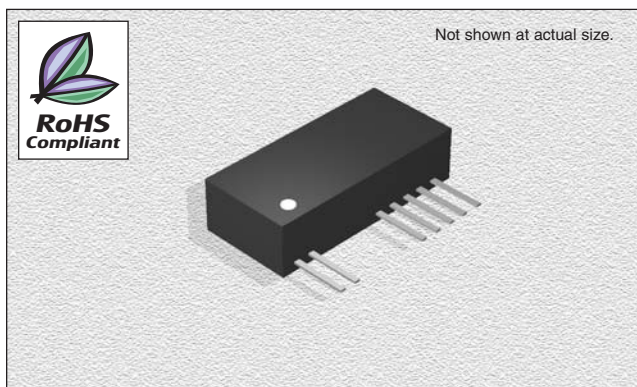


## CTDD2709SF-T1K-1 Series

### Wide Input Isolated & Regulated

### 1W Output, Twin Output



## SPECIFICATIONS

Part Number	Vin Nom. (VDC)	Input Range (VDC)	Vin Max.* (VDC)	Vo1,Vo2 (VDC)	Io1, Io2 Max. (mA)	Io1, Io2 Min. (mA)	Effi. Typ. (%)
CTDD2709SF-050505-T1K-1	5	4.5-9.0	11	5	100	10	63
CTDD2709SF-050909-T1K-1	5	4.5-9.0	11	9	55	6	65
CTDD2709SF-051212-T1K-1	5	4.5-9.0	11	12	42	5	66
CTDD2709SF-051515-T1K-1	5	4.5-9.0	11	15	33	4	66
CTDD2709SF-120505-T1K-1	12	9.0-18	22	5	100	10	71
CTDD2709SF-120909-T1K-1	12	9.0-18	22	9	55	6	75
CTDD2709SF-121212-T1K-1	12	9.0-18	22	12	42	5	77
CTDD2709SF-121515-T1K-1	12	9.0-18	22	15	33	4	79
CTDD2709SF-150505-T1K-1	15	12-24	30	5	100	10	75
CTDD2709SF-150909-T1K-1	15	12-24	30	9	55	6	78
CTDD2709SF-151212-T1K-1	15	12-24	30	12	42	5	80
CTDD2709SF-151515-T1K-1	15	12-24	30	15	33	4	81
CTDD2709SF-240505-T1K-1	24	18-36	40	5	100	10	75
CTDD2709SF-240909-T1K-1	24	18-36	40	9	55	6	78
CTDD2709SF-241212-T1K-1	24	18-36	40	12	42	5	80
CTDD2709SF-241515-T1K-1	24	18-36	40	15	33	4	81
CTDD2709SF-480505-T1K-1	48	36-72	80	5	100	10	75
CTDD2709SF-480909-T1K-1	48	36-72	80	9	55	6	77
CTDD2709SF-481212-T1K-1	48	36-72	80	12	42	5	80
CTDD2709SF-481515-T1K-1	48	36-72	80	15	33	4	81

\*If Input voltage above specified may cause permanent damage to the device

## FEATURES

- Efficiency:** To 83%
- Temperature Range:** -40°C to +85°C
- Package:** UL94-V0
- Isolation:** 1KVDC
- Miscellaneous:** Wide (2:1) Input Range. No heat sink required. Industry Standard Pinout. Twin Output. Custom service available. **Samples available.**

## CHARACTERISTICS

- Output Short Circuit Protection:** Continuous
- Temperature Rise at Full Load:** 30°C (Typ.)
- Cooling:** Free air convection
- No Load, Power Consumption:** 100mW (typical)
- Operating Temperature Range:** -40°C to +85°C
- Storage Temperature Range:** -55°C to +125°C
- Lead Temperature:** 300°C (1.5mm from case for 10 seconds)
- Storage Humidity Range:** ≤ 95%
- Case Material:** Plastic (UL94-V0)
- MTBF:** >3,500,000 hours
- Miscellaneous:** **RoHS Compliant.**

