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EIA ENGINEERING BULLETIN

Integrated Passive Device (IPD) Definitions

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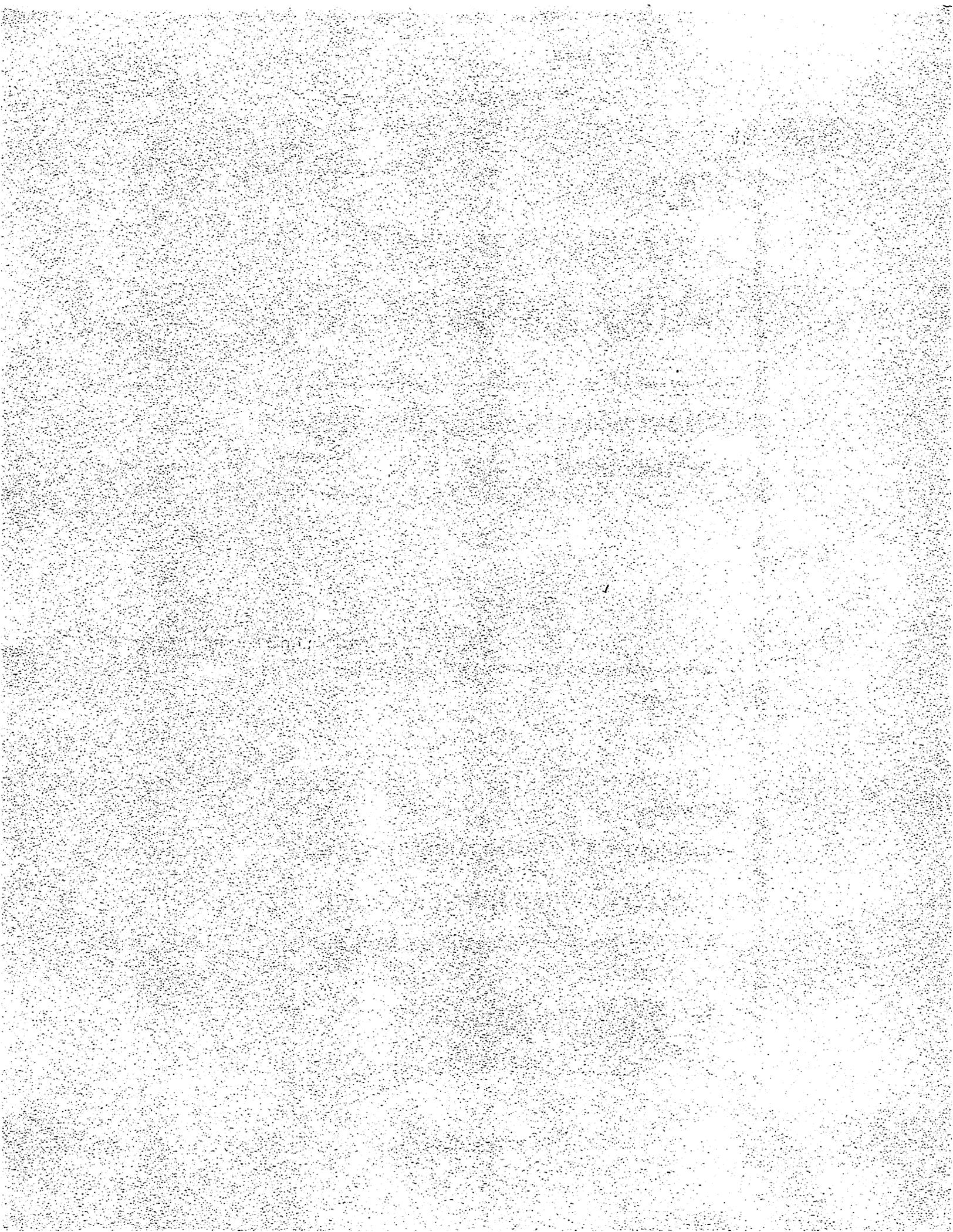
FEBRUARY 1999

ELECTRONIC INDUSTRIES ALLIANCE

Electronic Components, Assemblies, Equipment & Supplies Association



Electronic Components, Assemblies, Equipment & Supplies Association
A Sector of the Electronic Industries Alliance



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(From Project Number 4185, formulated under the cognizance of the P-10 Integrated Passive Devices Committee.)

