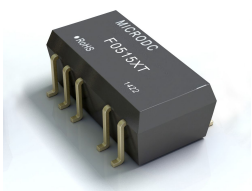
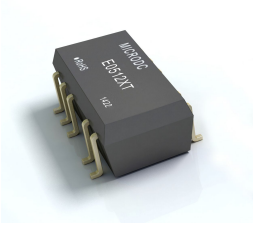
MICRODC
Industry Power Family

F-XT & E-XT Series

1W, FIXED INPUT, ISOLATED SINGLE/DUAL OUTPUT DC-DC CONVERTER





FEATURES

- Fixed Input Range
- Short Circuit Protection(automatic recovery)
- I/O isolation voltage 3000VDC
- Operating Temperature: -40℃～+85℃
- High efficiency up to 80%
- High accuracy of pin co-planarity
- Small SMD package with footprint
- Available in tape and reel package
- Single and dual output models
- Excellent load and line regulation

MODEL SELECTION

F(E)①05②05③X④T⑤

①Product Series ②Input Voltage
③Output Voltage ④Fixed Input
⑤SMD Package

APPLICATIONS

The F(E)-XT series are miniature,1W DC/DC converters with high isolation in a SMD package.With a new package design these converters are qualified for the higher temperatures requested by lead-free reflow solder processes.With the small footprint,these converters are the ideal solution for board level power distribution,mainly for applications in the industrial and telecom field. For automated SMD production lines the devices can be supplied in standard tape and reel package.

SELECTION GUIDE

Order code	Input		Output		Efficiency (%.Typ.)
	Voltage(VDC)		Voltage (VDC)	Current(mA)	
	Nominal	Range		Max.	
F0503XT	5	4.5-5.5	3.3	260	81
F0505XT	5	4.5-5.5	5	200	83
F0512XT	5	4.5-5.5	12	84	74
F0515XT	5	4.5-5.5	15	67	76
E0505XT	5	4.5-5.5	±5	±100	81
E0512XT	5	4.5-5.5	±12	±42	85
E0515XT	5	4.5-5.5	±15	±34	83
F1203XT	12	10.8-13.2	3.3	260	86
F1205XT	12	10.8-13.2	5	200	85
F1212XT	12	10.8-13.2	12	84	74
F1215XT	12	10.8-13.2	15	67	78
E1205XT	12	10.8-13.2	±5	±100	80
E1212XT	12	10.8-13.2	±12	±42	80
E1215XT	12	10.8-13.2	±15	±34	85
F2403XT	24	21.6-26.4	3.3	260	81
F2405XT	24	21.6-26.4	5	200	85
F2412XT	24	21.6-26.4	12	84	83
F2415XT	24	21.6-26.4	15	67	86
E2405XT	24	21.6-26.4	±5	±100	85
E2412XT	24	21.6-26.4	±12	±42	74
E2415XT	24	21.6-26.4	±15	±34	78

Case material:non-conductive plastic(UL 91V-0 rated)

Weight: 2.0g (0.07oz)

Input Specifications

Parameter	Conditions	Max.
Input current at full load	5 Vin models:	30mA/260mA typ.
	12Vin models:	15mA/110mA typ.
	24Vin models:	8mA/55mA typ.
Surge voltage (1sec. max.)	5 Vin models:	9V max.
	12 Vin models:	18V max.
	24 Vin models:	30V max.
Reverse voltage protection		0.3A max.
Input filter	internal capacitor	

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CE REACH

MICRODC RESERVES THE COPYRIGHT

Output Specifications

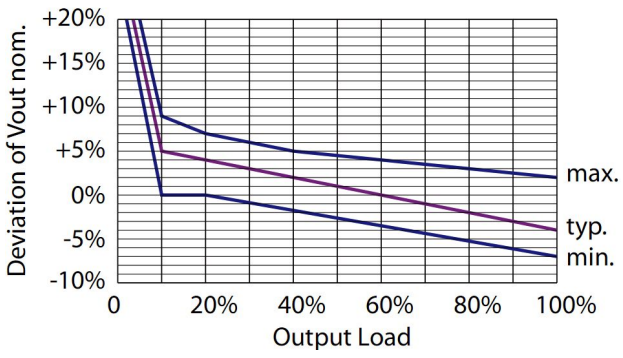
Parameter	Conditions	
Voltage set accuracy		see graphs below
Regulation	– Input variation	1.2 % / 1 % change Vin
	– Load variation	see graphs below
Voltage balance (dual output models, balanced load)		± 1.0% max.
Temperature coefficient		0.1 %/K
Ripple and noise (20 MHz Bandwidth)		100 mVp-p max.
Temperature coefficient		± 0.02%/K max.
Short circuit protection		limited 0.5 sec. max.
Capacitive load	3.3 VDC output models:	33µF max.
	5 VDC output models:	33µF max.
	12 VDC output models:	4.7µF max.
	15 VDC output models:	2.2µF max.
	±5 VDC output models:	10µF max.
	±12 VDC output models:	2.2µF max.
	±15 VDC output models:	2.2µF max.

