

# 32-CHANNEL DISCRETE-TO-DIGITAL INTERFACE "R3D3"

## DESCRIPTION

The DD-03232 devices are 32-channel discrete-to-digital interfaces with universal HIRF-isolated inputs to handle 28 V/Open, Open/GND and 28 V/Gnd signals.

Using comparators in a triple-redundant configuration, the devices will take consensus on input states and raise a flag when consensus fails. Its output is an addressable 8-bit or 16-bit tri-state port, selectable for channel data, status, bounce, built-in self-test (BIST) and major fault, compatible with TTL logic.

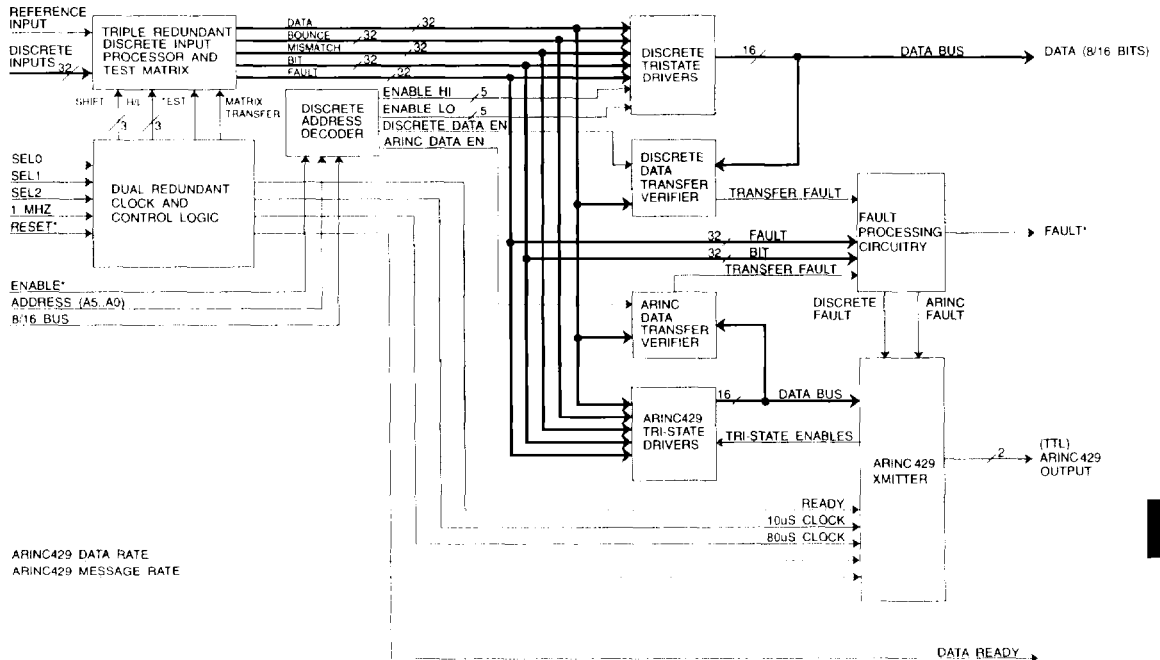
## APPLICATIONS

The design specifically addresses chip-level redundancy, built-in self-test autonomy, fault isolation and tolerance.

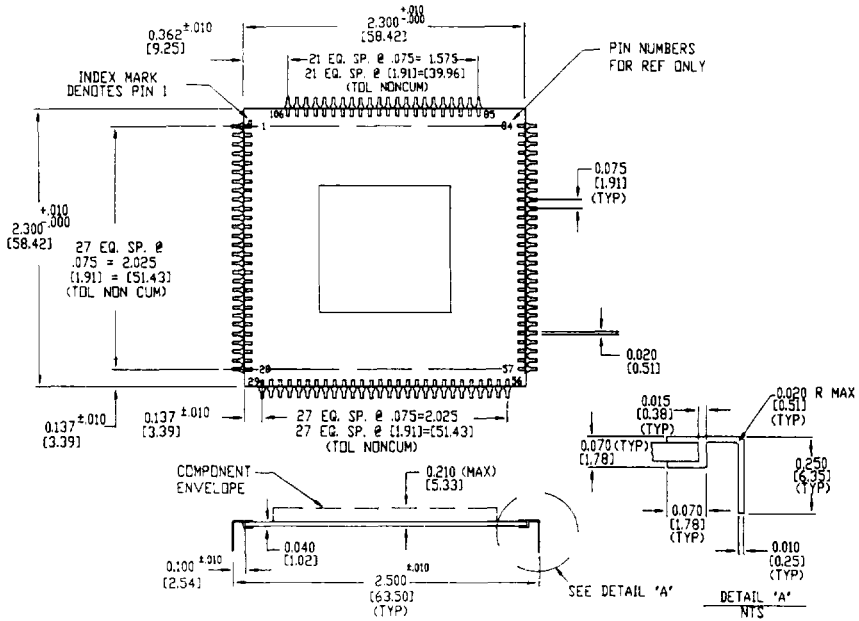
With high reliability and low cost, these features enable the devices to serve a variety of interface requirements in avionics applications, including flight critical, essential, and non essential functions. The optional ARINC 429 output port is particularly well-suited to data-concentrator requirements.

