



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

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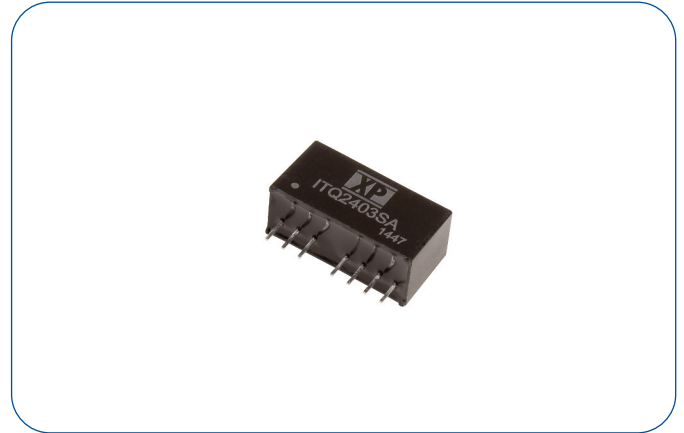
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6 Watts

- Single & Dual Outputs
- 4:1 Input Range
- Operating Temperature -40 °C to +100 °C
- 1500 VDC Isolation
- Optional 3000 VDC Version
- Fully Regulated Output
- No Minimum Load Required
- Remote On/Off
- 3 Year Warranty



Dimensions:

ITQ:
0.86 x 0.36 x 0.44" (21.9 x 9.2 x 11.1 mm)

Models & Ratings

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load ⁽²⁾	Efficiency	Model Number ⁽³⁾
			No Load	Full Load			
9-36 V	3.3 V	1500 mA	6 mA	261 mA	4700 µF	79%	ITQ2403SA
	5 V	1200 mA	6 mA	298 mA	2200 µF	84%	ITQ2405SA
	9 V	666 mA	6 mA	290 mA	1000 µF	86%	ITQ2409SA
	12 V	500 mA	6 mA	287 mA	470 µF	87%	ITQ2412SA
	15 V	400 mA	6 mA	287 mA	220 µF	87%	ITQ2415SA
	24 V	250 mA	6 mA	287 mA	100 µF	87%	ITQ2424SA
	±5 V	±600 mA	6 mA	298 mA	±330 µF	84%	ITQ2405S
	±12 V	±250 mA	6 mA	291 mA	±220 µF	86%	ITQ2412S
18-75 V	±15 V	±200 mA	6 mA	287 mA	±100 µF	87%	ITQ2415S
	3.3 V	1500 mA	6 mA	131 mA	4700 µF	79%	ITQ4803SA
	5 V	1200 mA	6 mA	151 mA	2200 µF	83%	ITQ4805SA
	9 V	666 mA	6 mA	147 mA	1000 µF	85%	ITQ4809SA
	12 V	500 mA	6 mA	144 mA	470 µF	87%	ITQ4812SA
	15 V	400 mA	6 mA	144 mA	220 µF	87%	ITQ4815SA
	24 V	250 mA	6 mA	144 mA	100 µF	87%	ITQ4824SA
	±5 V	±600 mA	6 mA	152 mA	±330 µF	82%	ITQ4805S
±12 V	±250 mA	6 mA	147 mA	±220 µF	85%	ITQ4812S	
±15 V	±200 mA	6 mA	145 mA	±100 µF	86%	ITQ4815S	

Notes

1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.
3. For optional 3000VDC isolation add suffix '-H' to model number.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9		36	VDC	24 V nominal
	18		75	VDC	48 V nominal
Input Filter	Capacitor				
Input Reflected Ripple			20/40	mA pk-pk	24/48 V input. Through 12 μ H inductor and 47 μ F capacitor
Input Surge			50	VDC for 100 ms	24 V models
			100	VDC for 100 ms	48 V models

