



2024:DHC:8914-DB



IN THE HIGH COURT OF DELHI AT NEW DELHI

% *Judgment delivered on: 20.11.2024*

+ **CUSAA 24/2024**

VIVO MOBILE INDIA PRIVATE LIMITED Appellant

versus

CUSTOMS AUTHORITY FOR ADVANCE
RULINGS & ANR. Respondents

Advocates who appeared in this case:

For the Appellant : Mr. Kishore Kunal, Mr. Jayesh Sitlani,
Ms. R. Pare, Ms. Ankita Prakash, Mr.
Mahesh Singh & Mr. Anuj Kumar,
Advocates

For the Respondent : Mr. Gibran Naushad, Advocate

CORAM

HON'BLE MR JUSTICE VIBHU BAKHRU

HON'BLE MS JUSTICE SWARANA KANTA SHARMA

JUDGMENT

SWARANA KANTA SHARMA, J

1. The present appeal under Section 28KA of the Customs Act, 1962 [hereafter '*the Customs Act*'] has been preferred by the appellant i.e. Vivo Mobile India Private Limited [hereafter '*the appellant*'] assailing the order dated 13.12.2023 [hereafter '*the impugned order*'] passed by the learned Customs Authority of Advance Rulings [hereafter '*learned CAAR*'].



2. The controversy in this case relates to whether the ‘Integrated Circuit Micro Electro Mechanical System Microphones’ [hereafter also referred to as ‘*the product*’] being imported by the appellant under Customs Tariff Heading [hereafter ‘*CTH*’] 8518, specifically Tariff Item 8518 10 00, of the First Schedule to the Customs Tariff Act, 1975 [hereafter ‘*the Customs Tariff Act*’], is liable to be classified under CTH 8542, specifically Tariff Item 8542 39 00.

FACTUAL BACKGROUND

3. The case set out by the appellant is that being a mobile phone manufacturer in India, it imports various parts and equipment. Earlier, it used to import traditional microphones. However, the same being bulky have now become outdated, and have been replaced by high performance and highly sensitive silicon based Integrated Circuit Micro Electro Mechanical System (**MEMS**) Microphones.

4. The MEMS Microphones were being imported by the appellant under Tariff Item 8518 10 00 which pertains to “*Microphones and stands therefor*”. In respect of the same, Customs Duty at Standard Rate i.e. 15% was being paid by the appellant.

5. However, the appellant was of the view that the product falls within the description of ‘Electronic Integrated Circuit’ [hereafter also referred to as ‘*EIC*’] since it was a silicon based Multi-Component Integrated Circuit [hereafter also referred to as ‘*MCO*’], which is an energy conversion device that performs the function of converting sound signals into electrical signals. Further, the product has a MEMS sensor and an Application Specific Integrated Circuit [hereafter



‘ASIC’] chip, which is attached to the Printed Circuit Boards [hereafter ‘PCB’] and is packaged together through a semiconductor process, called Land Grid Array [hereafter ‘LGA’], inside a metal shell.

6. The appellant intends to import the product under CTH 8542 which pertains to ‘Electronic Integrated Circuit’, and specifically the Tariff Item 8542 39 00 i.e. ‘Others’. Though the First Schedule to the Customs Tariff Act imposed a Customs Duty at Standard Rate of 7.5% in respect of Tariff Item 8542 39 00, the entire CTH 8542 was exempted from the levy of customs duty *vide* Notification No. 024/2005-Cus dated 01.03.2005.

7. To claim the aforesaid exemption, the appellant, by way of an application dated 22.09.2023 filed before the learned CAAR, sought ruling on the following question – Whether MEMS Microphone can be classified under Tariff Entry 8542 3900?

The Impugned Order

8. Before the learned CAAR, the appellant, in a nutshell, argued that the product being an MCO (as per the definition of MCO provided under Note 12 of Chapter 85 of the First Schedule to the Customs Tariff Act) will be covered within the ambit of an EIC and will be appropriately classifiable under CTH 8542. In support of the contentions, reliance was placed on Notes of Chapter 85; Explanatory Notes (Volume 5) to the Harmonized Commodity Description and Coding System (2022, Edition Seventh), which is commonly known as Harmonised System of Nomenclature [hereafter ‘HSN’]; and



decisions/rulings in the United States of America (USA) and European Union (EU) in similar facts and circumstances.