## FEATURES

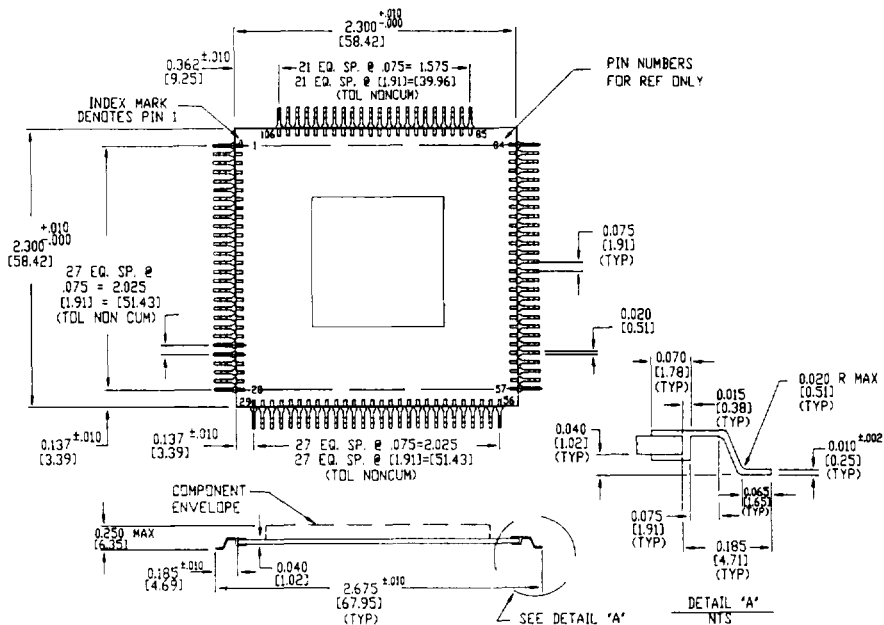
- **Triple Redundancy**
- **HIRF Layer**
- **Universal Inputs**  
 28 V/Gnd  
 Open/Gnd  
 28 V/Open
- **Built-in Self-Test**
- **Soft Failure Reporting**  
 Deferred Maintenance  
 Higher MTBUR
- **Optional ARINC 429 Output Port**



**FIGURE 1. DD-03232 BLOCK DIAGRAM**



**FIGURE 11. DD-03232 PLUG-IN PACKAGE MECHANICAL OUTLINE**



**FIGURE 12. DD-03232 SURFACE MOUNT PACKAGE MECHANICAL OUTLINE**

**ORDERING INFORMATION**

DD-03232DC-100

- ARINC 429 Port Option:**
  - 0 = Without ARINC 429 output
  - 4 = With ARINC 429 output
- Screening:**
  - 0 = Standard DDC Procedures
  - 1 = Military Processing available (ceramic only)
  - 2 = Burn-in (ceramic only)
- Temperature Range:**
  - 1 = -55 to +125 °C (ceramic only)
  - 2 = -40 to +85 °C
  - 3 = 0 to +70 °C
- ASIC Package Type:**
  - P = Plastic
  - C = Ceramic
- Package Style:**
  - D = Plug-in
  - F = Surface Mount

**OPTIONAL HARDWARE**

DD-03182DC-100 — ARINC 429 Line Driver

- Not Used**
- Screening:**
  - 0 = Standard DDC Procedures
  - 2 = Burn-in (ceramic only)
- Temperature Range:**
  - 1 = -55 to +125 °C (ceramic only)
  - 2 = -40 to +85 °C
- Package Type:**
  - P = Plastic
  - C = Ceramic
- Package Style:**
  - D = CERDIP (ceramic only)
  - G = Gull Wing (plastic only)
  - P = PLCC (plastic only)

DD-03200 — DD-03232 Socket  
(Converts 75 mil. centers plug-in to 100 mil. centers plug-in for wire-wrap breadboard evaluation.)

**OTHER APPLICABLE DOCUMENTS**

RTCA/DO-160C: Environmental Conditions and Test Procedure for Airborne Equipment.

MIL-H-38534: General Specification for Hybrid Microcircuits.

