

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

  - (§) Optional
    T: with Mounting hole
    (\$\phi 3.4 \text{ thru})

- \*Avoid short circuit between +BC and -BC. It may cause the failure of inside components.
- \*Keep TRM open, if output voltage adjustment is not necessary.

MODEL	TUNS50F05	TUNS50F12	TUNS50F24
MAX OUTPUT WATTAGE[W]	50.0	50.4	50.4
DC OUTPUT	5V 10A	12V 4.2A	24V 2.1A

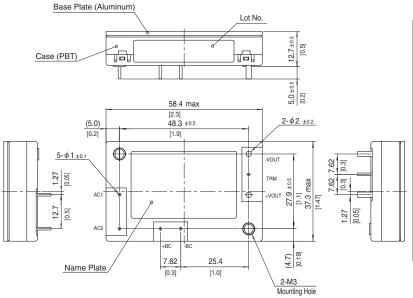
## **SPECIFICATIONS**

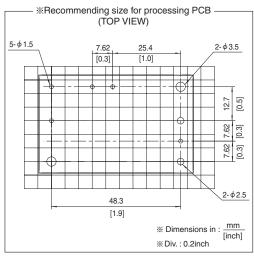
VOLTAGE[V]		MODEL		TUNS50F05	TUNS50F12	TUNS50F24	
NPUT   FREQUENCY[Hz]   ACIN 200V   0.35typ (10=100%)   50/60 (47 - 63)   84typ   84typ   84typ   86typ   84typ   86typ   84typ   86typ   84typ   86typ   84typ   84t	VOLTAGE[V]		AC85 - 264 1 φ (Please refer to the instruction manual, 6.5 Derating)				
NPUT   FREQUENCY[Hz]	INPUT	CUDDENTIAL	ACIN 100V	0.67typ (lo=100%)			
NPUT   ACIN 100V   79typ   83typ   84typ   86typ		CORRENT[A]	ACIN 200V	0.35typ (lo=100%)			
ACIN 2007   ACIN 2007   B4typ   B4typ   B6typ		FREQUENCY[Hz]		71 ( )			
ACM 2007   811yp   841yp   861yp		EFFICIENCY[9/1	ACIN 100V	79typ	83typ	84typ	
NRUSH CURRENT   Limited by external components (Thermistor)		EFFICIENCT[%]	ACIN 200V	81typ	84typ	86typ	
NAME   Section   Name   Name		DOWED EACTOR (In-100%)	ACIN 100V	0.95typ			
LEAKAGE CURRENT[mA]   0.75 max (60Hz, According to IEC60950-1)     2		POWER FACTOR (IO=100%)	ACIN 200V	0.90typ			
VOLTAGE[V]   5		INRUSH CURRENT		Limited by external components (Thermistor)			
CURRENT[A]		LEAKAGE CURREN	T[mA]	0.75 max (60Hz, According to IEC60950-1)			
LINE REGULATION[mV]   10max   24max   48max   48max		VOLTAGE[V]		5			
COAD REGULATION[mV]   10max   24max   48max   120max   120max   120max   120max   120max   120max   120max   150max		CURRENT[A]		10	4.2	2.1	
Note		LINE REGULATION[	mV]	10max	24max	48max	
NOUTPUT         40 to 0 € ** 120 max         150 max         250 max         260 max         260 max         240 max         240 max         480 max         90 max         Fixed (TRM pin open), adjustable by external resistor or external signal         4.50 - 6.00         10.80 - 13.20         21.60 - 26.40         20 max         10.90 - 5.13         11.91 - 12.29         23.62 - 24.38         OVERCURRENT PROTECTION (V)         6.30 - 7.00         13.90 - 16.35         27.60 - 32.40         Colspan="4">Cols		LOAD REGULATION	[mV]	10max	24max	48max	
OUTPUT  RIPPLE NOISE[mVp-p]			0 to +100℃ *1	80max	120max	120max	
Not provided   Not		RIPPLE[mVp-p]	-40 to 0°C *1	120max	150max	150max	
RIPPLE NOISE[mVp-p]			0 to 15% Load*1	200max	280max	380max	
RIPPLE NOISE[mVp-p]	ITDLIT		0 to +100°C *1	120max	150max	150max	
TEMPERATURE REGULATION[m]	OUTPUT	RIPPLE NOISE[mVp-p]	-40 to 0°C *1	200max	200max	250max	
TEMPERATURE REGULATION  W    40 to +100C   100 max   240 max   480 max   90 max			0 to 15% Load * 1	280max	360max	460max	
