



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!



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**ABSOLUTE MAXIMUM RATINGS**

Parameters	Symbol	Unit	Value	Comment
Supply voltage	V <sub>cc</sub>	V	7	
Primary conductor temperature	—	°C	110	
Non repetitive primary current pulse(20 μS) in powered or unpowered state.	I <sub>p</sub>	A	20 × I <sub>f</sub>	
ESD(HBM: Human Body Model)	—	kV	4	C=100pF, R=1.5kΩ

**ISOLATION CHARACTERISTICS**

Parameters	Symbol	Unit	Value	Comment
Insulation voltage	V <sub>d</sub>	—	AC4200V, for 1minute(Sensing current 0.5mA)	Primary ↔ Secondary
Insulation Resistance	R <sub>is</sub>	—	≥ 500MΩ (at DC500V)	Primary ↔ Secondary
Clearance distance	d <sub>ci</sub>	—	7.7mm (TYP)	Primary ↔ Secondary
Creepage distance	d <sub>cp</sub>	—	7.7mm (TYP)	Primary ↔ Secondary
Case material	—	—	UL94 V-0	
Comparative Tracking Index (CTI)	CTI	V	600	
Application example	—	—	300V, CAT III, PD2	Reinforced isolation,non uniform field according to EN50178, EN61010
	—	—	600V, CAT III, PD2	Simple isolation,non uniform field according to EN50178, EN61010

**ENVIRONMENTAL AND MECHANICAL CHARACTERISTICS**

Parameters	Symbol	Unit	Value			Comment
			MIN	TYP	MAX	
Ambient operating temperature	T <sub>a</sub>	°C	-40		+105	
Ambient storage temperature	T <sub>s</sub>	°C	-40		+105	
Mass	m	g		12		

SPECIFICATIONS

Parameters	Symbol	Unit	Value			Comment
			MIN	TYP	MAX	
Rated Current	F01P006S05	If	A		6	
	F01P015S05				15	
	F01P025S05				25	
	F01P050S05				50	
Maximum current (at Vcc=+5V, Ta=+105°C)	F01P006S05	I <sub>pmax</sub>	A	-20		20
	F01P015S05			-51		51
	F01P025S05			-85		85
	F01P050S05			-150		150
Supply Voltage	V <sub>cc</sub>	V	4.75	5.00	5.25	
Number of primary turns	N <sub>p</sub>	T	1, 2, 3			
Number of secondary turns	F01P006S05	N <sub>s</sub>	T		1816	
	F01P015S05				1737	
	F01P025S05				1764	
	F01P050S05				1600	
Consumption current (at If)	F01P006S05	I <sub>cc</sub>	mA		25	I <sub>cc</sub> =15+I <sub>p</sub> (mA)/N <sub>s</sub>
	F01P015S05				30	
	F01P025S05				35	
	F01P050S05				55	
Output voltage	V <sub>o</sub>	V	0.375		4.625	
Output voltage(at I <sub>o</sub> =0A)	V <sub>o</sub>	V		2.5		
Electrical offset voltage	F01P006S05	V <sub>oe</sub>	mV	-10.40		10.40
	F01P015S05			-7.10		7.10
	F01P025S05			-6.25		6.25
	F01P050S05			-5.80		5.80
Electrical offset current referred to primary	F01P006S05	I <sub>oe</sub>	A	-0.10		0.10
	F01P015S05			-0.17		0.17
	F01P025S05			-0.25		0.25
	F01P050S05			-0.46		0.46
Temperature coefficient of Output voltage(at I <sub>o</sub> =0A)	F01P006S05	TCV <sub>o</sub>	ppm/K		±10.0	±80.0
	F01P015S05				±7.5	±70.0
	F01P025S05				±6.5	±60.0
	F01P050S05				±6.0	±60.0
Sensitivity(Theoretical value)	F01P006S05	G <sub>th</sub>	mV/A		104.2	625mV/If
	F01P015S05				41.67	
	F01P025S05				25	
	F01P050S05				12.5	
Sensitivity error	ε <sub>G</sub>	%	-0.7		0.7	
Temperature coefficient of Sensitivity(at Ta=-40°C~+105°C)	TCG	ppm/K			±40	
Output Linearity	ε <sub>L</sub>	%	-0.1		0.1	
Magnetic offset current referred to primary(at I <sub>o</sub> ×If)	I <sub>oM</sub>	A	-0.1		0.1	
Output current noise referred to primary(at 100Hz~100kHz)	F01P006S05	I <sub>no</sub>	μA/(Hz) <sup>1/2</sup>		36	RL=1kΩ
	F01P015S05				90	
	F01P025S05				150	
	F01P050S05				300	

Offset voltage value is after removal of core hysteresis.

