



ADSL POTS SPLITTER FOR 600 OHMS IMPEDANCE



P/N: POTS602

Product Specification

Product Number: POTS602

Product Design History:

Revision	Designer	Description	Date
A01	Jack Yang	New Released	9/17,'07



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1. Preliminary

This is a POTS splitter which designed to implement for ADSL and VDSL application. Also design to meet both ITU and ETSI standard specification.

2. Features

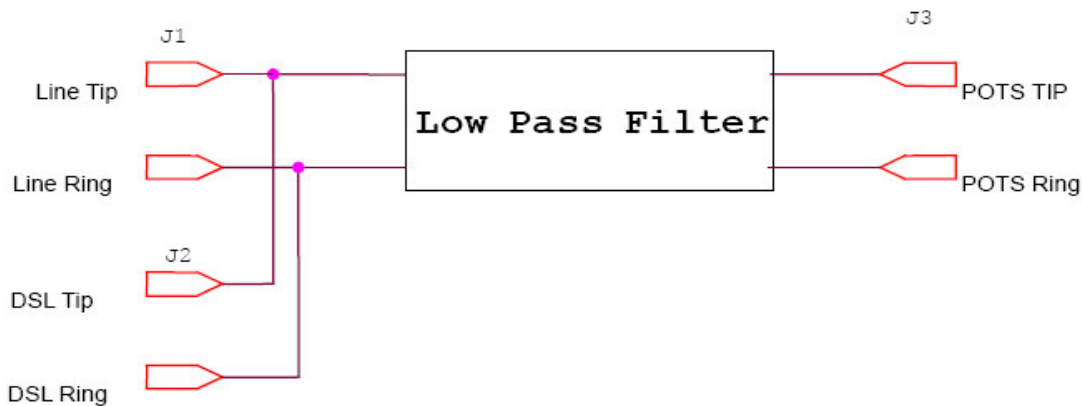
- ◆ Compact package, easy to install for user
- ◆ DC loop current is less than 100mA

3. Standard reference documents

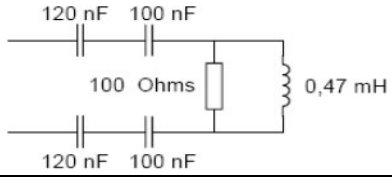
- ◆ ETSI TS 101 952-1-1
- ◆ ETSI TS 101-952-2-1
- ◆ ITU-T G.992.5 ANNEX E
- ◆ ITU-T G.993.A ANNEX D, E & F

4. Design

4-1 Schematic



4-2 Electrical

General		
Item	Description	Spec.
Bandwidth		DC-16.0KHz
Voice Band		DC-4.0KHz
Ringing Frequency		25Hz to 50Hz
ADSL Band		30KHz-2.2MHz
Modem Impedance	30KHz to 12MHz	100ohms
POTS Impedance	0Hz to 4KHz	600ohms
ADSL Impedance Z_{ITU}	0Hz to 12MHz	100ohms
ADSL Impedance Z_{ETSI}	30KHz to 12MHz	$120\Omega + (150\Omega + 47nF) + (750\Omega + 150nF)$
ZADSL	0Hz to 4KHz	
Max. Operating Voltage		250Vdc
DC Loop Current		Less than 80mA

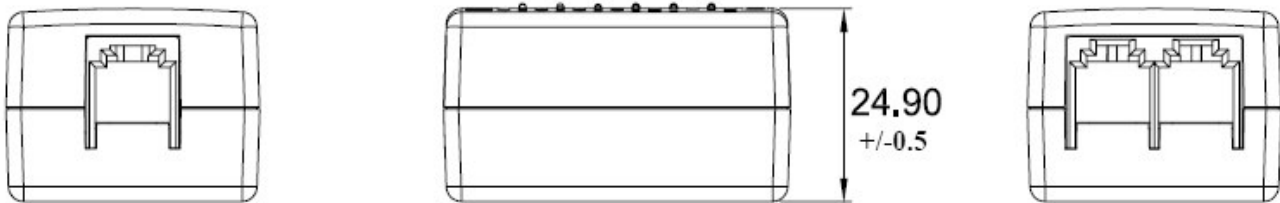
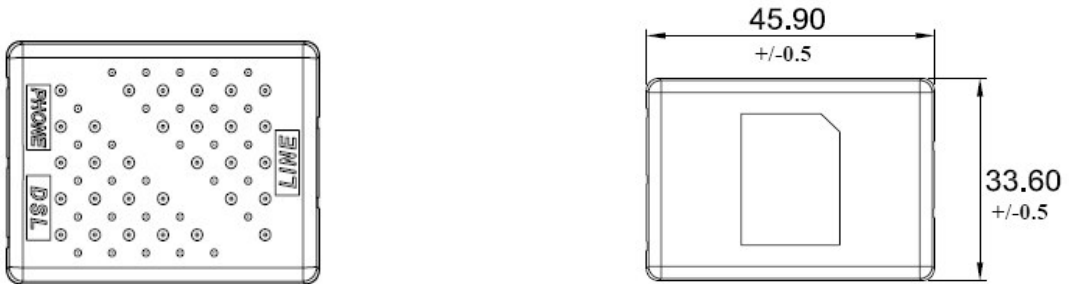


