





????????????IC????????DSP????CPU?I/O????????????2006????????3 mm x3  
mm 10??LFCSP(????????)????16 bit????(DAC) ??????????????——  
????????70%??  
????????????????????(????????1.5????????1.5??)????? ?????????????ATE????????  
??“die”?????????—????????????  
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??transceiver module??1????4.  
????????????????????4??  
??18650????????5????????  
????PCB/FPC,????????????????????????????PCB/FPC????????????????  
????????????????????????LED?? 6????????????????????????????????  
????????????KTV????????????????????????????1????NPN????2?N????????P????  
????????????PN????,????????PN????,????????e (Emitter)??b  
(Base)??c (Collector)????????IC????????IC????????????????  
????CPU??  
????????????CPU????????????????????CPU????????20?30????2????????  
????????????EDA??  
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?? [3] ?????????  
????????????????IC????????????????????????????????1?0????  
???????????????????????????????? IC????????IC????????????  
??CPU??  
????????????CPU????????????????????CPU????????20?30????  
????:????????????5????????????PCB/FPC,????????PCB/FPC  
??LED????2?—????4??DRAM  
???(??IC)????????????????IC??IC????IC????????(????????  
CD?DVD????????)????IC????????????(????????)????  
????????????????????????????????????transceiver module