SPECIFICATIONS

Ta=+25°C, RL=10kΩ, Vcc=+5V

Parameters	Symbol	Unit	Value			Comment	
			MIN	TYP	MAX		
Peak to peak output ripple at oscillator frequency(f typ=450kHz)	F01P006S05	—	mV		40	160	RL=1kΩ
	F01P015S05				15	60	
	F01P025S05				10	40	
	F01P050S05				5	20	
Reaction time(at 10% of If)	F01P006S05	tra	μs			0.3	RL=1kΩ, di/dt=18A/μs
	F01P015S05					0.3	RL=1kΩ, di/dt=44A/μs
	F01P025S05					0.3	RL=1kΩ, di/dt=68A/μs
	F01P050S05					0.3	RL=1kΩ, di/dt=100A/μs
Response time 1 (at 90% of If)	F01P006S05	tr	μs			0.3	RL=1kΩ, di/dt=18A/μs
	F01P015S05					0.3	RL=1kΩ, di/dt=44A/μs
	F01P025S05					0.3	RL=1kΩ, di/dt=68A/μs
	F01P050S05					0.3	RL=1kΩ, di/dt=100A/μs
Response time 2 (at 10% of If to 90% of Vo)		tr	μs			0.6	RL=1kΩ, di/dt=If/μs
Frequency bandwidth(±1dB)		BW	kHz	200			RL=1kΩ
Frequency bandwidth(±3dB)		BW	kHz	300			RL=1kΩ
Output Voltage Accuracy(Overall)	F01P006S05	X <sub>G</sub>				2.5	X <sub>G</sub> =(100×V <sub>oe</sub> /625)+ε <sub>G</sub> +ε <sub>L</sub>
	F01P015S05					1.9	
	F01P025S05					1.8	
	F01P050S05					1.7	

STANDARDS

EN50178, EN61010-1, EN60950-1, UL508 (file No.E243511)

※Please refer to the another sheet about conditions of UL Recognition.

Characteristic curve(TYP)