Published by

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Engineering Department
2500 Wilson Boulevard
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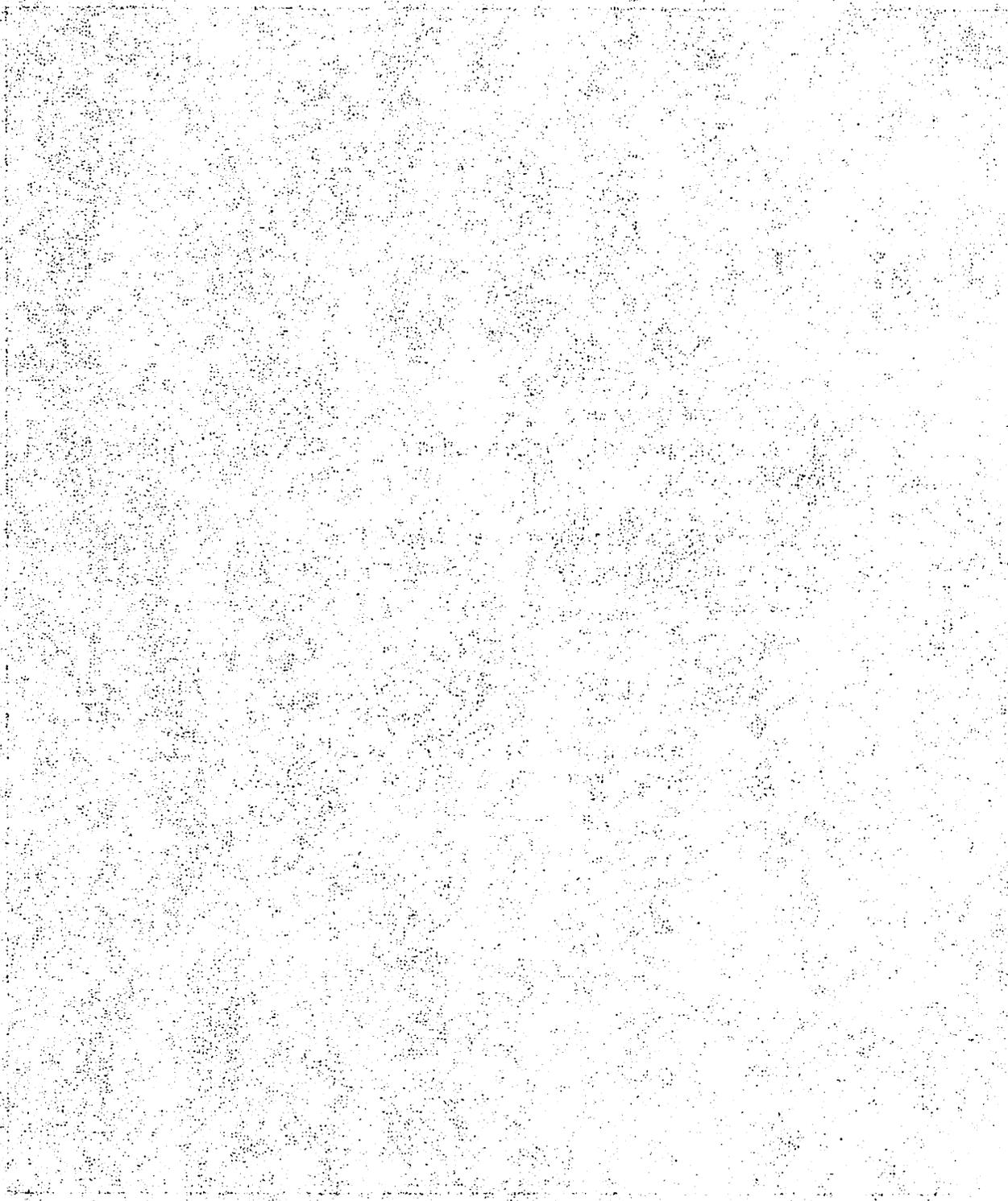
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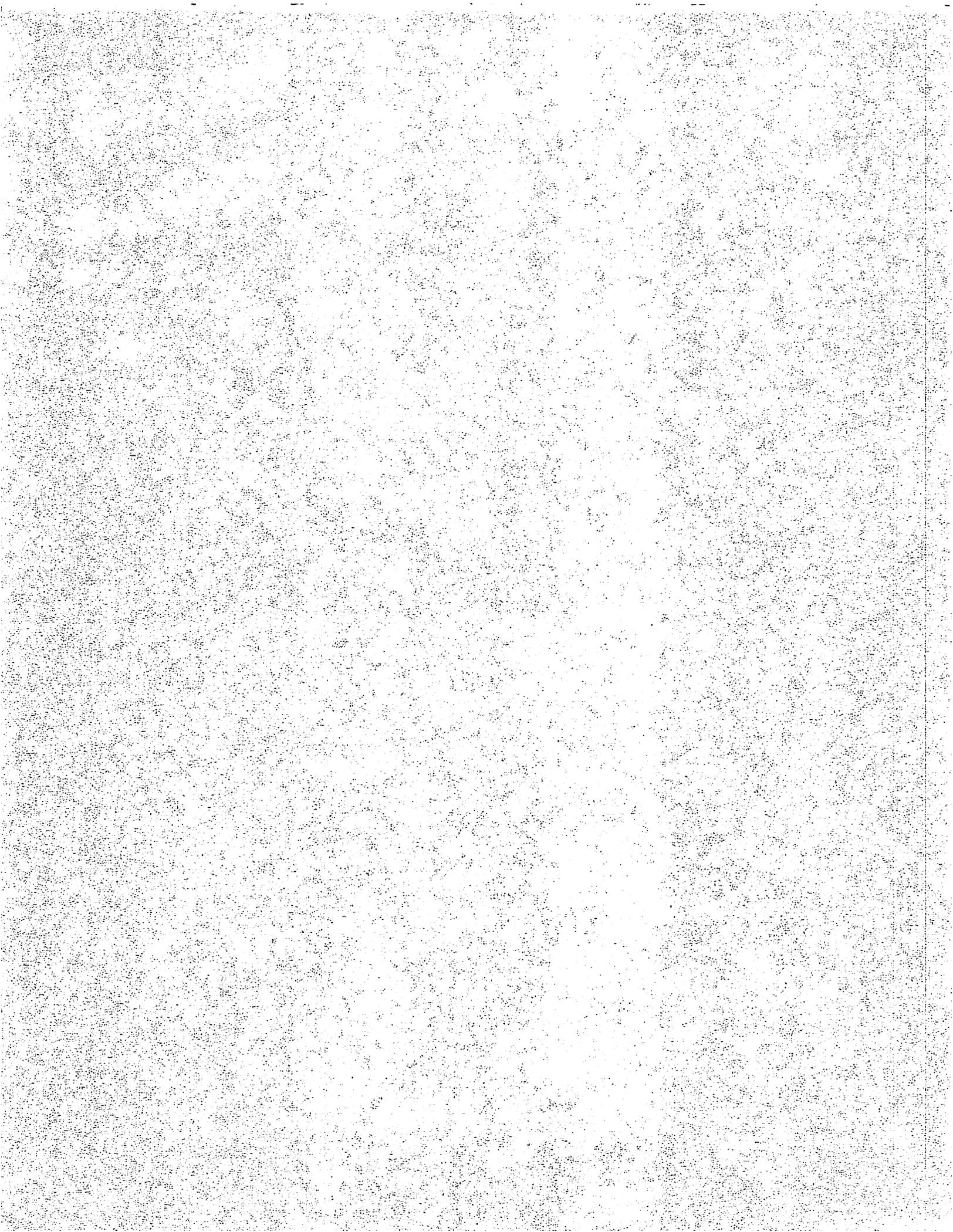
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