



# TEAclipper-PIC-xV-PT™

TEAclipper PIC programmer core processors

## Summary

TEAclipper-PIC-HV-PT and TEAclipper-PIC-LV-PT are the core processors used in TEAclipper/PIC programming clips. They allow custom field programming products to be manufactured in applications where a different form factor is required to the TEAclipper/PIC.

TEAclipper/PIC devices make it easy to sell code written for PICs and also to deliver updates to products already delivered to customers. For applications where the technology is required in other formats, the core processor is also available separately.

## Features

TEAclipper/PIC-xV-PT feature:

- All the same features as the TEAclipper/PIC devices themselves. (Refer to TEAclipper/PIC data sheet for full details.)
- Based on the PIC18F66J16 microcontroller. No resonator required.
- 64-pin TQFP package.
- TEAclipper/PIC-HV-PT can generate  $V_{pp}$  programming voltages of up to 13V.
- TEAclipper/PIC-LV-PT can only generate  $V_{pp}$  programming voltages up to the target board  $V_{dd}$ .

## Applications

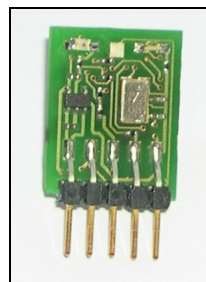
- Firmware programming & archiving
- Firmware sales through physical dispatch of TEAclippers to customers
- Protection from design theft by subcontractors
- Delivery of in-the-field firmware updates for already-deployed products. Costs nothing to implement at product design-time.
- Firmware sales through web marketing by [www.hexwax.com](http://www.hexwax.com), FlexiPanel's firmware publishing service.

## Ordering Information

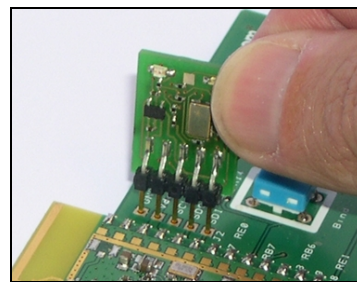
Part No	Description
TEACL-PIC-HV-PT	TEAclipper/PIC high voltage core processor
TEACL-PIC-LV-PT	TEAclipper/PIC low voltage core processor



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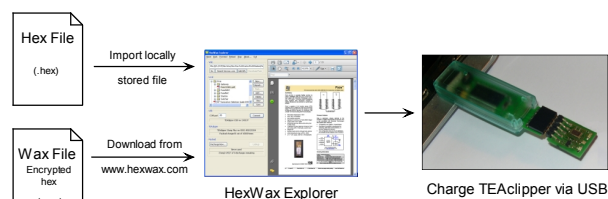
TEAclipper/PIC



Programming a target PCB

## How TEAclippers Work

The *HexWax Explorer* application is used to load TEAclippers with firmware, either stored locally or downloaded from [www.hexwax.com](http://www.hexwax.com) via the TEAclipper USB adapter.



PICs are then programmed by temporarily inserting the TEAclipper into the target device's circuit. The connection can be a PCB header or simply leaning against plate-through holes on a PCB. For prototyping, TEAclippers can be inserted into breadboards.

TEAclipper-PIC-xV-PT chips allow you to replicate the TEAclipper technology in a custom circuit of your own. This allows you to create custom field-programming products.