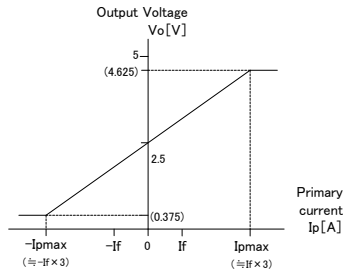


Figure 1: Linearity curve

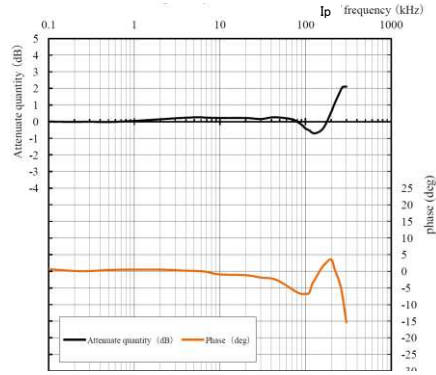


Figure 2: Frequency response curve

ex) F01P025S05  
Measurement condition Ta=+25°C, RL=1kΩ, Ip=3A, Vcc=+5V

SUPPORT DOCUMENTATION

Maximum continuous DC primary current

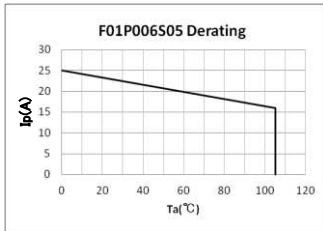


Figure 3 : Ip vs Ta for

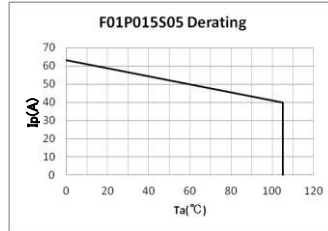


Figure 4: Ip vs Ta for F01P015S05

F01P006S05

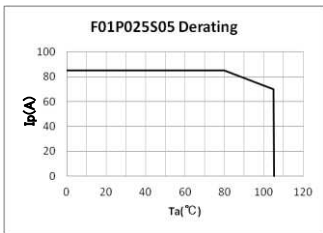


Figure 5 : Ip vs Ta for F01P025S05

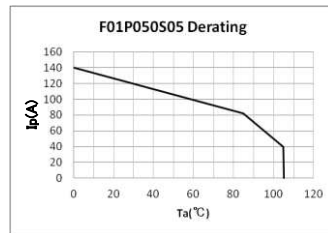


Figure 6: Ip vs Ta for F01P050S05

According to which the following conditions are true the maximum continuous DC primary current plot shows the boundary of the area.

- ①  $I_p < I_{pmax}$
- ② Junction temperature  $T_J < 125^\circ\text{C}$
- ③ Primary conductor temperature  $< 110^\circ\text{C}$
- ④ Resistor power dissipation  $< 0.5 \times \text{rated power}$

Frequency derating

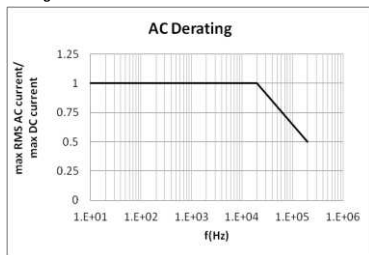
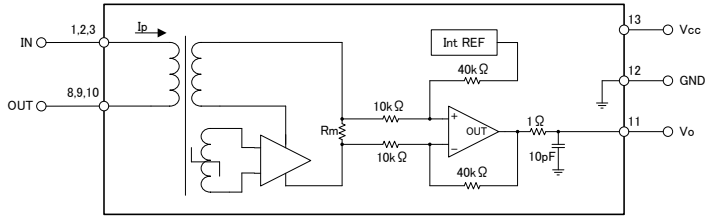


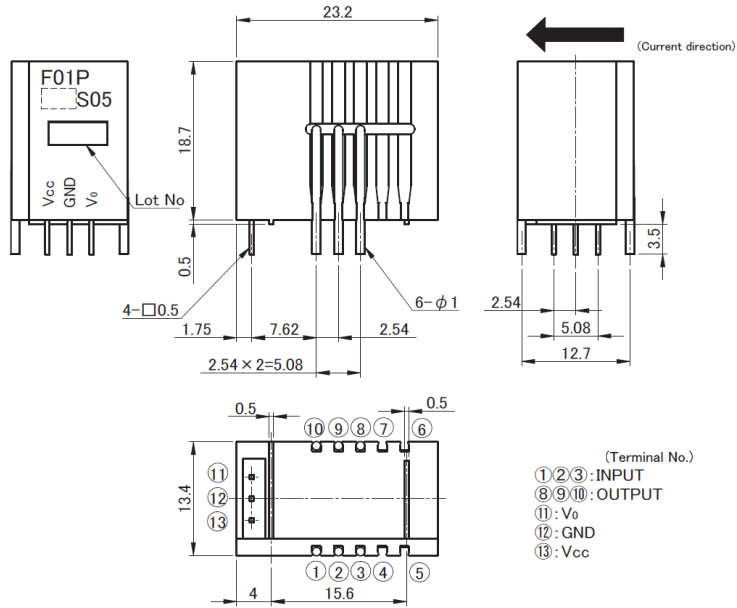
Figure 7 : Maximum RMS AC primary current/maximum DC primary current vs frequency

**CONNECTION**



If/3	
If/2	
If	

**DIMENSIONS(mm)**



- (Terminal No.)
- ①②③: INPUT
  - ⑧⑨⑩: OUTPUT
  - ⑪: V<sub>0</sub>
  - ⑫: GND
  - ⑬: V<sub>cc</sub>

※ (Unless otherwise specified tolerances shall be ±0.5)

**RECOMMENDED HOLE DIAMETER(mm)**

