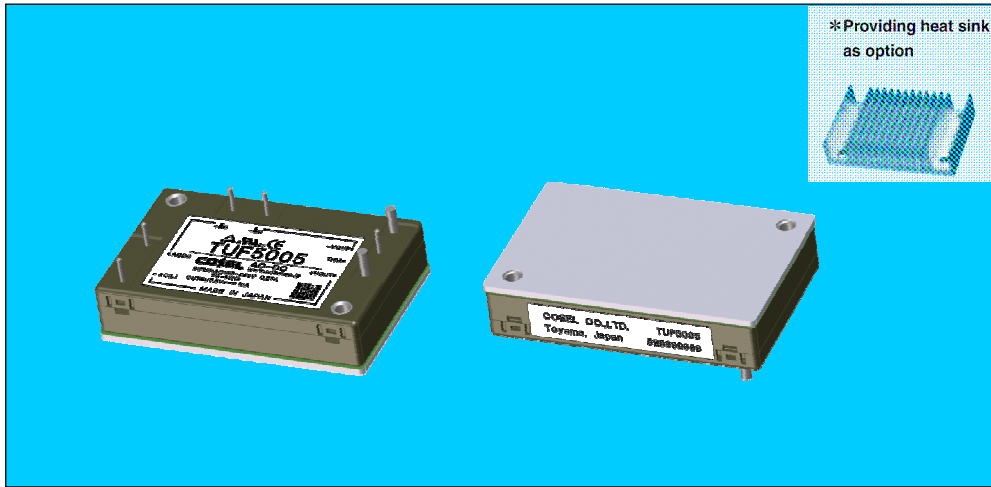


TUF50

TU **F** **50** **05**
 ① ② ③ ④

UL US CE (LVD) RoHS

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



MODEL	TUF5005	TUF5012	TUF5015	TUF5024
MAX OUTPUT WATTAGE[W]	50.0	50.4	51.0	50.4
DC OUTPUT	5V 10A	12V 4.2A	15V 3.4A	24V 2.1A

