

T-51-11

## Three Five Product Information

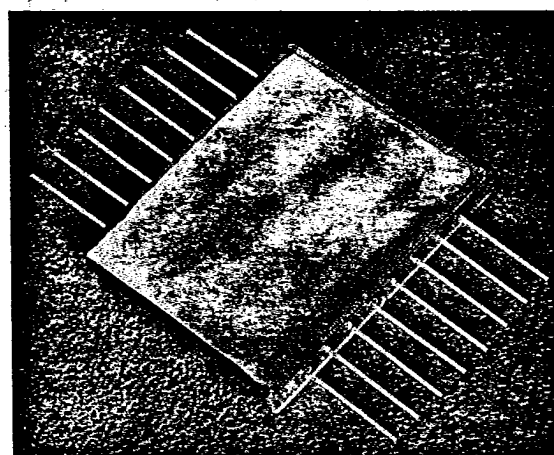


# GaAs MMIC Switch P35-4254

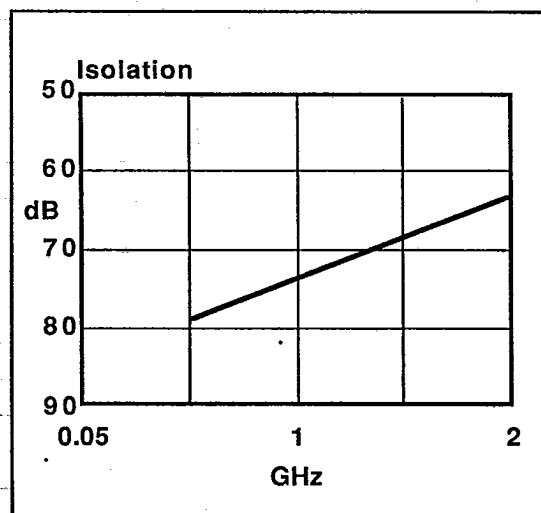
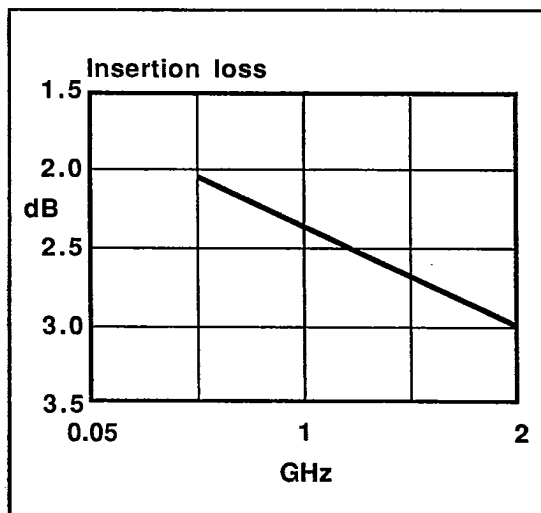
**2GHz SP4T non-reflective switch  
with CMOS/TTL compatible driver**

## Features

- High Isolation Broadband GaAs switch with CMOS/TTL compatible interface.
- 10MHz to 2GHz frequency range.
- Low power consumption.
- Non-reflective outputs in off-state.
- Glass-metal seal package.



## Typical Performance



**P35-4254****RF Specification ( $-55^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ )**

| Parameter        | Conditions        | Min. | Typ. | Max. | Units |
|------------------|-------------------|------|------|------|-------|
| Insertion Loss   | Frequency 500MHz  | -    | 2.1  | 2.7  | dB    |
|                  | (See Note 1) 1GHz | -    | 2.3  | 3.0  |       |
|                  | 2GHz              | -    | 2.9  | 3.6  |       |
| Isolation        | Frequency 500MHz  | 70   | 75   | -    | dB    |
|                  | (See Note 1) 1GHz | 70   | 75   | -    |       |
|                  | 2GHz              | 60   | 65   | -    |       |
| VSWR             | Frequency 500MHz  | -    | 1.25 | 1.2  |       |
|                  | (See Note 2) 1GHz | -    | 1.25 | 1.3  |       |
|                  | 2GHz              | -    | 1.35 | 1.4  |       |
| VSWR             | Frequency 500MHz  | -    | 1.25 | 1.3  |       |
|                  | (See Note 3) 1GHz | -    | 1.25 | 1.3  |       |
|                  | 2GHz              | -    | 1.25 | 1.4  |       |
| P <sub>1dB</sub> | Frequency 500MHz  | +20  | +24  |      | dBm   |
|                  | 2GHz              | +20  | +24  |      |       |

**D.C. and Switching Specification**

| Parameter                                          | at 25°C |     |     | $-55^{\circ}\text{C}$ to $+90^{\circ}\text{C}$ |     | Units |
|----------------------------------------------------|---------|-----|-----|------------------------------------------------|-----|-------|
|                                                    | Min     | Typ | Max | Min                                            | Max |       |
| I <sup>+</sup> , Quiescent Current from +ve Supply |         |     | 8   | -                                              | 8   | mA    |
| I <sup>-</sup> , Quiescent Current from -ve Supply |         |     | 15  | -                                              | 15  | mA    |
| Input Leakage Current (Control I/Ps)               |         |     | 0.1 |                                                | 1.0 | μA    |
| Rise and Fall Time (10%, 90% R.F.)                 |         | 10  | 25  |                                                | 25  | ns    |
| Delay Time (50% Logic, 50% R.F.)                   | 80      | 110 | 130 | 60                                             | 160 | ns    |

