

Soldering LAB Worksheet for SD405

Name _____

Group# _____

Date _____

LED's

On your Soldering Board is a group of discrete LEDs' that create the circle, the manufactures part# is SML-LXFM0603SUGCTR and this device is using 20mA.

What is the typical Vf of this device _____

What is the Intensity of the LED in milli candles? _____

What is the Max current this device is rated for? _____

What is the Typical Wavelength of this device? _____

What is the cost to purchase the LED's for the circular ring only in 1 lot vs 10 lot pricing?

of LED's x 1 lot = \$ _____ # of LED's x 10 lot = \$ _____ Cost differential

of the total =\$ _____

IC Packages

Questions pertaining to QFP44 IC's on the main board, QFP44 Is the size of the IC, with a manufacturers part # of B505CA4EMCAXP

What is the Digi-key part# _____?

How many 8-bit digital I/O ports does this microcontroller have? _____

How many leads (Pins) are on this package? _____

What page of the datasheet will you find the Package outline dimensions/ pitch etc.

Page # _____

Soldering with Unleaded Solder

This lab project required Solder Paste Leaded Manufacturers part# TS391AX

What does 1 tube of solder paste (Leaded) Cost \$ _____

What is its composition? _____

What does the first number of the composition stand for? _____

What does the second number of the composition stand for?

What is the melting point of this solder in degrees Celsius? _____

What is the shelf life of Solder paste? _____

Trace width Calculations

Using Digi-keys Conversion Calculator for trace width answer the following

Calculate the trace width in mils of a trace 7.4CM long carrying 1.2 A of current with a thickness of 1 oz/ft² and a temperature rise of 20 deg F from an ambient room temperature of 68 deg F.

the External Required Trace width would be? - _____ mils

With the same information, use copper thickness of 0.5oz/ft²

The External Required trace width would be? _____ mils

With the same information, use copper thickness of 2oz/ft²

The External Required Trace width would be? _____ mils

Once the Surface Mount Soldering Kit has been completed

The Kit and the worksheet should be turned in to Dr. Glower or Jeff Erickson before Week 8

(1 Worksheet + 1 Practice Solder Board per person) You may keep the Boards once graded