## ISOLATION SPECIFICATIONS

Item	Test Condition	MIN	TYP	MAX	Units
Isolation Voltage	Flash tested for 1 minute	1000			VDC
Isolation Resistance	Test at 500VDC	1000			MΩ

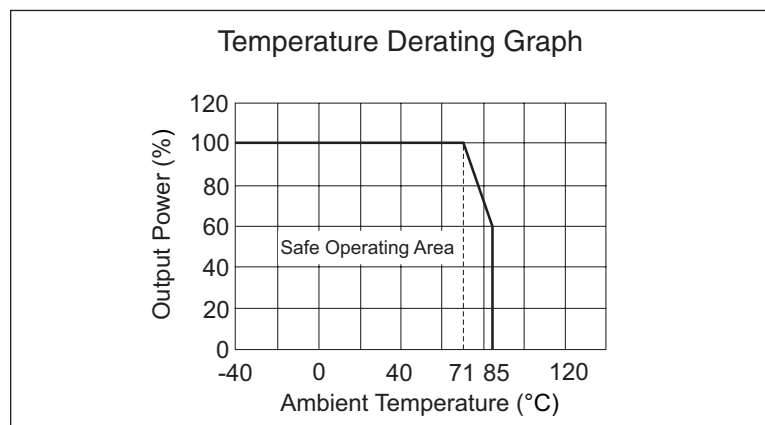
## OUTPUT SPECIFICATIONS

Item	Test Condition	MIN	TYP	MAX	Units
1W Output Power		0.1		1	W
Output voltage accuracy	Refer to Recommended Circuit		±1	±3	%
Load regulation	From 10% to 100% load		±0.5	±1	%
Line regulation	Input Voltage from low to high		±0.2	±0.5	%
Temperature drift (Vout)	Refer to Temp. Derating Graph			0.03	%/°C
Ripple	20Hz to 300kHz Bandwidth		40	60	mVp-p
Noise	DC-20MHz Bandwidth		80	150	mVp-p
Switching frequency	100% load, nominal input voltage	80		200	KHz
Switching frequency	10% load, nominal input voltage	250		600	KHz

Note:

1. All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output unless otherwise specified.

## TYPICAL CHARACTERISTICS



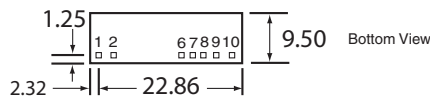
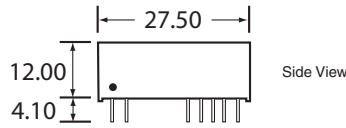
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## CTDD2709SF-T1K-1 Series

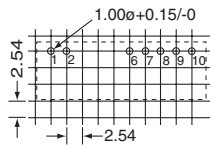
Wide Input Isolated & Regulated  
1W Output, Twin Output

### OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS

CTDD2709SF-T1K-1 Package



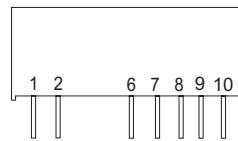
CTDD2709SF-T1K-1 Footprint



Note: All Pins on a 2.54m pitch; all pin diameters are 0.50mm; all dimensions in mm.

### PIN CONNECTIONS

Pin	Function
1	GND
2	Vin
6	Voi
7	0V1
8	CS
9	0V2
10	V02



### RECOMMENDED CIRCUIT

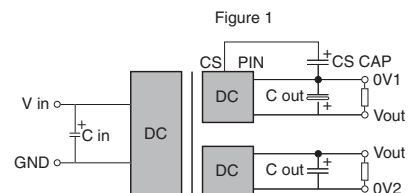
All the CTDD2709SF-T1K-1 Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (See figure 1). If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high (See table 2). If you want to use the products in high EMI, please choose our metal packaged products.

External Capacitor Table (table 2)

CS Capacitor Table (table 1)

Vout	5V	9V	12V	15V
CS	47µF-100µF		22µF-47µF	

Vin	C in	C out (0+70°C)	C out (-40+85°C)
5V & 12V	100µF	100µF (electrolytic capacitor)	47µF (tantalum capacitor)
24V & 48V	10µF		



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