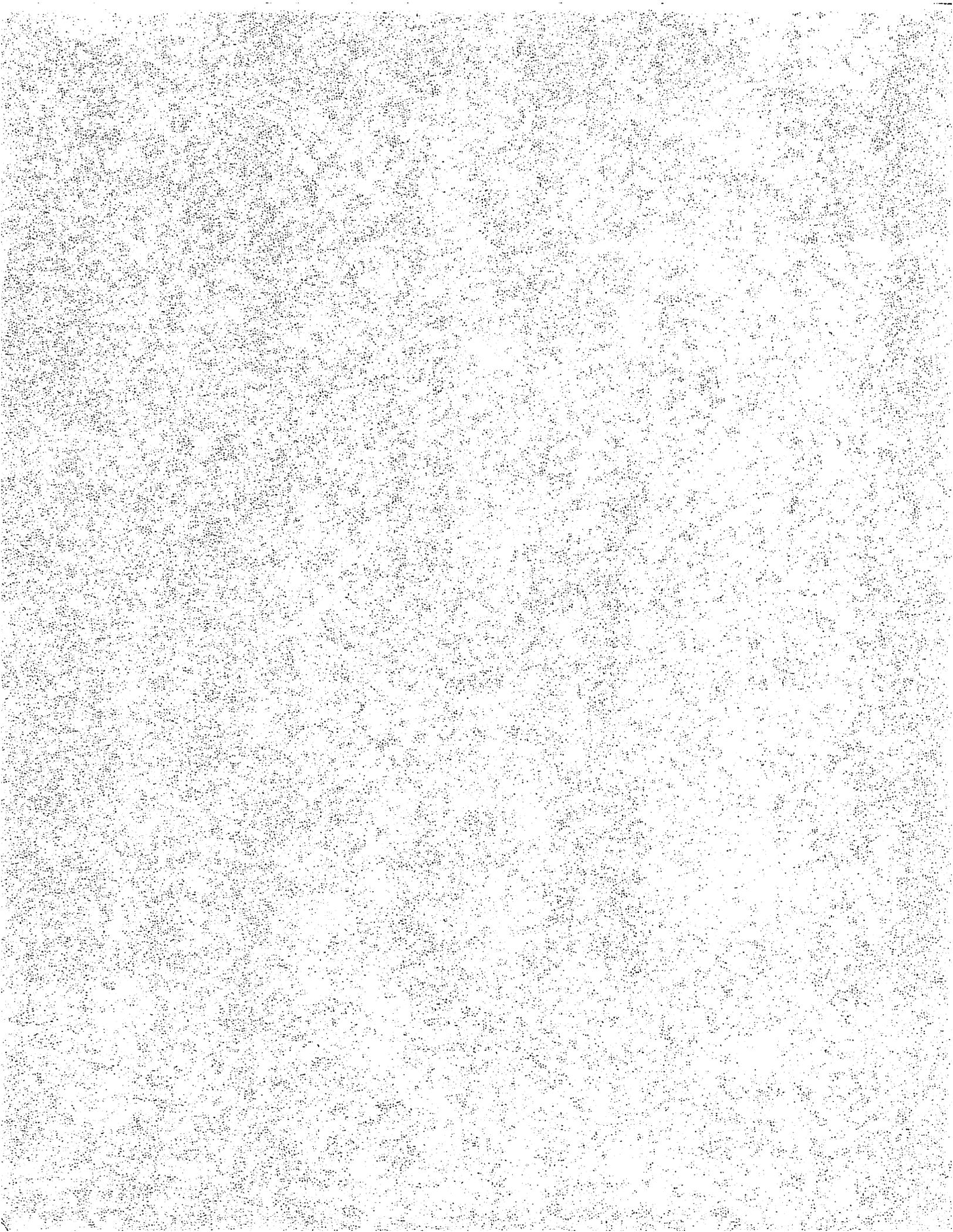
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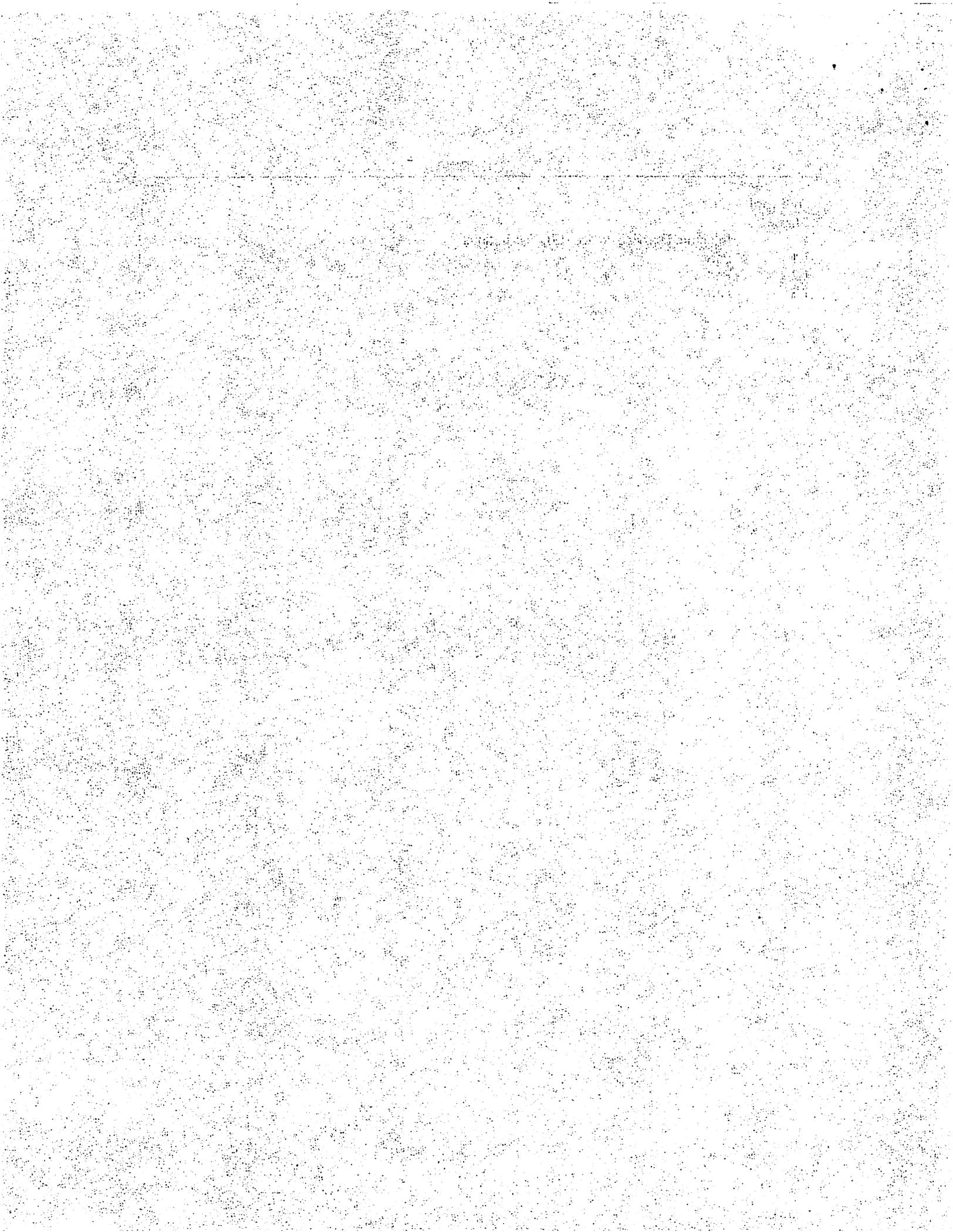