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		24	VDC	See Models and Ratings table
Initial Set Accuracy			± 1	%	
Minimum Load	0			A	No minimum load required
Line Regulation			± 0.2	%	
Load Regulation			± 0.5	%	Single output
			± 1	%	Dual output
Cross Regulation			± 5	%	On dual output models when one load is varied between 25% and 100% and other is fixed at 100%
Transient Response			$\pm 5/\pm 3$	% deviation	For 3V3 & 5V output models / all other models. Recovery within 2% in less than 2ms for a 25% load change
Ripple & Noise			125	mV pk-pk	20 MHz bandwidth. Measured using 0.1 μ F ceramic capacitor
Short Circuit Protection					Continuous, with auto recovery
Maximum Capacitive Load					See Models and Ratings table
Temperature Coefficient			0.02	%/ $^{\circ}$ C	
Remote On/Off	Output is on if Remote On/Off (pin 3) is open Output turns off if 2-4 mA is applied to Remote On/Off (pin 3). Referenced to -Vin.				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		87		%	See Models and Ratings table
Isolation: Input to Output	1500			VDC	3000VDC option. Add '-H' to model number
Switching Frequency		580		kHz	
Isolation Resistance	10^9			Ω	
Isolation Capacitance		50		pF	
Power Density			44	Win ³	
Mean Time Between Failure	2.8			MHrs	MIL-HDBK-217F, +25 $^{\circ}$ C GB
Weight		0.01 (4.8)		lb (g)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+100	$^{\circ}$ C	Derate from 100% load at +70 $^{\circ}$ C to no load at +100 $^{\circ}$ C
Storage Temperature	-55		+125	$^{\circ}$ C	
Case Temperature			+100	$^{\circ}$ C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

EMC: Emissions

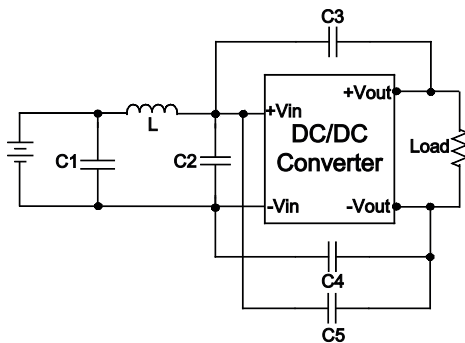
Phenomenon	Standard	Test Level	Notes & Conditions
Conducted	EN55022	Class A	External components required. See suggested filter below.
Radiated	EN55022	Class A	

EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	3	A	
Radiated Immunity	EN61000-4-3	20 Vrms	A	
EFT/Burst	EN61000-4-4	3	A	External input capacitor required 330 μ F/100 V
Surges	EN61000-4-5	Installation class 2	A	External input capacitor required 330 μ F/100 V
Conducted Immunity	EN61000-4-6	3 V rms	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	

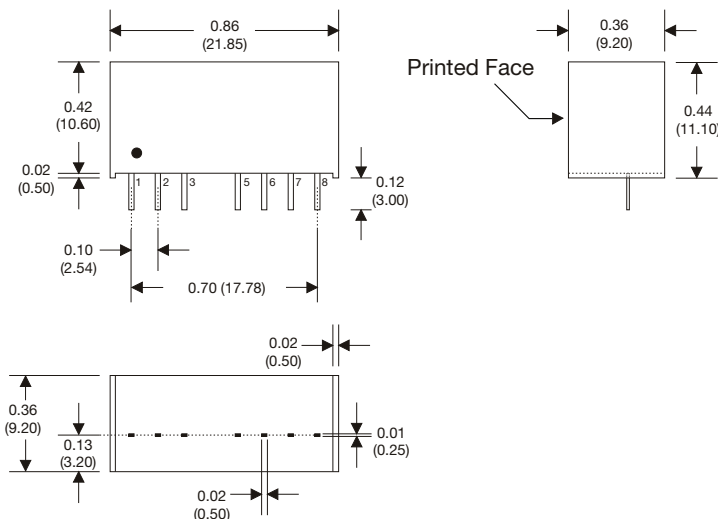
Application Notes

EMI Filter



	C1 & C2	L	C3 & C4	C5
ITQ24	10 μ F (35 V)	12 μ H	470 pF (3 kV)	n/a
ITQ48	2.2 μ F (100 V)	12 μ H	1000 pF (3 kV)	1000 pF (3 kV)

Mechanical Details



Pin Connections		
Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote On/Off	Remote On/Off
5	N/C	N/C
6	+Vout	+Vout
7	-Vout	Common
8	N/C	-Vout

Pin Connections		
Pin	Single -H	Dual -H
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote On/Off	Remote On/Off
5	No Pin	No Pin
6	+Vout	+Vout
7	-Vout	Common
8	N/C	-Vout

Notes

- All dimensions are in inches (mm)
- Weight: 0.01lbs (4.8 g) approx.
- Pin diameter: 0.02 \pm 0.002 (0.5 \pm 0.05)
- Pin pitch tolerance: \pm 0.014 (\pm 0.35)
- Case tolerance: \pm 0.02 (\pm 0.5)