9. The learned CAAR, in the impugned order, held that the product has been correctly classified under CTH 8518, specifically Tariff Item 8518 1000, which includes 'microphones'. It held that the product, even if packaged similarly to integrated circuits, did not meet the criteria to be classified under CTH 8542. The impugned order holds that the technical literature submitted by Vivo itself describes the product as a 'microphone' or a 'MEMS Microphone' and not as 'Integrated Circuit MEMS Microphones'. It was further held that in Explanatory Notes to CTH 8542, it is stated that all separate (tradable units), which are not classifiable under 8504, 8532, 8541 or which do not fall under the definition of silicon-based sensors, actuators, oscillators and combinations thereof, are excluded from the definition of an MCO. The learned CAAR also opined that the product, which appears to be an assembly, constitutes a complete machine or device i.e., microphone and thus, merits classification as a complete machine or device. Therefore, the learned CAAR, also considering the application of Rule 1 and Rule 6 of the General Rules of Interpretation [hereafter '*GI Rules*'], held that the product, which even the appellant claims to be a microphone, had been correctly classified under Tariff Item 8518 10 00 of the First Schedule to the Customs Tariff Act.

10. The present appeal has been preferred, assailing the aforesaid findings of the learned CAAR.



SUBMISSIONS BEFORE THE COURT

Submissions on Behalf of the Appellant

11. The learned counsel appearing on behalf of the appellant argues that the product can be correctly classified under CTH 8542, and more particularly Tariff Item 8542 39 00. He submits that the product is a miniature, high-performance, low-power silicon microphone, which can be characterized as a Integrated Circuit Microphone. He further submits that the product consists of MEMS silicon sensor components, an ASIC amplifier chip, a PCB substrate, a shell, gold wire, and other capacitor-resistance components, all packaged using the LGA method. As regards the functioning of the product, it is submitted that the product (an integrated circuit) acts as an energy conversion device that performs the function of converting sound signals into electrical signals. The sound is transmitted to the diaphragm of the MEMS to cause vibration which changes the capacitance between the electrodes, converting acoustic signal to electrical signal.

12. The learned counsel contends that the learned CAAR has erroneously applied GI Rules by completely ignoring the relevant Section Notes as well as Rule 1 of GI Rules. It is contended that Rule 1 provides that the Chapter Notes have to be compulsorily considered and it is only when the said Notes do not give clarity, that the terms of headings and sub-headings – as per Rule 6 of the GI Rules – can be considered. It is argued that as per Chapter Note 12 of Chapter 85, the product would fall within the CTH 8542. Rule 1 and Rule 6 of the GI Rules are set out hereunder for reference:



**“ GENERAL RULES FOR THE INTERPRETATION OF
THE HARMONIZED SYSTEM**

Classification of goods in the Nomenclature shall be governed by the following principles :

1. The titles of Sections, Chapters and sub-chapters are provided for ease of reference only; for legal purposes, classification shall be determined according to the terms of the headings and any relative Section or Chapter Notes and, provided such headings or Notes do not otherwise require, according to the following provisions:

* * *

6. For legal purposes, the classification of goods in the sub-headings of a heading shall be determined according to the terms of those sub-headings and any related sub headings Notes and, *mutatis mutandis*, to the above rules, on the understanding that only sub headings at the same level are comparable. For the purposes of this rule the relative Section and Chapter Notes also apply. unless the context otherwise requires”.

13. Thus, it is argued that Rule 1 and Rule 6 of the GI Rules clearly provide that the Chapter Notes have to be considered for the purpose of ascertaining the scope of the headings or sub-headings of the Tariff. Therefore, when in terms of the Chapter Note 12 of Chapter 85, the product falls within CTH 8542 and further, when as per Chapter Note 12, CTH 8542 takes precedence over every other heading, the learned CAAR ought not to have classified the same merely on the basis that CTH 8518 pertains to ‘microphones’. It is contended that irrespective of the description of the heading in CTH 8518, the product being a MCO and being covered within the meaning of EICs, will be covered under CTH 8542 alone.