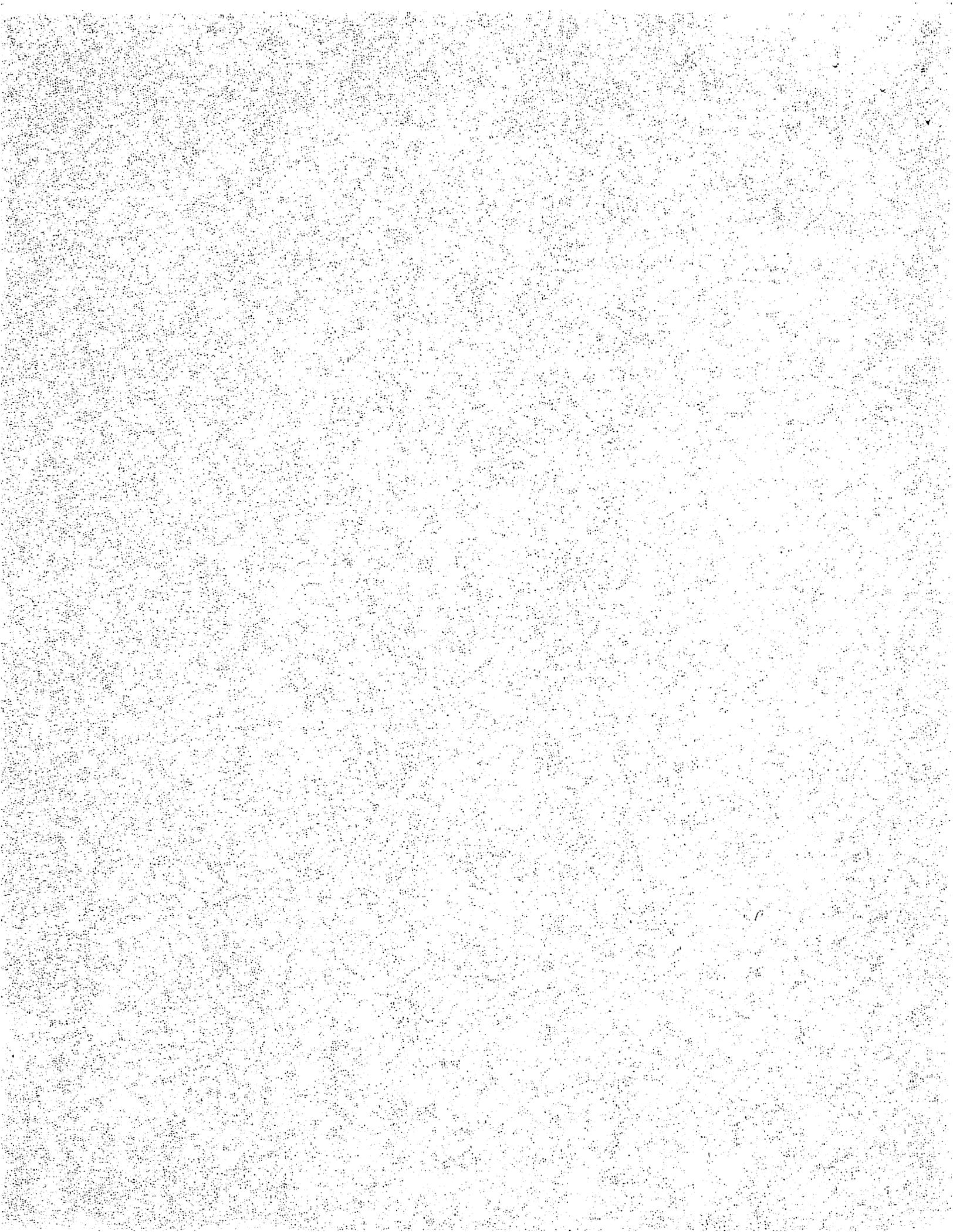




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