



leave out R2 for DCC only operation

- Q12 ZXMD63P03X or IRF7506
- Q13 ZXMD63N03X or IRF7503
- D1 - D4 BYD77B or BYD17D (1 amp)
- Q3 - Q7 BCR108W
- Q1 BCR148S Q8 BCR108W
- Q10 BC850BW

- D5 27v BZD27-C27/T1
- D6 UDZ 6.2B
- U1 PIC 16F872-20/SS

- X1 16 MHz Ceramic resonator with capacitors  
e.g. AVX PBRC-16.00BR  
or
- X2 16 MHz Ceramic resonator without capacitors  
e.g. Murata CSACV 16.00MTJ

**DCC Decoder**  
**1.5 Amp rating.**  
**with feedback and HF PWM**

M P Bolton 27/4/01  
 Decod12 Rev D