14. To support the above contentions, the learned counsel refers to Chapter Note 12 of Chapter 85 of the First Schedule to the Customs Tariff Act, which *inter alia* provides as under:

“

CHAPTER 85

Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles

NOTES:

* * *

12. For the purposes of headings 8541 and 8542:

* * *

(b) –Electronic integrated circuits are:

* * *

(iv) Multi-component integrated circuits (MCOs): a combination of one or more monolithic, hybrid, or multi-chip integrated circuits with at least one of the following components: Silicon-based sensors, actuators, oscillators, resonators or combinations thereof, or components performing the functions of articles classifiable under heading 85.32, 85.33, 85.41, or inductors classifiable under heading 85.04, formed to all intents and purposes indivisibly into a single body like an integrated circuit, as a component of a kind used for assembly onto a printed circuit board (PCB) or other carriers, through the connecting of pins, leads, balls, lands, bumps, or pads.

For the purpose of this definition:

(1) "Components" may be discrete, manufactured independently then assembled onto the rest of the MCO, or integrated into other components.

(2) "Silicon-based" means built on a silicon substrate, or made of silicon materials, or manufactured onto integrated circuit die.

(3) (a) "Silicon-based sensors" consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of detecting physical or chemical phenomena and transducing these into electric signals, caused by resulting variations in electric properties or displacement of a



mechanical structure. "Physical or chemical phenomena" relates to phenomena, such as pressure, acoustic waves, acceleration, vibration, movement, orientation, strain, magnetic field strength, electric field strength, light, radioactivity, humidity, flow, chemical concentration, etc.

(b) "Silicon based actuators" consist of microelectronic and mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of converting electrical signals into physical movement.

(c) "Silicon based resonators" are components that consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and have the function of generating a mechanical or electrical oscillation of a predefined frequency that depends on the physical geometry of these structures in response to an external input.

(d) "Silicon based oscillators" are active components that consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of generating a mechanical or electrical oscillation of a predefined frequency that depends on the physical geometry of these structures.

For the classification of the articles defined in this Note, headings 8541 and 8542 shall take precedence over any other heading in this Schedule, except in the case of heading 8523, which might cover them by reference to, in particular, their function."

15. It is stated that Chapter Note 12 also includes components performing the functions of articles classifiable under CTH 8541 which covers Semiconductor-based sensors, and one example of the said sensor referred in Explanatory Notes to Harmonized System of Nomenclature [hereafter '*HSN*'] is a 'MEMS element used in silicon microphones as a semiconductor-based acoustic sensor'.



16. It is therefore contended that the product conforms to the explanation provided for MCO under Chapter Note 12(b)(iv) of Chapter 85 inasmuch as the product is a MCO composed of MEMS silicon-based sensor, ASIC amplifier chip, PCB substrate, shell, gold wire, and other components (capacitor-resistance sense), all formed for the purpose of converting sound signal into electrical signals indivisibly into a metal body. The product is used as a microphone component, used for installation onto PCBs of mobile phones and other electronic devices.

17. The learned counsel appearing for the appellant also relies on the decision of Coordinate Bench in *Amazon Wholesale India Pvt. Ltd. v. Customs Authority of Advance Ruling, 2023 SCC OnLine Del 7817*, wherein it was held that the mere name or nomenclature ascribed to a product should not be the decisive factor in determining its classification.

18. It is contended that the scope of CTH 8518 is limited to traditional microphones, and the MEMS Microphones would fall within the ambit of CTH 8548. Therefore, it is prayed that the impugned order be set aside.

Submissions on behalf of the Revenue

19. The learned counsel appearing on behalf of Revenue contends that the appellant has consistently described the product as an Integrated Circuit MEMS Microphone, which remains a variant of a microphone, though enhanced with MEMS technology. the appellant has also acknowledged that the product performs the primary function



of a microphone. Moreover, the technical literature submitted by it before the learned CAAR clearly identifies the product as an omnidirectional, bottom-ported, analog output MEMS microphone, and nowhere is it described as a standalone EIC.

20. The learned counsel further argues that according to common trade parlance, a MEMS microphone is essentially an electro-acoustic transducer comprising a MEMS sensor and an ASIC within a single package. The inclusion of MEMS technology, however, does not alter the fundamental identity of the product as a microphone. MEMS is merely an additional feature or enhancement and is not exclusive to microphones. It is widely used in other technologies, such as inkjet printers, accelerometers, barometers, optical switches, and gyroscopes. For instance, when MEMS technology is used in an inkjet printer, the product may be referred to as a MEMS inkjet printer, but the primary identity remains that of a printer. Similarly, in the case of microphones, whether or not MEMS technology has been used, the essential identity of the product as a microphone does not change. Therefore, it is contended that the product has been rightly classified under Tariff Item 8518 10 00.