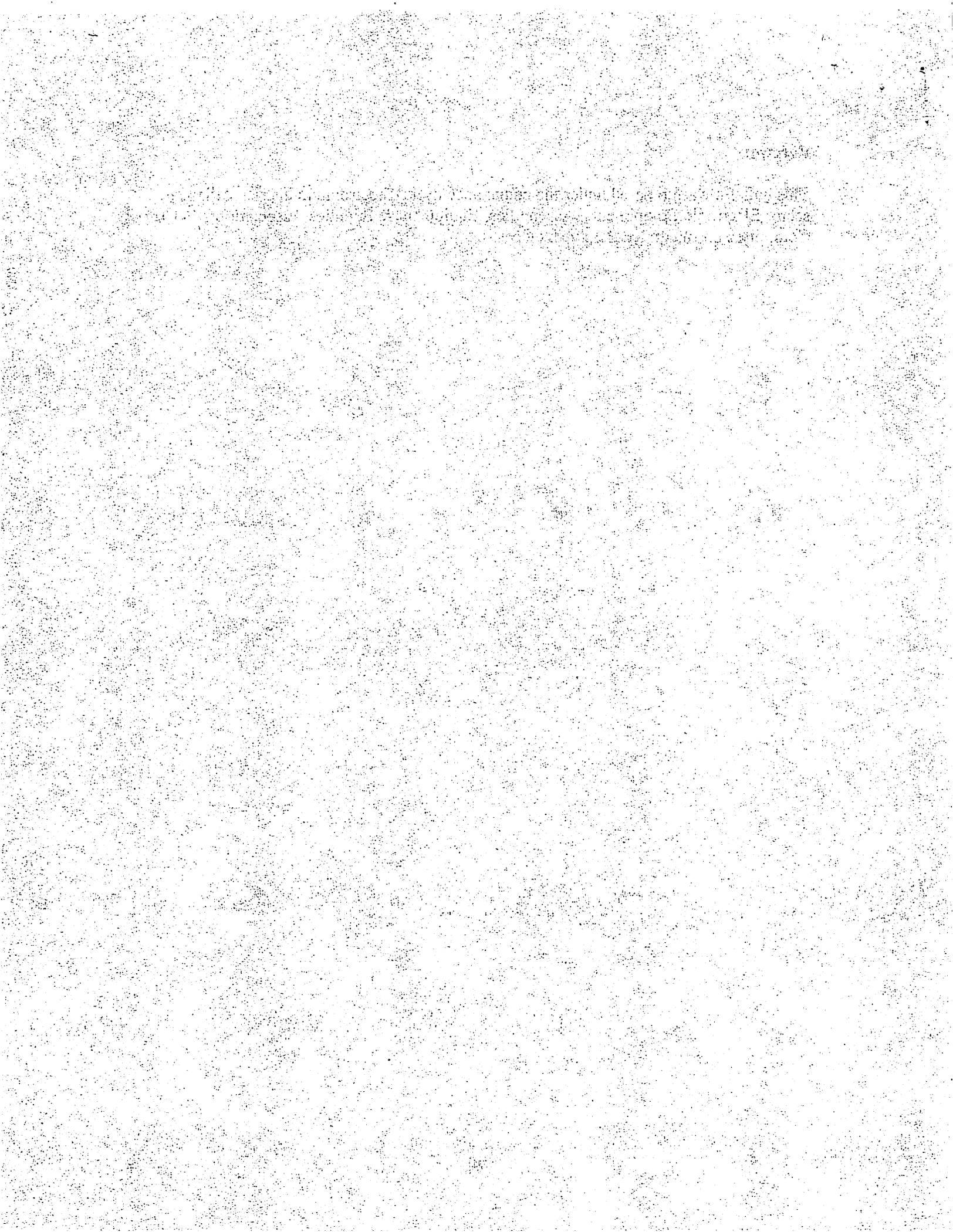