General Specifications

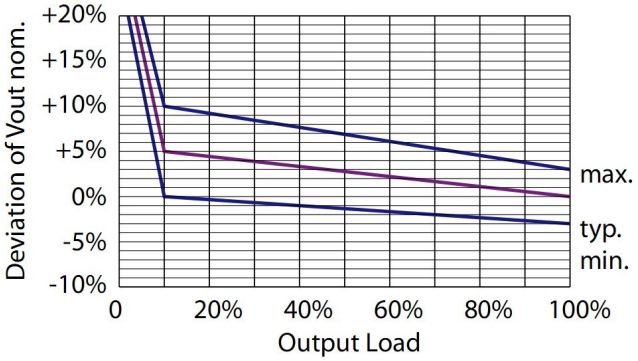
Parameter	Conditions	
Temperature ranges	- Operating	– 40 °C～+ 85 °C (no derating)
	- Case temperature	+95°C max.
	- Storage	– 55 °C～+ 125 °C
Load derating	(convection cooling)	4%/K above +75°C
Humidity (non condensing)		95 % rel. H max.
Reliability, calculated MTBF (MIL-HDBK-217F ground benign)		>2Mio h
Isolation voltage (60 sec)	- Input/Output	3000 VDC
Isolation capacity	- Input/Output(100kHz, 1V)	60 pF typ.
Isolation resistance	- Input/Output (500 VDC)	>1 GOhm
Switching frequency		50 to 150 kHz (depending on load)

Output voltage variation dependent on load (at nominal input voltage)

3.3 & 5.0 VDC models:



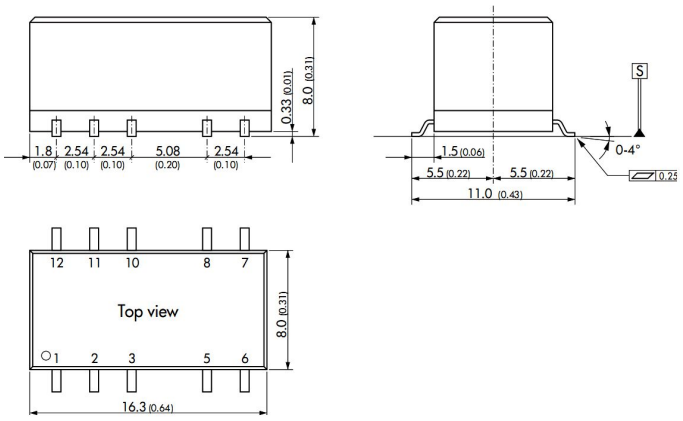
other models:



All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

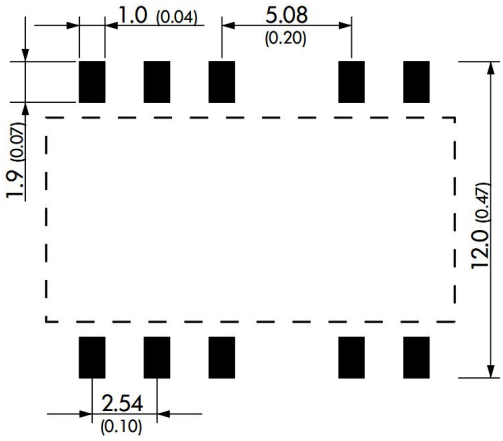
OUTLINE DIMENSIONS & FOOTPRINT DETAILS

MECHANICAL DIMENSIONS



Note:
Unit:mm[inch]
Pin section tolerances:±0.10mm[±0.004inch]
General tolerances:±0.25mm[±0.010inch]

SOLDER PAD DIMENSION



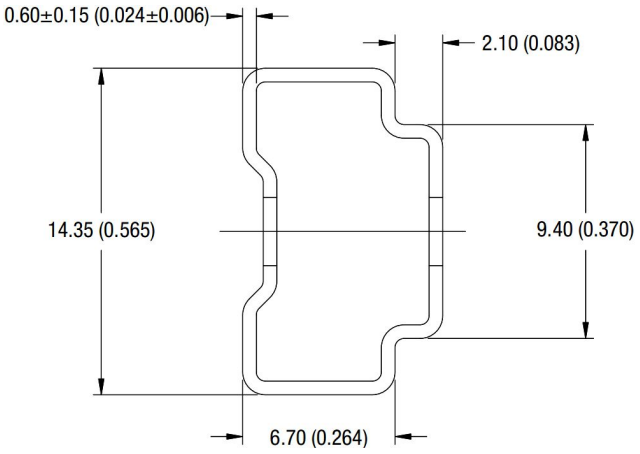
Dimensions in [mm], () = Inch
Pin pitch tolerances: ±0.13 (±0.005)
Other tolerances: ±0.25 (±0.01)

FOOTPRINT DETAILS

Pin	Single	Dual
1	-Vin(GND)	-Vin(GND)
2	+Vin	+Vin
3	No con.	No con.
5	-Vout	Common
6	No con.	-Vout
7	No con.	No con.
8	+Vout	+Vout
10	No con.	No con.
11	No con.	No con.
12	No con.	No con.

No con.=Pin to be isolated from circuitry

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm±0.5 (inches ±0.02).
Tube length : 475±2.0 (18.70±0.07). Tube Quantity :25

Specifcations can be changed any time without notice.
No parallel connection or plug and play.
Note:

1. The load shouldn't be less than 10%, otherwise ripple will increase dramatically.
2. Operation under 10% load will not damage the converter; However, they may not meet all specification listed.
3. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
4. In this datasheet, all the test methods of indications are based on corporate standards.
5. Only typical models listed, other models may be different, please contact our technical person for more details.