**Operating Requirements**

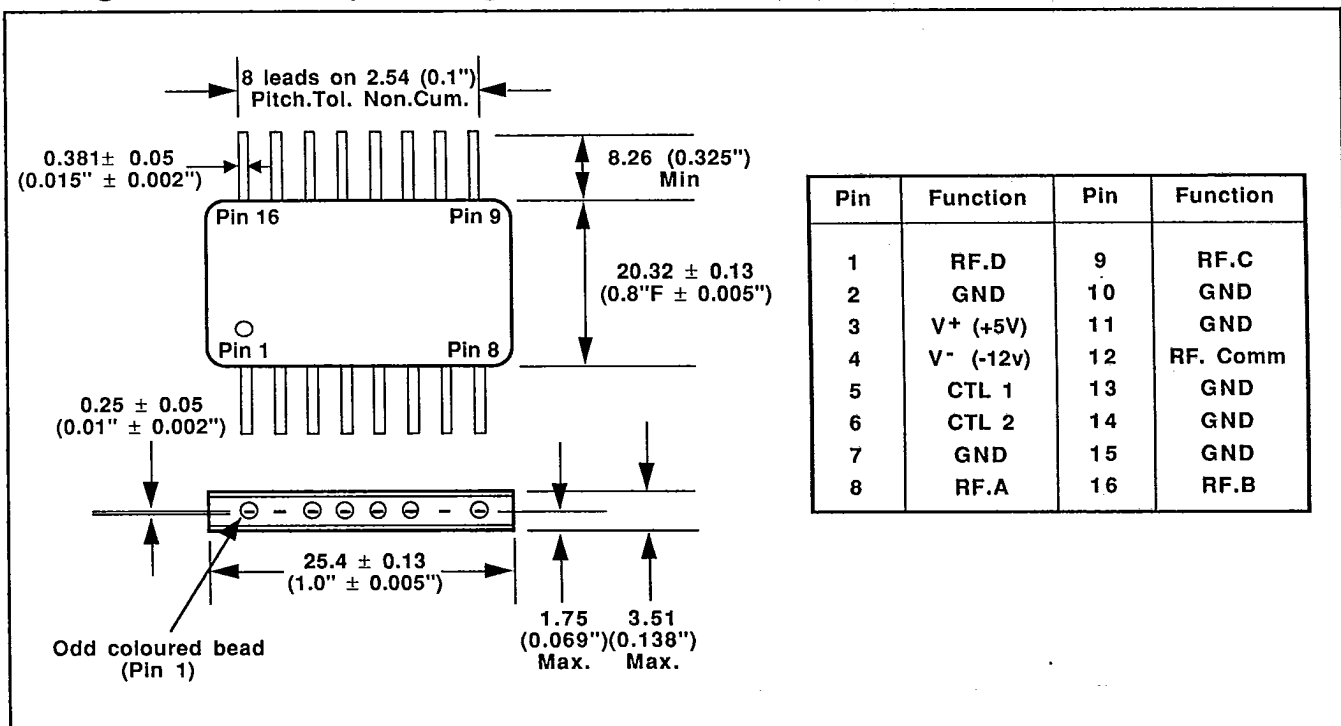
| Parameter                                | Absolute Limits                                                                                             |                     | For Guaranteed Operation |       |       | Units |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|-------|-------|-------|
|                                          | Min                                                                                                         | Max                 | Min                      | Typ   | Max   |       |
| V <sup>+</sup> , Positive supply voltage | -0.3                                                                                                        | 7.0                 | 4.5                      | 5.0   | 5.5   | V     |
| V <sup>-</sup> , Negative supply voltage | -14.0                                                                                                       | 0.3                 | -12.5                    | -12.0 | -11.5 | V     |
| Control I/P voltage, Logic HIGH          | -                                                                                                           | V <sup>+</sup> +0.5 | 2.0                      |       | -     | V     |
| Control I/P voltage, Logic LOW           | V <sup>-</sup> -0.5                                                                                         | -                   | -                        |       | 0.8   | V     |
| R.F. I/P power, low loss state           | +25dBm. $-55^{\circ}\text{C}$ to $+90^{\circ}\text{C}$                                                      |                     |                          |       |       |       |
| R.F. I/P power, into isolated port       | +24dBm. $-55^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ , derated linearly to zero at $+125^{\circ}\text{C}$ |                     |                          |       |       |       |

**Switching Truth Table**

| CTL1 | CTL2 | R.F. COMM TO |          |          |          |
|------|------|--------------|----------|----------|----------|
|      |      | R.F. A       | R.F. B   | R.F. C   | R.F. D   |
| LOW  | LOW  | LOW LOSS     | ISOLATED | ISOLATED | ISOLATED |
| LOW  | HIGH | ISOLATED     | LOW LOSS | ISOLATED | ISOLATED |
| HIGH | LOW  | ISOLATED     | ISOLATED | LOW LOSS | ISOLATED |
| HIGH | HIGH | ISOLATED     | ISOLATED | ISOLATED | LOW LOSS |

**Notes:**

1. See Switching Truth Table
2. Measured at input or output in low loss state.
3. Output measured in isolated state.

**Package outline and pin designation**

**PLESSEY**

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