21. It is also argued that if the appellant's primary contention is accepted, namely that its product is an EIC with silicon-based sensors functioning on PCBs, then all devices employing MEMS technology, would also have to be classified under Tariff Item 8542 39 00, instead of classifying them under their respective specific Tariff Item or CTH. It is argued that such an approach would disrupt the established



classification system by improperly reclassifying various products that utilize MEMS technology.

22. The learned counsel further contends that the argument of the appellant that the product should be specifically classified under Tariff Item 8542 39 00, taking into account the fact that Chapter Note 12 provides that CTH 8541 and 8542 take precedence over other headings, is flawed. In this regard, it is stated that the appellant has overlooked an important Explanatory Note of HSN, for CTH 8542, which states that all separate (tradable) units that are not classifiable under headings 8504, 8532, or 8541, and which do not fall under the definition of silicon-based sensors, actuators, oscillators, or combinations thereof, are excluded from the definition of an MCO. Thus, since the product is a complete device, specifically a microphone, it should be classified as such under Tariff Item 8518 10 00.

23. It is submitted that Note 2(a) of Section XVI specifies that parts which are goods falling within Chapter 84 or 85 should be classified under their respective headings. The MEMS microphone is a complete component used in devices like mobile phones, which must be classified under CTH 8518 and more particularly Tariff Item 8518 10 00.

24. The learned counsel further submits that the appellant has described the product as an Integrated Circuit MEMS Microphone. According to Rule 3(a) of the GI Rules, the heading that provides the most specific description must be preferred over more general



descriptions. In the present case, the most specific description for the product falls under CTH 8518, which covers '*Microphones and Stands therefor*'. It is contended that the present case is not a situation where multiple headings apply to different parts of the product; MEMS technology is an inherent feature of the microphone in this case, and it does not have a separate identity that would justify classification under CTH 8542 39 00. Therefore, as per Rule 3(a) of the GI Rules, the product is clearly a microphone, enhanced by MEMS technology, and is thus correctly classified under CTH 8518.

25. Therefore, it is prayed that the present appeal be dismissed as there are no grounds for interfering with the impugned order passed by the learned CAAR.

ANALYSIS & FINDINGS

26. In the aforesaid backdrop, the appellant has projected the following questions for this Court's consideration and adjudication:

“(i) Whether the Impugned Advance Ruling No. CAAR/Del/Vivo/34/2023/607 in application no. 25/2023 dated 13.12.2023, is liable to be set aside as the same was passed without appreciating the correct factual and legal position?

(ii) Whether the product in question, namely MEMS Microphones, is appropriately classifiable under Customs Tariff Item 8518 100, or whether it ought to be classified under Customs Tariff Item 8542 3900 of the First Schedule to the Customs Tariff Act, 1975?”

27. The issue which arises for our consideration is whether the product, which is currently imported under CTH 8518, and more



particularly under Tariff Item 8518 10 00, can be classified under CTH 8542 and more particularly under Tariff Item 8518 39 00.

28. Before proceeding further, it would be relevant to note that India follows HSN for the classification of goods under the Customs Tariff Act. HSN is a globally recognised system, developed by the World Customs Organization, which structures goods into distinct chapters, headings, and sub-headings for precise classification. Furthermore, HSN relies on the GI Rules to ensure that goods are classified according to their most suitable sub-heading. The Hon'ble Supreme Court elucidated the significance of HSN and the application of GI Rules, as well as the order of precedence of GI Rules, in the case of *Commissioner of Customs and Central Excise, Amritsar (Punjab) v. M/s D.L. Steels etc.*, 2022 SCC OnLine SC 863. The relevant extract of the decision is as under:

“9. The Harmonised System of Nomenclature, developed by the World Customs Organisation, has been adopted in India by way of the Customs Tariff Act, 1975, though there are certain entries in the Schedules to this Act which have not been assigned HSN codes. The Harmonised System is governed by the International Convention on Harmonised Commodity Description and Coding System, which was adopted in 1983, and enforced in January, 1988. This multipurpose international product nomenclature harmonises description, classification, and coding of goods. While the primary objective of the HSN is to facilitate and aid trade, the Code is also extensively used by governments, international organisations, and the private sector for other diverse purposes like internal taxes, monitoring import tariffs, quota controls, rules of origin, transport statistics, freight tariffs, compilation of national accounts, and economic research and analysis. In the present times, given the widespread adoption of the Harmonised System by over 200 countries, it would be extremely difficult to deal with an international trade issue involving commodities, without



advertising to the Harmonised System. The Code is the bedrock of custom controls and procedures. The HSN consists of over 5000 commodities groups, which are structured into 21 Sections and 97 Chapters, which are further divided into four and six digit subheadings. Many custom administrations, like India, use an eight or more digit commodity coding system, with the first six digits being the HSN code.