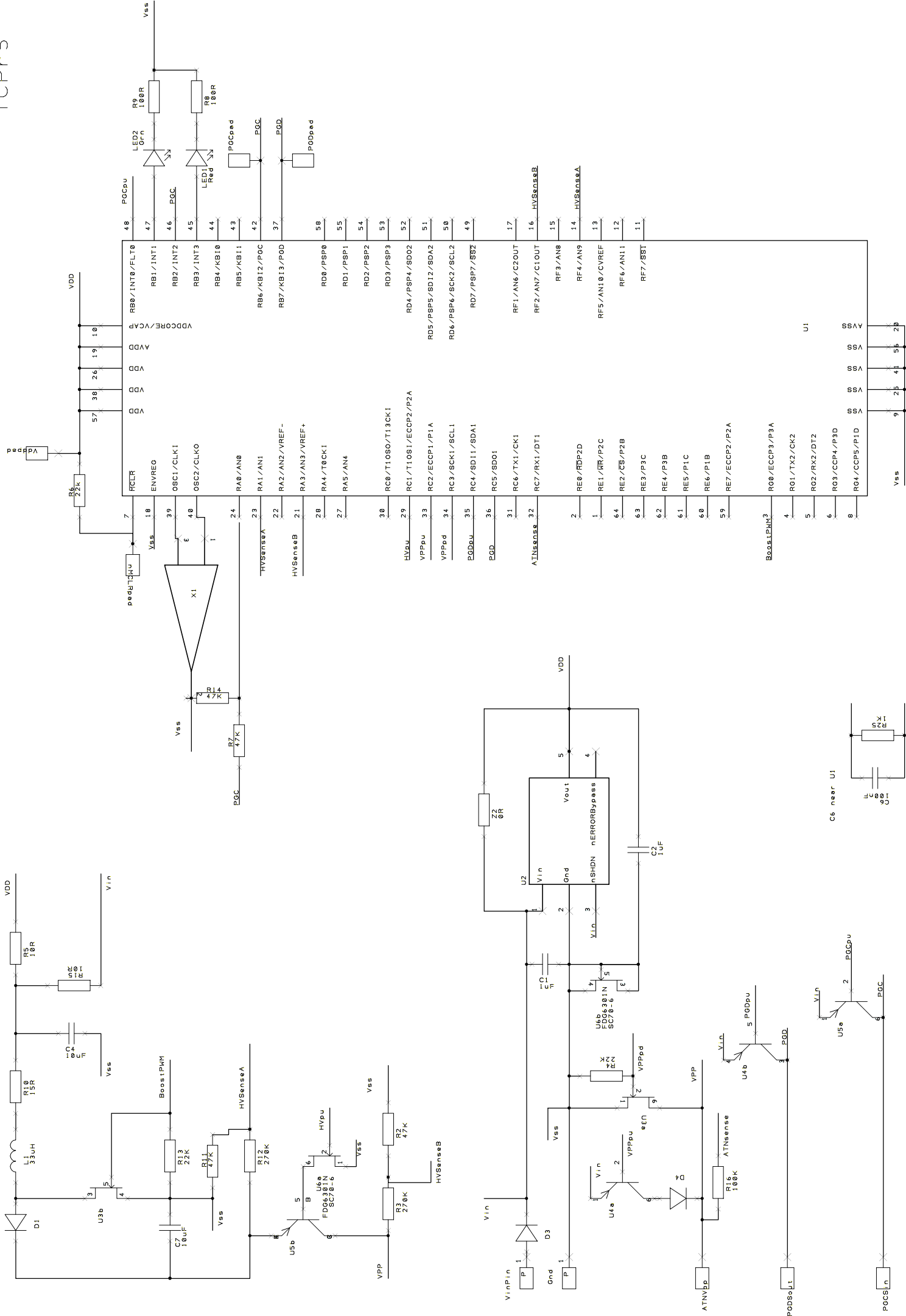
## TEAclipper Circuit

The following pages provide a reference design for TEAclipper/PIC-HV and TEAclipper/PIC-LV devices:

1. Reference schematic.
2. Bill of materials for TEAclipper/PIC-HV
3. Bill of materials for TEAclipper/PIC-LV

## Warranty

Our liability is limited a refund if the product only and not to any injury, loss or damage as a result of the use of this product. We cannot warrant suitability for specific applications. It is the responsibility of the customer to determine suitability of the product in a particular application.



**Bill of materials TEAclipper/PIC HV, version TCPHR5**

<b>Name</b>	<b>Component</b>	<b>Example</b>
D1, D3, D4	1PS76SB10 low Vf (<400mV) diode	Digikey 568-3406-1-ND
J1	5-pin 0.1" header SMT	DigiKey S1013-36-ND cut to 5 pins
C4, C7	10uF 0805 Ceramic 16V	Digikey 490-3347-1-ND
C1, C2	1uF 0402	
C6	100nF 0402	
L1	33uH	DigiKey PCD1096CT-ND
LED1	Red 0805 right angle 2.0V	Digikey 160-1468-1-ND
LED2	Green 0805 right angle 2.0V	Digikey 160-1469-1-ND
U1	TEAclipper-PIC-HV-PT	HexWax
U2	Microchip TC series 2.5V reg SOT-23-5	Digikey TC10552.5VCT713CT-ND
U3, U6	FDG6301N SC70-6	Digikey FDG6301NCT-ND
U4, U5	PNP array UP0411	Digikey UP0411100LCT-ND
R4, R6, R13, R7, R14	22k 0402	
R2, R11	47k 0402	
R3, R12	270k 0402	
R5, R10	Zero ohm link	
R16	100K 0402	
R25	1K 0402	
Z2	Do not populate	
R15	Do not populate	
R8, R9	100R 0402	
X1	Do not populate	
No parts critical, substitutions OK		

**Bill of materials TEAclipper/PIC LV, version TCPLRr5**

<b>Name</b>	<b>Component</b>	<b>Example</b>
D1	Do not populate	
D3, D4	1PS76SB10 low Vf (<400mV) diode	Digikey 568-3406-1-ND
J1	5-pin 0.1" header SMT	DigiKey S1013-36-ND cut to 5 pins
C4, C7	Do not populate	
C1, C2	1uF 0402	
C6	100nF 0402	
L1	Do not populate	
LED1	Red 0805 right angle 2.0V	Digikey 160-1468-1-ND
LED2	Green 0805 right angle 2.0V	Digikey 160-1469-1-ND
U1	TEAclipper-PIC-LV-PT	HexWax
U2	Microchip TC series 2.5V reg SOT-23-5	Digikey TC10552.5VCT713CT-ND
U3, U6	Do not populate	
U4, U5	PNP array UP0411	Digikey UP0411100LCT-ND
R6, R13, R7, R14	22k 0402	
R2	47k 0402	
R3	270k 0402	
R4, R5, R10, R11, R12	Do not populate	
R16	Zero ohm link 0402	
R25	1K 0402	
Z2	Do not populate	
R15	Do not populate	
R8, R9	100R 0402	
X1	Do not populate	
No parts critical, substitutions OK		

# Mouser Electronics

Authorized Distributor

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FlexiPanel:

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