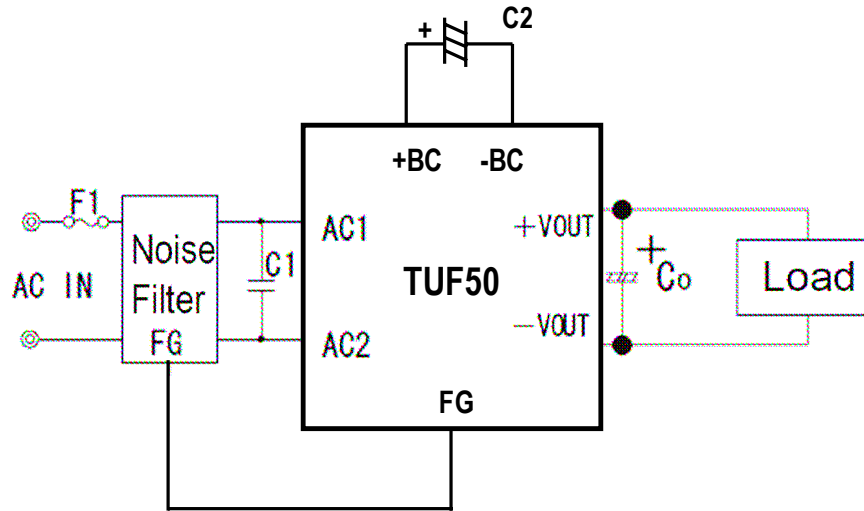
SPECIFICATIONS

	MODEL	TUF5005	TUF5012	TUF5015	TUF5024	
INPUT	VOLTAGE[V]	AC85 - 264 1φ				
	CURRENT[A]	ACIN 100V	0.67typ (Io=100%)			
		ACIN 200V	0.36typ (Io=100%)			
	FREQUENCY[Hz]	50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	84.0 typ	86.0 typ	86.0 typ	86.0 typ
		ACIN 200V	84.0 typ	86.0 typ	86.0 typ	86.0 typ
INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%) (At cold start) (Ta=25°C)				
	ACIN 200V	30typ (Io=100%) (At cold start) (Ta=25°C)				
OUTPUT	VOLTAGE[V]	5	12	15	24	
	CURRENT[A]	10	4.2	3.4	2.1	
	LINE REGULATION[mV]	10max	24max	30max	48max	
	LOAD REGULATION[mV]	10max	24max	30max	48max	
	RIPPLE[mVp-p]	0 to 100°C *1	80max	120max	120max	120max
		-40 to 0°C *1	120max	150max	150max	150max
		0 to 15%Load *1	160max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to 100°C *1	120max	150max	150max	150max
		-40 to 0°C *1	200max	200max	200max	250max
		0 to 15%Load *1	240max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to 65°C	50max	120max	150max	240max
		-40 to 100°C	100max	240max	300max	480max
DRIFT[mV]	*2	20max	40max	60max	90max	
START-UP TIME[ms]	500max(AC230V, Io=100%)					
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	Fixed (TRM pin open), adjustable by external VR or external voltage					
OUTPUT VOLTAGE SETTING[V]	4.50 - 6.00	10.8 - 13.2	13.5 - 16.5	21.6 - 26.4		
	4.97 - 5.13	11.91 - 12.29	14.76 - 15.24	23.62 - 24.38		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.6 - 34.8	
	REMOTE SENSING	Nothing				
	REMOTE ON/OFF	Nothing				
ISOLATION	INPUT-OUTPUT	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)				
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15°C)				
	OUTPUT-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15°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(10,000feet)max				
	STORAGE TEMP., HUMID. AND ALTITUDE	-40 to +100°C, 20 - 95%RH(Non condensing), 9,000m(30,000feet)max				
	VIBRATION	10 - 55Hz, 49.0m/s ² (5G), 3minutes period, 60 minutes each along X, Y and Z axis				
	IMPACT	196.1m/s ² (20G), 11ms, once each along X, Y and Z axis				
SAFETY	AGENCY APPROVALS	UL60950-1, C-UL(CSA60950-1), EN60950-1, Complies with EN50155				
OTHERS	CASE SIZE/WEIGHT	58.4 × 12.7 × 37.3mm (WXHxD) / 60g max				
	COOLING METHOD	Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)				

*1 Ripple and ripple noise is measured by using measuring board. Refer to the manual

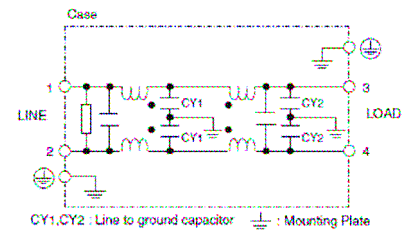
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25 °C, with the input voltage held constant at the rated input/output.

Connection for Standard Use



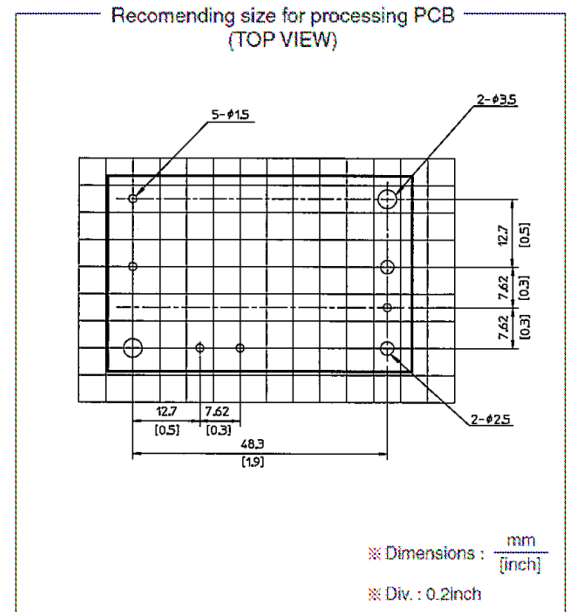
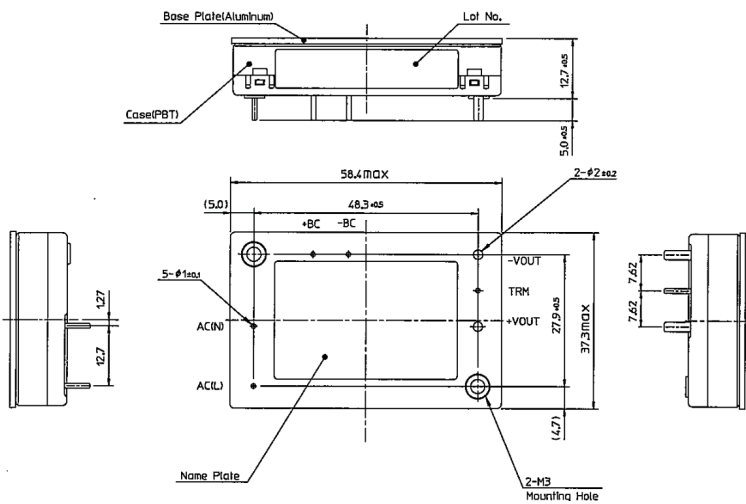
*External Parts

- F1 : Input Fuse
- C1 : Input Capacitor
- C2 : Holdup Capacitor
- Co : Output Capacitor



Noise Filter

External View



※ Dimensions : $\frac{\text{mm}}{[inch]}$
 ※ Div. : 0.2inch

- ※ Tolerance : ± 0.3
- ※ Weight : 100g or less
- ※ Dimensions in mm.
- ※ Mounting hole screwing torque : $0.49N \cdot m$ (5.0kgf \cdot cm) max