10. Classification under the Harmonised System is done by placing the good under the most apt and fitting sub-heading. This is done by choosing the appropriate Chapter, Heading, and sub-heading respectively. To facilitate interpretation and classification, each of the 97 Chapters in the HSN contain corresponding Chapter Notes, General Notes, and Explanatory Notes applicable to the Headings and sub-headings within that Chapter. In addition, there are six General Rules of Interpretation applicable to the Harmonised System as a whole.

11. GRI 1 states that the titles of Sections, Chapters, and sub-Chapters are provided for ease of reference only. Therefore, they have no legal bearing on classification. Classification is to be effected: (a) according to the terms of the Headings and any relative Section or Chapter Notes; and, (b) provided the Headings or Chapter Notes do not otherwise require according to the provisions thereafter contained, viz., GRIs 2 to 6. **Thus, it is clear from the above that: (i) the Headings, and, (ii) the relative Section or Chapter Notes must be considered before classification is done. Only after this exercise is done, if a conflict in classification still persists, the subsequent GRIs are to be resorted to.** GRI 2 is not germane to the present case and therefore, we make no reference to it. GRI 3 provides for classification in the event when the goods are classifiable under two or more Headings. As per GRI 3, when by application of GRI 2(b) or for any other reason, the goods are, prima facie, classifiable under more than one Heading, then; (a) the 'most specific description' is preferred, (b) a mixture of different goods will be classified as that good which gives the mixture its 'essential characteristic', and (c) when goods cannot be classified with reference to (a) or (b), they should be classified under the Heading which occurs last in the numerical order. The order of priority therefore is; (a) specific description, (b) essential character, and (c) the Heading which occurs last in numerical order. However, GRI 3 can only take effect provided the terms of the Heading or Section or Chapter Notes do not otherwise require. GRI 4



states that when the goods cannot be classified in accordance with the aforementioned rules, they shall be classified under the heading appropriate for the goods “to which they are most akin”. GRI 5 applies exclusively to cases and packing material, and therefore, is not apropos. GRI 6 states that the classification of goods in the subheadings of a Heading shall be determined according to the terms of those sub-headings and any related Notes, and mutatis mutandis to the above GRIs, on the understanding that only sub-headings at the same level are comparable.”

(Emphasis added)

29. Therefore, Rule 1 of GI Rules must be considered first, which provides that the Headings, and (ii) the relative Section or Chapter Notes are to be considered for the purpose of classification of a product.

30. The Hon’ble Supreme Court in *M/s D.L. Steels (supra)* also discussed the ‘common parlance’ test of classification of products. The observations in this regard as are follows:

“12. We would, at this stage, take on record the well-settled principle that words in a taxing statute must be construed in consonance with their commonly accepted meaning in the trade and their popular meaning. When a word is not explicitly defined, or there is ambiguity as to its meaning, it must be interpreted for the purpose of classification in the popular sense, which is the sense attributed to it by those people who are conversant with the subject matter that the statute is dealing with. This principle should commend to the authorities as it is a good fiscal policy not to put people in doubt or quandary about their tax liability. The common parlance test is an extension of the general principle of interpretation of statutes for deciphering the mind of the law-maker. However, the above rule is subject to certain exceptions, for example, when there is an artificial definition or special meaning attached to the word in a statute, then the ordinary sense approach would not be applicable.”



31. The Coordinate Bench of this Court in *Amazon Wholesale India Pvt. Ltd. (supra)*, discussed the tests evolved by way of judicial precedents with regard to classification of products under the Customs Tariff Act. It was observed as under:

“37. In our considered opinion, the tests evolved by courts in connection with the issue of classification such as nomenclature, common parlance, principal function, primary and incidental purpose are all aids and rules of guidance liable to be cumulatively borne in consideration in order to ascertain the true character of a product. While none of those tests are accorded preeminence, it is ultimately for the authorities to ascertain which of those rules would merit adoption and represent an accurate understanding of the nature of the product.

