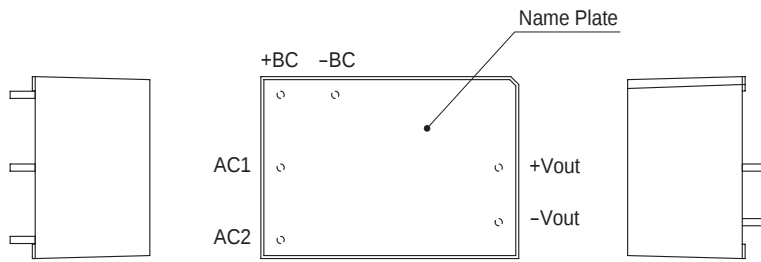
MODEL	TUHS25F05	TUHS25F12	TUHS25F24
MAX OUTPUT WATTAGE[W]	25.00	25.20	26.40
DC OUTPUT	5V 5A	12V 2.1A	24V 1.1A

SPECIFICATIONS

	MODEL		TUHS25F05	TUHS25F12	TUHS25F24
INPUT	VOLTAGE[V]		AC85 - 264 1 φ DC120 - 370		
	CURRENT[A]	ACIN 100V	0.55typ (Io=100%)		
		ACIN 200V	0.35typ (Io=100%)		
	FREQUENCY[Hz]		50/60 (47 - 63)		
	EFFICIENCY[%]	ACIN 100V	87typ	88typ	89typ
		ACIN 200V	87typ	88typ	90typ
INRUSH CURRENT		Limited by external components			
LEAKAGE CURRENT[ma]		0.40/0.75 max (ACIN100V/240V , 60Hz, Io=100% , According to IEC60950-1)			
OUTPUT	VOLTAGE[V]		5	12	24
	CURRENT[A]		5	2.1	1.1
	LINE REGULATION[mV]		20max	48max	96max
	LOAD REGULATION[mV]		40max	100max	150max
	RIPPLE[mVp-p]	30 to 100% Load *1	120max	160max	200max
		0 to 30% Load AC85V - 240V *1	400max	480max	580max
	RIPPLE NOISE[mVp-p]	30 to 100% Load *1	160max	200max	240max
		0 to 30% Load AC85V - 240V *1	480max	560max	660max
	TEMPERATURE REGULATION[mV]	0 to +50℃	100max	180max	360max
		-40 to +50℃	150max	270max	480max
DRIFT[mV] *2		20max	48max	96max	
OUTPUT VOLTAGE SETTING[V]		4.90 - 5.30	11.40 - 12.60	23.00 - 25.00	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recover automatically		
	OVERVOLTAGE PROTECTION[V]		5.50 - 8.00	13.20 - 19.20	26.40 - 38.40
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)		
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-40 to +85℃, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max		
	VIBRATION		10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT		196.1m/s ² (20G), 11ms, once each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL60950-1, C-UL (CSA60950-1), EN60950-1		
	CONDUCTED NOISE		Complies with FCC-B,VCCI-B,CISPR-B,EN55022-B *3		
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 (Class A) (Not built-in to active filter)		
OTHERS	CASE SIZE/WEIGHT		36.0×16.5×25.4mm[1.42×0.65×1.0 inches] (W×H×D) / 40g max		
	COOLING METHOD		Convection / Forced air		

*1 Refer to instruction manual for measuring method of electric characteristics.
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated value.
*3 Do not ground secondly circuit, in case of a standard adapted.
* Measured with 120μF capacitor as Cbc.

External view



- ※ Tolerance : ± 0.5 [± 0.02]
- ※ Weight : 40g max
- ※ Case material : PBT
- ※ Pin material : Copper
- ※ Plating treatment of pin : Lead free plating
- ※ Dimensions in mm, []=inches

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