Electrical based on ITU99X.1 Annex E		
Item	Description	Spec.
TIP & Ring to earth	100VDC	> 20Mohms
TIP to Ring	100VDC	> 5Mohms
TIP to Ring	POTS port shorted	< 50ohms
Insertion Loss short loop	600ohms at 1004Hz	< 1.0dB
Insertion Loss long loop	600ohms at 1004Hz	< 0.75dB
Attenuation distortion short loop	200Hz – 3.4KHz	+1.5dB to -1.5dB
	3.4KHz – 4KHz	+2.0dB to -2.0dB
Attenuation distortion long loop	200Hz – 3.4KHz	+0.5dB to -1.5dB
	3.4KHz – 4KHz	+1.0dB to -1.5dB
Return Loss	ERL	> 6dB
	SRL-L	> 5dB
	SHL-L	> 3dB
LCL	200Hz to 1KHz	> 58dB
	3KHz	> 53dB
Group Delay Distortion 600ohms	0.6KHz to 3.2KHz	< 200us
	0.2KHz to 4.0KHz	< 250us
Inter modulation Distortion	2nd	> 57dB
	3nd	> 60dB
POTS Transient Effect		< 2Vp-p, < 15KHz
ADSL Band Attenuation	32KHz-300KHz	> 65dB
	300KHz-12MHz	> 55dB
Input Impedance	30KHz-2208KHz	< 0.25dB
	2208KHz-12MHz	< 0.5dB



Electrical based on ETSI 101 952-1-1		
Item	Description	Spec.
TIP & Ring to earth	100VDC	> 20Mohms
TIP to Ring	100VDC	> 5Mohms
TIP to Ring	POTS port shorted	< 50ohms
Insertion Loss	600Ω at 1000Hz	< 1.0dB
Insertion Loss Distortion	600Ω at 200-4KHz	1.0dB to -1.0dB
Return Loss	300Hz to 500Hz	> 14+(4/200)(f-300)dB
	500Hz to 2KHz	> 18dB
	2KHz to 3.4KHz	> 18-(4/1.4K)(f-2K)dB
Group Delay Distortion 600ohms	200Hz to 600Hz	< 250us
	600Hz to 3.2KHz	< 200us
	3.2KHz to 4KHz	< 250us
Inter modulation Distortion	2nd	> 57dB
	3rd	> 60dB
POTS Transient Effect		< 2Vp-p, < 15KHz
Stop Band Attenuation	32KHz-12MHz	> 55dB

4-3 Mechanical (unit:mm)



Connector	Function	Type	TIP	Ring
J1	DSL	RJ11 Jack	Pin3	Pin4
J2	Line	RJ11 Jack	Pin3	Pin4
J3	Phone	RJ11 Jack	Pin3	Pin4



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5. Environmental

5-1 Over voltage and current

ITU-T Recommendation K.21 Electrical Safety requirements.

5-2 Operating temperature

- ◆ Operating temperature: -20 to + 60 degrees
- ◆ Storage temperature: -40 to + 80 degrees
- ◆ Humidity: 0 to 95% (non-condensing)

6. Reliability

- ◆ Thermal shock: -20 to +85 degrees for 5 cycles
- ◆ Humidity exposure: +50 degrees/95RH, 96hrs
- ◆ Vibration: X axis/10mins, Y axis/10mins