38. Regard must also be had to the fact that the general tests as evolved by courts must cede to the rules of interpretation which may have been specifically drawn. It is in such contingencies that our precedents bid us to accord precedence to GI Rules, Chapter Headings and Notes appended thereto.”

(Emphasis added)

32. Since the appellant currently imports the product under CTH 8518, and more particularly Tariff Item 8518 10 00 of the First Schedule of the Customs Tariff Act, the CTH 8518 is set out hereunder:



8518	MICROPHONES AND STANDS THEREFOR; LOUDSPEAKERS, WHETHER OR NOT MOUNTED IN THEIR ENCLOSURES; HEADPHONES AND EARPHONES, WHETHER OR NOT COMBINED WITH A MICROPHONE, AND SETS CONSISTING OF A MICROPHONE AND ONE OR MORE LOUDSPEAKERS; AUDIO-FREQUENCY ELECTRIC AMPLIFIERS; ELECTRIC SOUND AMPLIFIER SETS			
8518 10 00	- Microphones and stands therefor <i>Loudspeakers, whether or not mounted in their enclosures :</i>	u	15%	-
8518 21	-- <i>Single loudspeakers, mounted in their enclosures:</i>			
8518 21 10	--- Wireless	kg.	20%	-
8518 21 90	--- Other	kg.	20%	-
8518 22	-- <i>Multiple loudspeakers, mounted in the same Enclosure:</i>			
8518 22 10	--- Wireless	kg.	20%	-
8518 22 90	--- Other	kg.	20%	-
8518 29	-- <i>Other:</i>			
8518 29 10	--- Wireless	kg.	20%	-
8518 29 90	--- Other	kg.	20%	-
8518 30	- <i>Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers:</i>			
8518 30 11	---- True Wireless Stereo [TWS] Sound channel not connected by wire]	kg.	20%	-
8518 30 19	---- Other	kg.	20%	-
8518 30 20	---- Headphones and earphones, whether or not combined with a microphone, and capable of connecting only through wired medium	kg.	20%	-
8518 30 90	--- Other	kg.	20%	-
8518 40 00	- Audio-frequency electric amplifiers	u	15%	-
8518 50 00	- Electric sound amplifier sets	u	10%	-
8518 90 00	- Parts	u	15%	-

33. Similarly, CTH 8542, including Tariff Item 8542 39 00, under which the appellant now seeks the classification of its product, is set out hereunder:

8542	ELECTRONIC INTEGRATED CIRCUITS			
	- <i>Electronic integrated circuits:</i>			
8542 31 00	-- Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits	u	Free	-
8542 32 00	-- Memories	u	Free	-
8542 33 00	-- Amplifiers	u	Free	-
8542 39 00	-- Other	u	7.5%	-
8542 90 00	- Parts	kg.	Free	-



34. To adjudicate the issue in question, it shall be relevant and necessary to take note of the Product Description and Product Functioning, placed before the learned CAAR by the appellant. The same is set out below:

“Product Description

5. The Product for which advance ruling is sought is a miniature, high-performance, low-power, matched sensitivity silicon microphone. It is characterised as a Micro Integrated Circuit Microphone which is composed of MEMS silicon sensor components, an Application-Specific Integrated Circuit ("ASIC") amplifier chip, PCB substrate, shell, Gold Wire, and other components (capacitor-resistance sense). Additionally, a Land Grid Array ("LGA") packaging method is used to package the above components inseparably. The detailed composition of same can be referred from the attached product catalogue, datasheet and technical information and are annexed as (Annexure D, Annexure E and Annexure F) respectively.

Product Functioning

6. The Product is an integrated circuit which acts as an energy conversion device that performs the function of converting sound signals into electrical signals. The Product has a MEMS sensor and an ASIC chip which is attached to the PCB and LGA is packaged together through a semiconductor process inside a metal shell (nickel-plated brass). It functions as the sound is transmitted to the diaphragm of the MEMS to cause vibration, and the capacitance between the electrodes changes, thereby realizing the conversion from the acoustic signal to the electrical signal.

