

**SELECTION GUIDE**

Order code	Input Voltage (V)	Output Voltage (V)	Output Current (MA)	Input Current (Rated Load) (MA)	Efficiency (%)	Isolation Capacitance (PF)	MTTF <sup>1</sup> (KHRS)
F0505XD	5	5	200	294	68	23	4241
F0509XD	5	9	111	267	75	30	3376
F0512XD	5	12	84	260	77	26	2555
F0515XD	5	15	67	256	78	27	1838
QF0505XS	5	5	50	72	70	20	1500
RF0505XS	5	5	100	125	80	21	1810
F0505XS	5	5	200	294	68	23	4241
F0509XS	5	9	111	267	75	30	3376
F0512XS	5	12	84	260	77	26	2555
F0515XS	5	15	67	256	78	27	1838
F1205XD	12	5	200	121	69	26	2664
F1209XD	12	9		113	74	35	2295
F1212XD	12	12		108	77	43	
F1215XD	12	15	67	108	77		

**OUTPUT CHARACTERISTICS**

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power <sup>1</sup>	TA=-40°C to 120°C	0.1		1	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High Vin to low Vin		1.0	1.2	%%

**INPUT CHARACTERISTICS**

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	Continuous operation, 5V input types	4.5	5	5.5	V
	Continuous operation, 12V input types	10.8	12	13.2	V
	Continuous operation, 15V input types	13.5	15	16.5	V
Reflected ripple current			20	40	mA p-p

**ISOLATION CHARACTERISTICS**

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Flash tested for 1 minute	3000			VDC
Resistance	Viso=1000VDC	10			GΩ

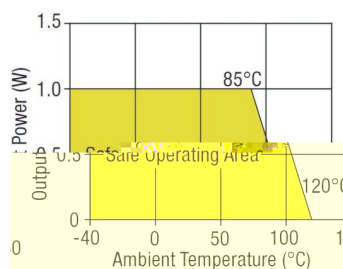
**GENERAL CHARACTERISTICS**

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	5V input types		120	135	kHz
	12V input types		150	170	kHz
	15V input types		90	110	kHz

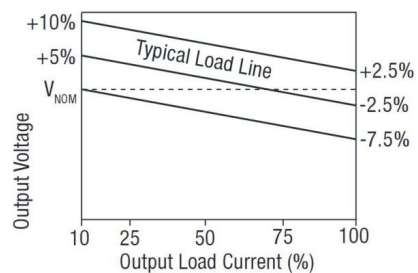
**TEMPERATURE CHARACTERISTICS**

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	-40		85	°C
Storage		-50		125	°C
Case Temperature above ambient	5V output types			28	°C
	All other output types			25	°C

**TEMPERATURE DERATING GRAPH**



**TOLERANCE ENVELOPE**



<sup>1</sup>. See derating graph.  
All specifications typical at TA=25° C, nominal input voltage and rated output current unless otherwise specified. Another 24V& 48V products, please inquire Our technical department!

## TECHNICAL NOTES

### ISOLATION VOLTAGE

"Hi Pot Test", "Flash Tested", "Withstand Voltage", "Dielectric Withstand Voltage" & "Isolation Test Voltage" are all terms that relate to the same thing, a test voltage. Applied for a specified time, across a component designed to provide electrical isolation, to verify the integrity of that isolation. Professional Power Module E\_X(S)D&F\_X(S)D series of DC/DC converters are all 100% production tested at their stated isolation voltage. This is 3KVDC for 1 minute.

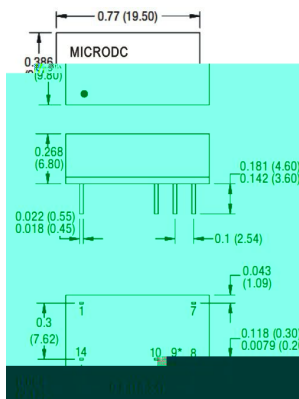
A question commonly asked is, "What is the continuous voltage that can be applied across the part in normal operation?"

For a part holding no specific agency approvals, such as the E&F series, both input and output should normally be maintained within SELV limits i.e. less than 42.4V peak, or 60VDC. The isolation test voltage represents a measure of immunity to transient voltages and the part should never be used as an element of a safety isolation system. The part could be expected to function correctly with several hundred volts offset applied continuously across the isolation barrier, but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these u

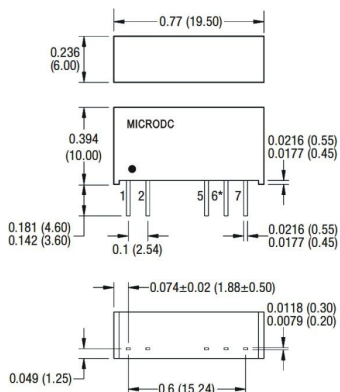
**PACKAGE SPECIFICATIONS**

**MECHANICAL DIMENSIONS**

**DIP package**



**SIP package**



\*Pin not fitted on single output variants.  
All dimensions in inches ±0.01(mm±)