

## NJ16 Process

### Silicon Junction Field-Effect Transistor

- Low Current Switch
- General Purpose Amplifier
- High Breakdown Voltage

#### Absolute maximum ratings at TA = 25 °C

|                                                |                  |
|------------------------------------------------|------------------|
| Gate Current, I <sub>g</sub>                   | 10 mA            |
| Operating Junction Temperature, T <sub>j</sub> | +150°C           |
| Storage Temperature, T <sub>s</sub>            | – 65°C to +175°C |

#### Devices in this Databook based on the NJ16 Process.

##### Datasheet

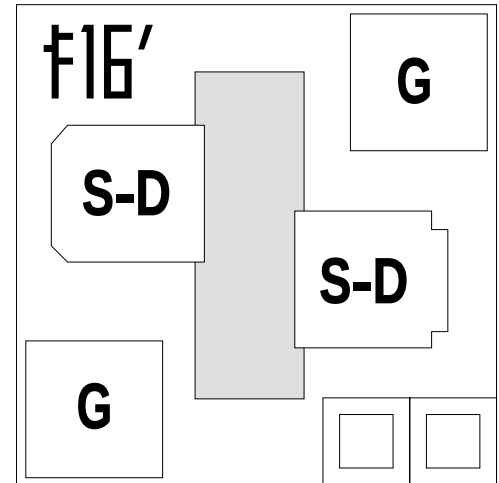
2N3954, 2N3955  
2N3956  
2N3957, 2N3958  
2N4220, 2N4220A  
2N4221, 2N4221A  
2N4338, 2N4339  
2N4340, 2N4341  
2N4867, 2N4867A  
2N4868, 2N4868A  
2N4869, 2N4869A

##### Datasheet

2SK17, 2SK40  
2SK59, 2SK105  
IFN17, IFN40  
IFN59, IFN105  
J201, J202  
J203, J204  
J230, J231  
J232  
J500, J501  
J502, J503

##### Datasheet

J504, J505  
J506, J507  
J508, J509  
J510, J511  
J553, J554  
J555, J556  
J557  
U553, U554  
U555, U556  
U557  
VCR4N



Die Size = 0.017" X 0.017"  
All Bond Pads = 0.004" Sq.  
Substrate is also Gate.

#### At 25°C free air temperature:

##### Static Electrical Characteristics

|                                   |                      | NJ16 Process |      |       |      |                                               |  |
|-----------------------------------|----------------------|--------------|------|-------|------|-----------------------------------------------|--|
|                                   |                      | Min          | Typ  | Max   | Unit | Test Conditions                               |  |
| Gate Source Breakdown Voltage     | V <sub>(BR)GSS</sub> | – 50         | – 60 |       | V    | I <sub>G</sub> = – 1 μA, V <sub>DS</sub> = 0V |  |
| Reverse Gate Leakage Current      | I <sub>GSS</sub>     |              | – 10 | – 100 | pA   | V <sub>GS</sub> = – 30V, V <sub>DS</sub> = 0V |  |
| Drain Saturation Current (Pulsed) | I <sub>DSS</sub>     | 0.2          |      | 9     | mA   | V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V   |  |
| Gate Source Cutoff Voltage        | V <sub>GS(OFF)</sub> | – 0.8        |      | – 5.5 | V    | V <sub>DS</sub> = 15V, I <sub>D</sub> = 1 nA  |  |

##### Dynamic Electrical Characteristics

|                          |                  |  |     |  |        |                                              |           |
|--------------------------|------------------|--|-----|--|--------|----------------------------------------------|-----------|
| Forward Transconductance | g <sub>fs</sub>  |  | 2.2 |  | mS     | V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V  | f = 1 kHz |
| Input Capacitance        | C <sub>iss</sub> |  | 3.5 |  | pF     | V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V  | f = 1 MHz |
| Feedback Capacitance     | C <sub>rss</sub> |  | 1.2 |  | pF     | V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V  | f = 1 MHz |
| Equivalent Noise Voltage | e <sub>N</sub>   |  | 6   |  | nV/√HZ | V <sub>DS</sub> = 10V, I <sub>D</sub> = 5 mA | f = 1 kHz |



InterFET Corporation

1000 N. Shiloh Road, Garland, TX 75042  
(972) 487-1287 FAX (972) 276-3375

[www.interfet.com](http://www.interfet.com)

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