7. The Product can be installed on the PCB boards of electronic products such as mobile phones, tablet computers, and notebook computers through conductive voltage points to realize the function of converting sound signals into electrical signals. The Product is suitable for applications such as Headsets, Portable electronics, Cell phones, Laptop Computers, Tablets, Portable Music Recorders and other portable electronic devices where excellent wideband audio performance and RF immunity are required.”

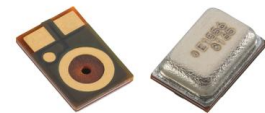


35. In the product description, the appellant clearly states that the product is a miniature, high-performance, low-power, matched sensitivity silicon ‘microphone’.

36. Further, we also note that while the appellant had sought a ruling for the purpose of classifying the product under Tariff Item 8542 39 00, the appellant had itself placed before the learned CAAR, the technical literature of the product, relevant portions of which are extracted below:

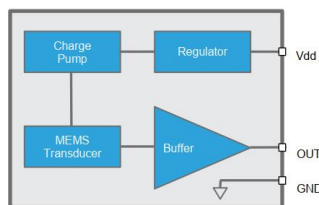


The SPV0842LR5H-1 is a miniature, high-performance, low power, matched sensitivity bottom port silicon microphone. Using Knowles’ proven high performance SiSonic™ MEMS technology, the SPV0842LR5H-1 consists of an acoustic sensor, a low noise input buffer, and an output amplifier. These devices are suitable for applications such as cellphones, smart phones, laptop computers, sensors, digital still cameras, portable music recorders, and other portable electronic devices where excellent wideband audio performance and RF immunity are required.



PRODUCT FEATURES

- Matched Sensitivity
- LGA Package
- Flat Frequency Response
- Low Current
- RF Shielded
- Bottom Port
- Ultra-Stable Performance
- Omnidirectional
- Standard SMD Reflow



TYPICAL APPLICATIONS

**MSM381A2718Z9DM2E**

Analog output MEMS microphone



苏州敏芯微电子技术股份有限公司

MEMSensing Microsystems (Suzhou, China) Co., Ltd.

**GENERAL DESCRIPTION**

MSM381A2718Z9DM2E is an omnidirectional, Bottom-ported, analog output MEMS microphone. It has high performance and reliability. It is with enhanced RF immunity performance .

MSM381A2718Z9DM2E is available in a thin 2.75 mm × 1.85 mm × 0.9 mm metal can LGA package. It is SMT compatible with no sensitivity degradation.

APPLICATIONS

- ✧ Mobile Phone
- ✧ Laptop
- ✧ Tablet computer
- ✧ Bluetooth headset
- ✧ Earphone
- ✧ Wearable intelligent equipment

37. This technical literature, relied upon by the appellant, itself describes the product as a “microphone” or “MEMS microphone” and does not use the term “Integrated Circuit MEMS Microphone” anywhere. This supports the view of this Court that the core identity of the product is a microphone, though it is enhanced or powered by MEMS technology.

38. Thus, while the appellant has referred to the product as an “Integrated Circuit MEMS Microphone”, it appears this terminology has been selectively chosen for potential classification advantage. The correct nomenclature for the product should simply be “Microphone” or “MEMS Microphone” or “MEMS-Enabled Microphone”.

39. It is also clear from a reading of the ‘Product Functioning’ provided by the appellant that the product acts as an energy



conversion device and “performs the functions of converting sound signals into electrical signals”.

40. In this regard, it is interesting to note that Explanatory Notes to the HSN provide that a ‘microphone’ converts sound vibrations into corresponding variations or oscillations of electric current. The relevant extract of HSN reads as under:

(A) MICROPHONES AND STANDS THEREFOR

Microphones convert sound vibrations into corresponding variations or oscillations of electric current, thus enabling them to be transmitted, broadcast or recorded. According to their working principle, they include :

41. Accordingly, the product in question, being imported by the appellant, is — undoubtedly and concededly — a device that converts sound signals into electrical signals, which aligns with the function of a microphone. Even though the appellant does not specifically state in the ‘Product Functioning’ section of its application that the device functions precisely as a microphone, it is apparent that this is its primary function. It is also not the appellant’s contention that the product performs any functions beyond those typically associated with a microphone.

42. At this stage, an analogy with an amplifier may also be relevant. Amplifiers are classified under CTH 8542, which covers EICs, while audio-frequency electric amplifiers are included under CTH 8518. The Explanatory Notes to the HSN in respect of microphones mention that “microphones are sometimes rendered more sensitive by the addition of amplifiers.” What manifests from the same is that an amplifier, which is classified under CTH 8542 as an EIC, can be integrated with



a microphone to enhance sensitivity; however, the essential nature of the product so created remains that of a microphone.

