



## 3T16WE\_1.5RP Series

3W - Single/Dual Output DC-DC Converter - Wide Input - Isolated & Regulated

### DC-DC Converter

3 Watt

- ⊕ 2:1 input voltage range
- ⊕ Operating temperature: -40°C ~ +85°C
- ⊕ 1500VDC isolation
- ⊕ Internal SMD construction
- ⊕ MTBF >1,000,000 hours
- ⊕ No external component required
- ⊕ Short circuit protection (SCP)
- ⊕ Industry standard pinout
- ⊕ RoHS Compliance

Introducing our new high-reliability DC-DC converter 3T16WE\_1.5RP series for demanding applications. Engineered to deliver consistent performance, this converter features a versatile 2:1 input voltage range and operates reliably across a wide temperature span from -40°C to +85°C. Its reinforced 1500VDC isolation ensures safety and electrical integrity, even in harsh industrial environments. With a robust internal SMD construction and an impressive MTBF exceeding 1,000,000 hours, it offers outstanding long-term durability and minimal maintenance requirements. The design requires no external components, simplifying integration into your systems. Additional features include short circuit protection (SCP) for operational safety, an industry-standard pinout for easy replacement or upgrade, and full RoHS compliance to meet global environmental standards.



#### Common specifications

Short circuit protection:	Continuous, automatic recovery
Filter:	Capacitor
Cooling:	Free air convection
Operation temperature range:	-40°C – +85°C (with derating)
Storage temperature range:	-55°C – +125°C
Lead temperature:	300°C max, 1.5mm from case for 10 sec
Reflow Soldering Temperature:	Peak temp. ≤240°C, maximum duration time ≤60s at 217°C. For actual application, please refer to IPC/JEDEC J-STD-020D.1.
Storage humidity range:	< 95%
Case material:	DAP
MTBF:	>1,000,000 hours
Dimensions:	24.1 x 14.35 x 10.25mm
Weight:	3.9g

#### Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute and 1mA max	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

#### Output specifications

Item	Test condition	Min	Typ	Max	Units
Voltage tolerance	100% full load			±2	%
Line regulation	Regulated			±0.5	%
Load regulation	Regulated			±0.8	%
Transient response setting time	50% load step change		350		μs
Ripple & Noise	20MHz Bandwidth			100	mVp-p
Switching frequency	100% load, nominal input voltage		100		KHz

#### Example:

##### 3T16WE\_1205S1.5RP

3= 3Watt; T16= SMT16; W= Wide Input; E= Cost effective; 12Vin; 5Vout; S= Single Output; 1.5= 1.5kVDC; R= Regulated Output; P= Short Circuit Protection

#### Note:

- All specifications measured at Ta = 25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
- In this datasheet, all the test methods of indications are based on corporate standards.
- Only typical models listed, other models may be different, please contact our technical person for more details.