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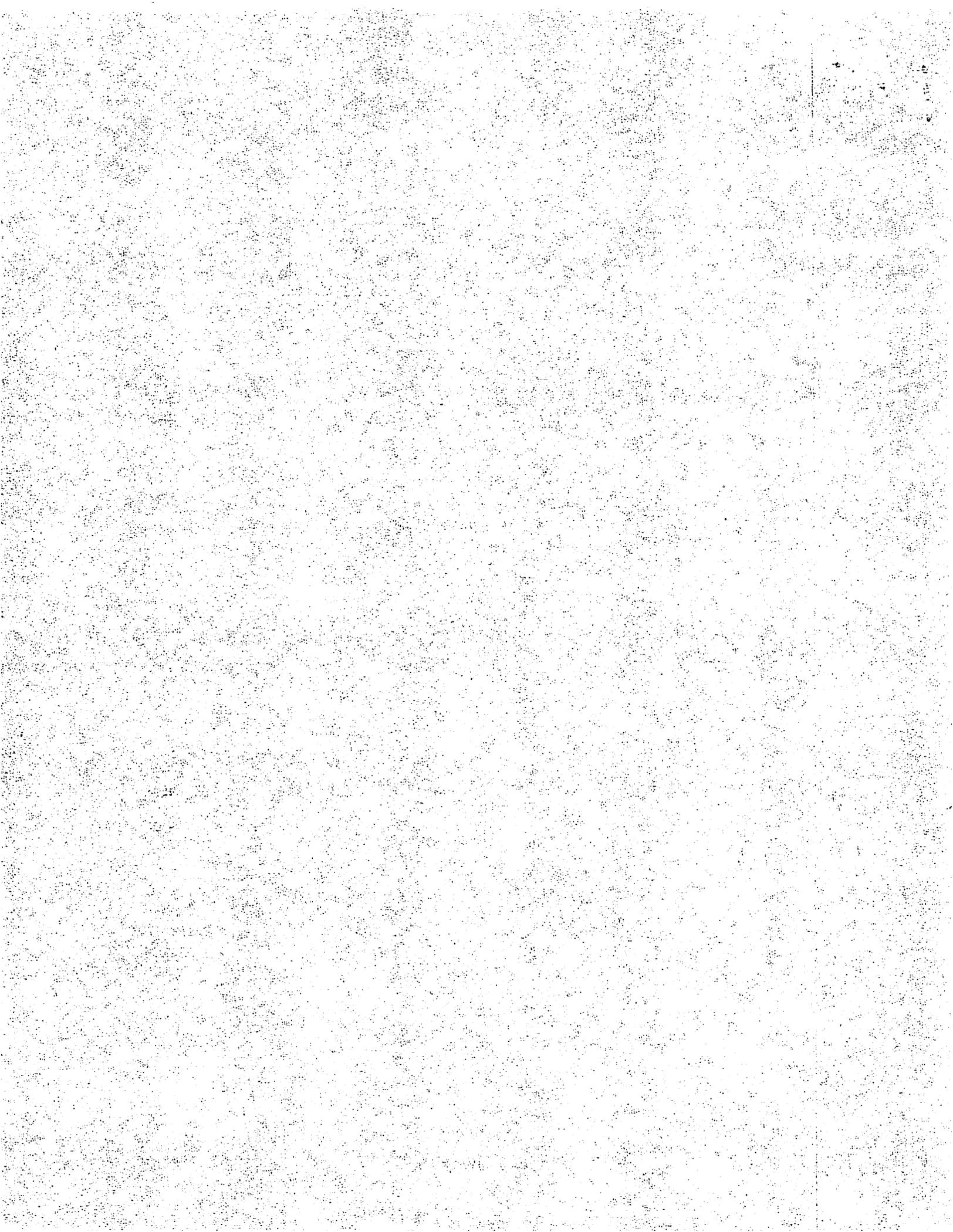