43. In a similar vein, the product under scrutiny here is unequivocally a microphone. While it may contain a MEMS sensor or other components such as an integrated circuit or specific enabling technology, its core identity as a microphone remains unchanged.

44. It is also the own case of the appellant that the subject product can be installed on the PCBs of electronic products such as mobile phones, tablets, computers, etc. through conductive voltage points to realize the function of converting sound signals into electrical signals. Thus, though the product may be ultimately put to use in a variety of gadgets and equipment, yet in all such equipment, it would perform the function of a microphone only.

45. The appellant has primarily relied on the Chapter Note 12(b)(iv) of Chapter 85, to contend that the product would fall under the definition of an MCO, and thus classifiable under CTH 8542. However, we observe that the Explanatory Notes to the HSN specify the following:

“All separate (tradeable) units, which are not classifiable under 85.04, 85.32, 85.33, 85.41 or which do not fall under the definition of silicon-based sensors, actuators, resonators, oscillators and combinations thereof are excluded from the definition of an MCO (e.g., transformers (heading 85.04) or magnets (heading 85.05)).”

46. Thus, we have no hesitation in concurring with the finding of the learned CAAR that the product, which appears to be an assembly,



constitutes a complete machine or device i.e. microphone and therefore, is to be classified as such.

47. The appellant's contentions are premised on the presence of technical components within the product, notably the MEMS sensor and ASIC chip, and thus, according to the appellant, the product should be placed under CTH 8542 as an EIC since the same is an MCO. However, while the product i.e. microphone contains these elements, it is important to note that its fundamental purpose and function remains that of a microphone, i.e. converting sound signals into electrical signals.

48. We are of the opinion that, **it is not the technology which is used in the product that defines the product and decides its classification under the CTH, but it is the product (which may be created using a particular technology) which decides the classification.** For this reason, it is the microphone which has the technology of MEMS, which adds value to the microphone, and it is not the microphone which is adding value to the technology of MEMS. The inclusion of MEMS technology enhances the product's function but does not change its primary identity as a microphone. In the given case, the product is not a stand-alone sensor or an EIC.

49. In the given facts, we also deem it apposite to consider Note 4 of Section XVI of the Customs Tariff Act, which provides as under:

“4. Where a machine (including a combination of machines) consists of individual components (whether separate or inter connected by piping, by transmission devices, by electric cables or by other devices) intended to contribute together to a clearly defined function covered by one of the headings in Chapter 84



or Chapter 85, then the whole falls to be classified in the heading appropriate to that function.”

50. Accordingly, Note 4 clarifies that when a machine comprises individual components designed to work together to fulfill a clearly defined function covered by headings in Chapter 84 or Chapter 85, the entire assembly should be classified under the heading appropriate to that function.

51. Considering this too, it can be inferred that where the machine (i.e. product in question – microphone) consists of individual components (such as MEMS sensors, ASIC, etc.) which are interconnected, and are intended to contribute together to a clearly defined function – that is conversion of sound signals to electrical signal and thus act as a microphone – the product should be classified in the CTH which is appropriate to such function i.e. CTH 8518, and more particularly Tariff Item 8518 10 00.

52. This is not a case where the appellant is importing a separate integrated circuit that could be combined with various other components to create devices with diverse functions. Had the appellant imported an individual integrated circuit (such as an ASIC chip) or standalone MEMS sensors, our findings may have differed. However, the item being imported is a fully assembled MEMS microphone, a final product with integrated components like the ASIC chip (an EIC) and MEMS sensor, pre-packaged and mounted on a PCB, creating a complete and tradable unit: a microphone.



53. In other words, it is not the case of the appellant that it is importing only an integrated circuit *sans* the microphone. Had it been the case, our conclusion may have been different.

54. Thus, considering the Headings, Section Notes, Chapter Notes of the Customs Tariff Act as well as the Explanatory Notes to HSN, we are of the firm view that the contention of the appellant that the product should be classified as an EIC, under CTH 8542, and not as a microphone under CTH 8518, is unmerited.

55. The present appeal is accordingly dismissed.

SWARANA KANTA SHARMA, J

VIBHU BAKHRU, J

NOVEMBER 20, 2024/ns