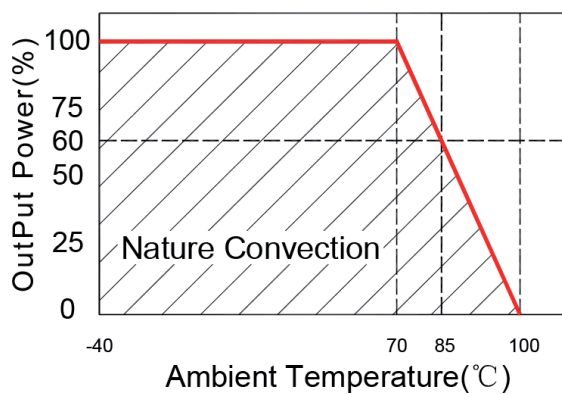
## 3T16WE\_1.5RP Series

3W - Single/Dual Output DC-DC Converter - Wide Input - Isolated & Regulated

### Product Selection Guide

Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Current [mA; max]	Efficiency [%; Max.]
	Nominal	Range			
3T16WE_0503S1.5RP	5	4.5-9	3.3	700	70
3T16WE_0505S1.5RP	5	4.5-9	5	600	75
3T16WE_0512S1.5RP	5	4.5-9	12	250	77
3T16WE_0515S1.5RP	5	4.5-9	15	200	75
3T16WE_1203S1.5RP	12	9-18	3.3	700	75
3T16WE_1205S1.5RP	12	9-18	5	600	79
3T16WE_1212S1.5RP	12	9-18	12	250	82
3T16WE_1215S1.5RP	12	9-18	15	200	82
3T16WE_2403S1.5RP	24	18-36	3.3	700	75
3T16WE_2405S1.5RP	24	18-36	5	600	80
3T16WE_2412S1.5RP	24	18-36	12	250	86
3T16WE_2415S1.5RP	24	18-36	15	200	87
3T16WE_4803S1.5RP	48	36-75	3.3	700	73
3T16WE_4805S1.5RP	48	36-75	5	600	78
3T16WE_4812S1.5RP	48	36-75	12	250	83
3T16WE_4815S1.5RP	48	36-75	15	200	83
3T16WE_0505D1.5RP	5	4.5-9	±5	±300	72
3T16WE_0512D1.5RP	5	4.5-9	±12	±125	74
3T16WE_0515D1.5RP	5	4.5-9	±15	±100	75
3T16WE_1205D1.5RP	12	9-18	±5	±300	72
3T16WE_1212D1.5RP	12	9-18	±12	±125	82
3T16WE_1215D1.5RP	12	9-18	±15	±100	80
3T16WE_2405D1.5RP	24	18-36	±5	±300	78
3T16WE_2412D1.5RP	24	18-36	±12	±125	82
3T16WE_2415D1.5RP	24	18-36	±15	±100	84
3T16WE_4805D1.5RP	48	36-75	±5	±300	78
3T16WE_4812D1.5RP	48	36-75	±12	±125	81
3T16WE_4815D1.5RP	48	36-75	±15	±100	82

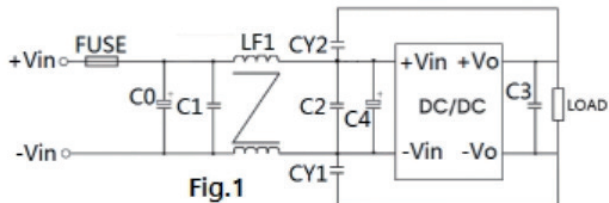
### Typical characteristics



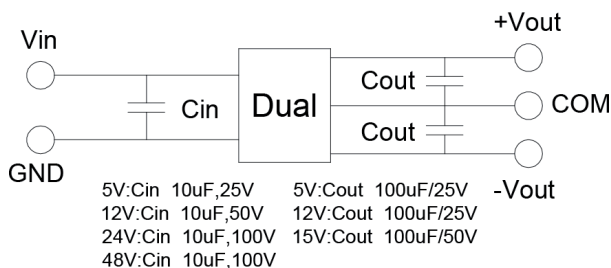
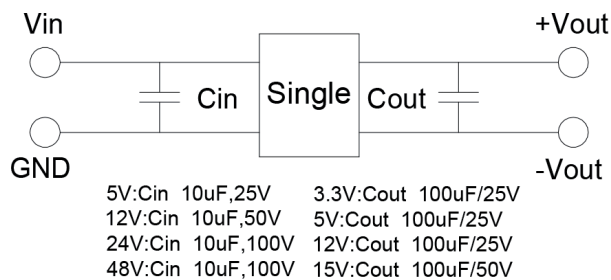
## 3T16WE\_1.5RP Series

3W - Single/Dual Output DC-DC Converter - Wide Input - Isolated & Regulated

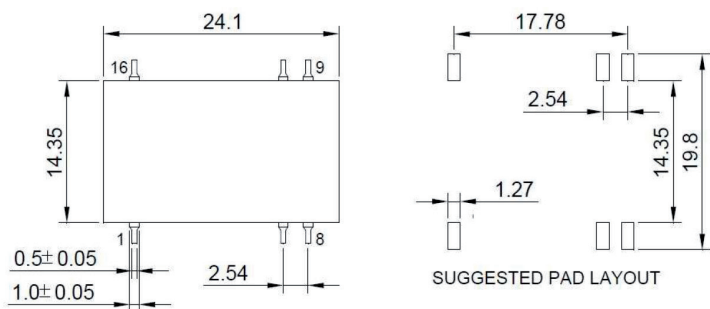
### EMC recommended circuit



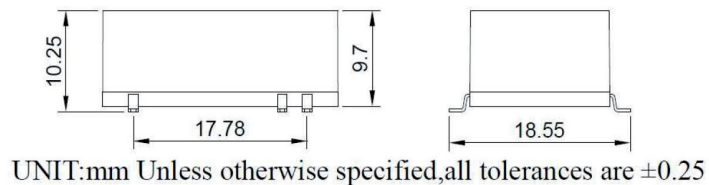
EMC recommended circuit value table		
EMI	C0C4	330μF /100V
	C1C2	10μF /100V
	CY1CY2	1nF/2kV
	C3	100μF /25V
	LF1	470μH



### Mechanical dimensions



Pin	Single	Dual
1	-Vin	-Vin
7	NC	NC
8	NC	Com
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin	+Vin



UNIT:mm Unless otherwise specified,all tolerances are ±0.25