QUIPUT VOLTAGE ADJUSTMENT RANGE[V]   OUTPUT VOLTAGE SETTING[V]   4.97 - 5.13   11.91 - 12.29   23.62 - 24.38     PROTECTION CIRCUIT AND OTHERS   OVERVOLTAGE PROTECTION[V]   6.30 - 7.00   13.90 - 16.35   27.60 - 32.40     REMOTE SENSING   OUTPUT VOLTAGE SETTING[V]   A.97 - 5.13   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OVERVOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.90 - 16.35   A.90 - 32.40     PROTECTION CIRCUIT AND OTHERS   OUTPUT VOLTAGE PROTECTION[V]   C.30 - 7.00   A.90 - 16.35   A.		TEMPERATURE REGULATION(m)/1	0 to +65°C	50max	120max	240max	
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]			-40 to +100℃	100max	240max	480max	
OUTPUT VOLTAGE ADJUSTMENT RANGE(V)   4.50 - 6.00   10.80 - 13.20   21.60 - 26.40		DRIFT[mV] *2				90max	
1.50 - 6.00   10.80 - 13.20   21.60 - 26.40		OUTPUT VOLTAGE ADJUSTMEN	IT RANGE[V]				
PROTECTION CIRCUIT AND OTHERS  OVERCURRENT PROTECTION Works over 105% of rating and recovers automatically  OVERVOLTAGE PROTECTION[V] 6.30 - 7.00 13.90 - 16.35 27.60 - 32.40  REMOTE SENSING Not provided		OUTFUT VOLIAGE ADJUSTMENT HANGE[V]			-		
PROTECTION CIRCUIT AND OTHERS         OVERVOLTAGE PROTECTION[V]         6.30 - 7.00         13.90 - 16.35         27.60 - 32.40           REMOTE SENSING         Not provided		OUTPUT VOLTAGE SETTING[V]				23.62 - 24.38	
CIRCUIT AND OTHERS	OTECTION	OVERCURRENT PROTECTION					
OTHERS REMOTE SENSING Not provided					13.90 - 16.35	27.60 - 32.40	
REMOTE ON/OFF Not provided		REMOTE SENSING					
<b>INPUT-OUTPUT</b> AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)	ISOLATION						
		INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)			
		OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)			
7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7	ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-40 to +100°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max			
ENVIRONMENT		STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100°C, 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		VIBRATION		10 - 55Hz, 49.0m/s² (5G), 3minutes period, 60minutes each along X, Y and Z axis			
t / / · · · · · · · · · · · · · · · · ·				196.1m/s² (20G), 11ms, once each along X, Y and Z axis			
SAFETY AND AGENCY APPROVALS UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178					· · · · · · · · · · · · · · · · · · ·		
	SE REGULATION			Complies with IEC61000-3-2 (Class A) *3			
OTHERS	THERS	CASE SIZE/WEIGHT		58.4×12.7×37.3mm [2.3×0.5×1.47 inches] (W×H×D) / 80g max			
COOLING METHOD Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)		COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)			

- Refer to instruction manual for measuring method of electric characteristics.
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output. Please contact us about another class.



# **External view**





- % Tolerance: ±0.3 [±0.012]
  % Weight: 80g max
  % Dimensions in mm, [ ]=inches
  % Mounting hole screwing torque: 0.49N · m (5.0kgf · cm) max

\*Providing heat sink as option



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

- (§) Optional
  T: with Mounting hole
  (\$\phi 3.4 \text{ thru})

- \*Avoid short circuit between +BC and -BC. It may cause the failure of inside components.
- \*Keep TRM open, if output voltage adjustment is not necessary.
- \*If remote sensing is not necessary, connect between +Vout & +S and between -Vout & -S.

