

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

**AKOUSTIS TECHNOLOGIES, INC. AND
AKOUSTIS, INC.**

Plaintiff,

v.

QORVO, INC.

Defendant.

Civil Action No. 2:23-cv-00180-JRG-RSP

JURY TRIAL

P.R. 4-5(D) JOINT CLAIM CONSTRUCTION CHART

I. AGREED TERMS:

As set forth in the Parties' Joint Claim Construction and Prehearing Statement (Dkt. 81), the parties have agreed to the following constructions:

Term	Agreed Constructions
Claim 1 in its entirety; order of steps a)-d)	Claim 1's steps a)-d) must be performed in order.
Claim 1 preamble	Claim 1's preamble is limiting.

Further to the Parties' Joint Claim Construction and Prehearing Statement (Dkt. 81), the Parties have agreed to apply the plain and ordinary meaning to the following formerly disputed terms:

1. "epitaxial layer" (term 1)
2. "pre-treating" (term 4)
3. "a surface of the substrate" (term 5)
4. "buffer layer" (term 9)
5. Reactant-based terms (terms 10-17)
6. growing / grow / grown (term 18)
7. "preheating said substrate in hydrogen" (term 19)

II. DISPUTED TERMS:

The terms in the following Joint Claim Construction Chart remain disputed.

<u>Claim</u>	<u>Plaintiffs' Proposed Construction</u>	<u>Defendant's' Proposed Construction</u>	<u>Court's Construction</u>
Claim 11. A process for growing an epitaxial layer on a <i>lattice mismatched substrate</i> comprising the steps of: a) providing a substrate; b) pre-treating a surface of the substrate with at least one group III reactant or at least one group II reactant at an elevated growth temperature prior to introducing a group V reactant or a group VI reactant; c) introducing a group V reactant or a group VI reactant to grow a nucleation layer on the surface of the substrate; and d) growing a buffer layer on said nucleation layer, said buffer layer providing a surface upon which said epitaxial layer is grown.	<i>lattice mismatched substrate</i> Plain and ordinary meaning, <i>e.g.</i>, not indefinite and no further construction necessary.	<i>lattice mismatched substrate</i> “a crystalline substrate with a lattice constant that differs from the epitaxial layer”	
Claims 1, 2, 6, 10 1. A process for growing an epitaxial layer on a lattice mismatched substrate comprising the steps of: a) providing <i>a substrate</i>; b) pre-treating a surface of <i>the substrate</i> with at least one group III reactant or at least one group II reactant at an elevated growth temperature prior to introducing a group V reactant or a group VI reactant;	<i>a substrate / the substrate / said substrate</i> Plain and ordinary meaning, <i>e.g.</i>, not indefinite and no further construction necessary.	<i>a substrate / the substrate / said substrate</i> “the lattice mismatched substrate” If not construed in this manner, indefinite pursuant to 35 U.S.C. 112, 2nd ¶.	

<u>Claim</u>	<u>Plaintiffs' Proposed Construction</u>	<u>Defendant's' Proposed Construction</u>	<u>Court's Construction</u>
c) introducing a group V reactant or a group VI reactant to grow a nucleation layer on the surface of <i>the substrate</i>; and d) growing a buffer layer on said nucleation layer, said buffer layer providing a surface upon which said epitaxial layer is grown. 2. The process of claim 1, wherein <i>said substrate</i> is selected from the group consisting of silicon, sapphire and SiC. 6. The process of claim 1, wherein said step of pre-treating includes pre-treating the surface of <i>the substrate</i> with an aluminum reactant and a gallium reactant. 10. The process of claim 1, further comprising the step of preheating <i>said substrate</i> in hydrogen prior to pre-treating the surface of <i>the substrate</i> with at least one group III reactant or at least one group II reactant.			
Claim 1 1. A process for growing an epitaxial layer on a lattice mismatched substrate comprising the steps of: a) providing a substrate;	<i>at an elevated growth temperature</i> Plain and ordinary meaning, e.g., not indefinite and no further construction necessary.	<i>at an elevated growth temperature</i> Indefinite pursuant to 35 U.S.C. 112, 2nd ¶	

<u>Claim</u>	<u>Plaintiffs' Proposed Construction</u>	<u>Defendant's Proposed Construction</u>	<u>Court's Construction</u>
b) pre-treating a surface of the substrate with at least one group III reactant or at least one group II reactant <i>at an elevated growth temperature</i> prior to introducing a group V reactant or a group VI reactant; c) introducing a group V reactant or a group VI reactant to grow a nucleation layer on the surface of the substrate; and d) growing a buffer layer on said nucleation layer, said buffer layer providing a surface upon which said epitaxial layer is grown.	A POSITA would understand this term in light of the entire patent and claim to involve a temperature sufficient for depositing a desired element or compound using chosen reactant(s).		
Claim 1 1. A process for growing an epitaxial layer on a lattice mismatched substrate comprising the steps of: a) providing a substrate; b) pre-treating a surface of the substrate with at least one group III reactant or at least one group II reactant at an elevated growth temperature <i>prior to introducing a group V reactant or a group VI reactant</i>; c) introducing a group V reactant or a group VI reactant to grow a nucleation layer on the surface of the substrate; and	<i>prior to introducing a group V reactant or a group VI reactant</i> Plain and ordinary meaning, <i>e.g.</i>, not indefinite and no further construction necessary.	<i>prior to introducing a group V reactant or a group VI reactant</i> “prior to introducing any group V or group VI reactant” -OR- “prior to introducing the group V or group VI reactant recited in step c)” If not construed in this manner, indefinite pursuant to 35 U.S.C. 112, 2nd ¶.	

<u>Claim</u>	<u>Plaintiffs' Proposed Construction</u>	<u>Defendant's' Proposed Construction</u>	<u>Court's Construction</u>
d) growing a buffer layer on said nucleation layer, said buffer layer providing a surface upon which said epitaxial layer is grown.			
Claims 1, 7, and 12 1. A process for growing an epitaxial layer on a lattice mismatched substrate comprising the steps of: a) providing a substrate; b) pre-treating a surface of the substrate with at least one group III reactant or at least one group II reactant at an elevated growth temperature prior to introducing a group V reactant or a group VI reactant; c) introducing a group V reactant or a group VI reactant to grow a nucleation layer on the surface of the substrate; and d) growing a buffer layer on said nucleation layer, said buffer layer providing a surface upon which said epitaxial layer is grown. 7. The process of claim 6, wherein said nucleation layer is AlN or AlGaIn. 12. The process of claim 11, wherein the step of introducing a group V reactant or a group VI reactant includes growing a nucleation layer at a growth temperature	nucleation layer Plain and ordinary meaning, <i>e.g.</i>, not indefinite and no further construction necessary.	nucleation layer “A layer between the buffer layer and pretreated substrate made from the reactants chosen in steps b) and c)”	

<u>Claim</u>	<u>Plaintiffs' Proposed Construction</u>	<u>Defendant's' Proposed Construction</u>	<u>Court's Construction</u>
of 900 to 1100° C. and the step of growing a buffer layer includes growing a buffer layer at a growth temperature of 900 to 1100° C.			

Dated: July 9, 2024.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on all counsel of record via the Court's ECF system on July 9, 2024.

/s/ John B. Campbell

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