

ENGINEERING INPUT - NEW CIRCUIT BOARD DESIGN

TITLE		JOB NUM
ELEC ENGINEER	EXT	CHG NUM
MECH ENGINEER	EXT	SCH NUM
PROJECT LEAD	EXT	BRD NUM
DATE REC'D	CONTROL#	ASY NUM
DATE REQ	QTY NEEDED	MECH NUM

CHECKLIST

PRELIMINARY :

BOARD THICKNESS: _____

COPPER THICKNESS: _____

PROPOSED LAYER COUNT _____

- ☐ BOARD OUTLINE: IMPORT FROM PRO/E
- ☐ BOARD OUTLINE: INCLUDED IN FILES:
- ☐ USE PREVIOUS PART NUM:

☐ PRODUCTION OR ☐ TEST ONLY

Y / N RECOMMENDED FLOOR PLAN

SCHEMATIC : PLEASE INDICATE IF POSSIBLE

- ☐ HIGH VOLTAGE / HIGH CURRENT
- ☐ HIGH SPEED LINES / IMPEDANCE CONTROL
- ☐ SIGNALS NEEDING SHIELDING OR ISOLATION
- ☐ IF MULTIPLE GNDS, SHOW COMMON RETURN
- ☐ ANY NET CLASSES, NET PROPERTIES IN SCH?
- ☐ UNUSED INPUTS TIED HIGH OR LOW

Y / N REORDER REFERENCE DESIGNATORS?

LAYOUT CONSIDERATIONS:

QUESTION	ANSWER
1. Explain the difference between a <i>de novo</i> mutation and a <i>germline</i> mutation.	<i>de novo</i> mutation is a new mutation that occurs in a single cell or a few cells of an organism. <i>germline</i> mutation is a mutation that is present in all cells of an organism, including the germ cells.
2. Explain the difference between a <i>point</i> mutation and a <i>frameshift</i> mutation.	<i>point</i> mutation is a mutation that changes a single nucleotide. <i>frameshift</i> mutation is a mutation that changes the reading frame of a gene, which can lead to a completely different protein being produced.
3. Explain the difference between a <i>silent</i> mutation and a <i>missense</i> mutation.	<i>silent</i> mutation is a mutation that does not change the amino acid sequence of a protein. <i>missense</i> mutation is a mutation that changes a single amino acid in a protein.
4. Explain the difference between a <i>synonymous</i> mutation and a <i>non-synonymous</i> mutation.	<i>synonymous</i> mutation is a mutation that does not change the amino acid sequence of a protein. <i>non-synonymous</i> mutation is a mutation that changes the amino acid sequence of a protein.
5. Explain the difference between a <i>conservative</i> mutation and a <i>non-conservative</i> mutation.	<i>conservative</i> mutation is a mutation that changes an amino acid to another amino acid with similar properties. <i>non-conservative</i> mutation is a mutation that changes an amino acid to another amino acid with different properties.
6. Explain the difference between a <i>beneficial</i> mutation and a <i>detrimental</i> mutation.	<i>beneficial</i> mutation is a mutation that increases an organism's fitness. <i>detrimental</i> mutation is a mutation that decreases an organism's fitness.
7. Explain the difference between a <i>neutral</i> mutation and a <i>deleterious</i> mutation.	<i>neutral</i> mutation is a mutation that has no effect on an organism's fitness. <i>deleterious</i> mutation is a mutation that decreases an organism's fitness.
8. Explain the difference between a <i>dominant</i> mutation and a <i>recessive</i> mutation.	<i>dominant</i> mutation is a mutation that is expressed in the heterozygous state. <i>recessive</i> mutation is a mutation that is only expressed in the homozygous state.
9. Explain the difference between a <i>heterozygous</i> mutation and a <i>homozygous</i> mutation.	<i>heterozygous</i> mutation is a mutation that is present in one copy of a gene. <i>homozygous</i> mutation is a mutation that is present in both copies of a gene.
10. Explain the difference between a <i>carrier</i> and a <i>patient</i> .	<i>carrier</i> is an individual who has a <i>heterozygous</i> mutation but does not have the disease. <i>patient</i> is an individual who has a <i>homozygous</i> mutation and has the disease.
11. Explain the difference between a <i>phenotype</i> and a <i>genotype</i> .	<i>phenotype</i> is the observable characteristics of an organism. <i>genotype</i> is the genetic makeup of an organism.
12. Explain the difference between a <i>trait</i> and a <i>characteristic</i> .	<i>trait</i> is a specific characteristic of an organism. <i>characteristic</i> is a general feature of an organism.
13. Explain the difference between a <i>quantitative</i> trait and a <i>qualitative</i> trait.	<i>quantitative</i> trait is a trait that can be measured. <i>qualitative</i> trait is a trait that cannot be measured.
14. Explain the difference between a <i>continuous</i> trait and a <i>discrete</i> trait.	<i>continuous</i> trait is a trait that can take on any value. <i>discrete</i> trait is a trait that can only take on a few values.
15. Explain the difference between a <i>polygenic</i> trait and a <i>monogenic</i> trait.	<i>polygenic</i> trait is a trait that is controlled by multiple genes. <i>monogenic</i> trait is a trait that is controlled by a single gene.
16. Explain the difference between a <i>complex</i> trait and a <i>simple</i> trait.	<i>complex</i> trait is a trait that is influenced by multiple factors. <i>simple</i> trait is a trait that is influenced by a single factor.
17. Explain the difference between a <i>heritable</i> trait and a <i>non-heritable</i> trait.	<i>heritable</i> trait is a trait that can be passed on to offspring. <i>non-heritable</i> trait is a trait that cannot be passed on to offspring.
18. Explain the difference between a <i>genetic</i> trait and a <i>environmental</i> trait.	<i>genetic</i> trait is a trait that is determined by genes. <i>environmental</i> trait is a trait that is determined by the environment.
19. Explain the difference between a <i>genotype-environment interaction</i> and a <i>gene-gene interaction</i> .	<i>genotype-environment interaction</i> is an interaction between a genotype and the environment. <i>gene-gene interaction</i> is an interaction between two genes.
20. Explain the difference between a <i>genotype-environment interaction</i> and a <i>gene-environment interaction</i> .	<i>genotype-environment interaction</i> is an interaction between a genotype and the environment. <i>gene-environment interaction</i> is an interaction between a gene and the environment.

Y / N HIGH VOLUME? COST SENSITIVE?

Y / N PALLETIZED FOR ASSEMBLY?

Y / N COMPONENT HEIGHT RESTRICTIONS?

Y / N COMPONENT KEEP-OUT AREAS?

Y / N EXTRA TEST POINTS? ACCESSIBILITY?

Y / N HEAT SINK REQUIREMENTS?

Y / N ANY NEED FOR THERMAL ANALYSIS?

Y / N ANY SIMULATION RESULTS (PSPICE)?

Y / N EMC ANALYSIS?

Y / N ORIENTATION EMULATORS/TEST/WAVE?

NOTES

[illegible]