Foreword

This bulletin was prepared under the cognizance of the Electronic Industries Alliance sector Electronic Components, Assemblies, Equipment & Supplies Association's P-10 Committee on Integrated Passive Devices.





1 Integrated passive device (IPD) definitions

1.1 Type 1

An integrated device, consisting of more than one basic electrical functions (resistive, capacitive, inductive and/or circuit protective) and may include an active or semiconductive function, that is manufactured on a single substrate and does not include any "attached" discrete or integrated devices.

This includes thin film function on ceramic/glass and silicon substrates and MLC filters.

1.2 Type 2

An integrated device, consisting of more than one basic electrical functions (resistive, capacitive, inductive and or circuit protection function) and may include an active or semiconductive function, that is manufactured on one or more substrates and does include "attached" discrete and or integrated devices, but has an epoxy "back-filled", molded or metal-cased package.

This includes: passive communication modules; power converters; automotive modules; passive and active delay lines; crystal oscillators.

1.3 Type 3

An integrated device, consisting of more than one basic electrical functions (resistive, capacitive, inductive and or circuit protective) and may include an active or semiconductive function, that is manufactured on one substrate and does include "attached" discrete and or integrated devices, packaged using a conformal type or glob-top coating.

This includes: conformal-coated resistor-capacitor networks with soldered discrete ceramic capacitors.

1.4 Type 4

An integrated device, consisting of more than one basic electrical functions (resistive, capacitive and or inductive) and may include an active or semiconductive function, that is manufactured on one or more substrates and does include "attached" discrete and or integrated devices, but is an open/unsealed package.

This includes: fiber optic receiver/transceiver models; single in-line memory modules (SIMMs); flip-chip on an open substrate.

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