MODEL	TUNS100F05	TUNS100F12	TUNS100F24
MAX OUTPUT WATTAGE[W]	100.0	100.8	100.8
DC OUTPUT	5V 20A	12V 8.4A	24V 4.2A

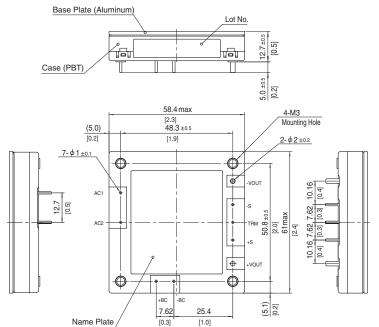
## **SPECIFICATIONS**

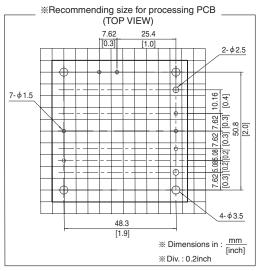
	MODEL		TUNS100F05	TUNS100F12	TUNS100F24	
	VOLTAGE[V]		AC85 - 264 1 φ (Please refer to the instruction manual, 6.5 Derating)			
INPUT	CURRENT[A]	ACIN 100V	1.3typ (lo=100%)			
	CURRENT[A]	ACIN 200V	0.7typ (lo=100%)			
	FREQUENCY[Hz]		50/60 (47 - 63)			
	EFFICIENCY[%]	ACIN 100V	82typ	83typ	84typ	
	EFFICIENCY[%]	ACIN 200V	85typ	85typ	86typ	
	POWER FACTOR (Io=100%)	ACIN 100V	0.95typ			
	POWER FACTOR (IO=100%)	ACIN 200V	71			
	INRUSH CURRENT		Limited by external components (Thermistor)			
	LEAKAGE CURREN	T[mA]	0.75 max (60Hz, According to IEC60950-1)			
	VOLTAGE[V]		5	12	24	
	CURRENT[A]		20	8.4	4.2	
	LINE REGULATION[	mV]	10max	24max	48max	
	LOAD REGULATION		10max	24max	48max	
		0 to +100℃ *1	80max	120max	120max	
	RIPPLE[mVp-p]	-40 to 0°C *1	120max	150max	150max	
		0 to 15% Load*1	160max	240max	240max	
OUTPUT		0 to +100°C *1	120max	150max	150max	
ООТРОТ	RIPPLE NOISE[mVp-p]	-40 to 0°C *1	200max	200max	250max	
		0 to 15% Load * 1	240max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +65°C	50max	120max	240max	
		-40 to +100℃	100max	240max	480max	
	DRIFT[mV] *2		Zomax	40max	90max	
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		Fixed (TRM pin open), adjustable by external resistor or external signal			
			4.50 - 6.00	10.80 - 13.20	21.60 - 26.40	
	OUTPUT VOLTAGE SETTING[V]		4.97 - 5.13	11.91 - 12.29	23.62 - 24.38	
OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
PROTECTION CIRCUIT AND	OVERVOLTAGE PROTECTION[V]		6.30 - 7.00	13.90 - 16.35	27.60 - 32.40	
OTHERS	REMOTE SENSING		Provided			
	REMOTE ON/OFF		Not provided			
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)			
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)			
	OUTPUT-FG		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15 $^{\circ}$ C)			
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE		-40 to +100°C (On aluminum base plate), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max			
	STORAGE TEMP.,HUMID.AND ALTITUDE		-40 to +100°C, 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	AGENCY APPROVAL		UL60950-1, C-UL (CSA60950-1), EN60950-1, EN50178			
NOISE REGULATIONS	HARMONIC ATTENU	ARMONIC ATTENUATOR Complies with IEC61000-3-2 (Class A) *3				
OTHERS			58.4×12.7×61.0mm [2.3×0.5×2.4 inches] (W×H×D) / 120g max  Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)			
OTHERS	CASE SIZE/WEIGHT		<u> </u>	, ,		

- Refer to instruction manual for measuring method of electric characteristics.
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.
- Please contact us about another class.



# **External view**





- % Tolerance : ±0.3 [±0.012]
  % Weight : 120g max
  % Dimensions in mm, [ ]=inches
- \* Mounting hole screwing torque : 0.49N · m (5.0kgf · cm) max