New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (201) 376-2922
(212) 227-6005
FAX: (201) 376-8960

# 2N5018 2N5019

# p-channel JFETs *designed for . . .*

- **Analog Switches**
- **Commutators**
- **Choppers**

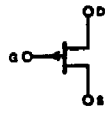
**BENEFITS**

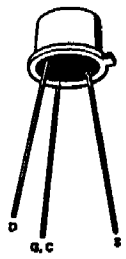
- Low Insertion Loss
  $r_{DS(on)} < 75\ \Omega$ (2N5018)
- No Offset or Error Voltages Generated by Closed Switch
  Purely Resistive

## *ABSOLUTE MAXIMUM RATINGS (25°C)

| | |
|---|---|
| Reverse Gate-Drain or Gate-Source Voltage (Note 1) | 30 V |
| Gate Current | 50 mA |
| Total Device Dissipation, Free-Air (Derate 3 mW/°C) | 500 mW |
| Storage Temperature Range | −65 to +200°C |
| Lead Temperature (1/16" from case for 60 seconds) | 300°C |

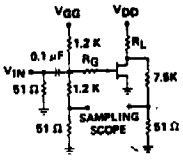
TO-18
See Section 8




## *ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| | | Characteristic | | 2N5018 Min | 2N5018 Max | 2N5019 Min | 2N5019 Max | Unit | Test Conditions | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | STATIC | $BV_{GSS}$ | Gate-Source Breakdown Voltage | 30 | | 30 | | V | $I_G = 1\ \mu A$, $V_{DS} = 0$ | |
| 2 | | $I_{GSS}$ | Gate Reverse Current | | 2 | | 2 | nA | $V_{GS} = 15$ V, $V_{DS} = 0$ | |
| 3 | | $I_{D(off)}$ | Drain Cutoff Current | | −10 | | −10 | | $V_{DS} = -15$ V, $V_{GS} = 12$ V (2N5018) | |
| 4 | | | | | −10 | | −10 | μA | $V_{GS} = 7$ V (2N5019) | 150°C |
| 5 | | $I_{DGO}$ | Drain Reverse Current | | −2 | | −2 | nA | $V_{DG} = -15$ V, $I_S = 0$ | |
| 6 | | | | | −3 | | −3 | μA | | 150°C |
| 7 | | $V_{GS(off)}$ | Gate-Source Cutoff Voltage | | 10 | | 5 | V | $V_{DS} = -15$ V, $I_D = -1\ \mu A$ | |
| 8 | | $I_{DSS}$ | Saturation Drain Current | −10 | | −5 | | mA | $V_{DS} = -20$ V, $V_{GS} = 0$ | |
| 9 | | $V_{DS(on)}$ | Drain-Source ON Voltage | | −0.5 | | −0.5 | V | $V_{GS} = 0$, $I_D = -6$ mA (2N5018), $I_D = -3$ mA (2N5019) | |
| 10 | DYN | $r_{DS(on)}$ | Static Drain-Source ON Resistance | | 75 | | 150 | Ω | $I_D = -1$ mA, $V_{GS} = 0$ | |
| 11 | | $r_{ds(on)}$ | Drain-Source ON Resistance | | 75 | | 150 | Ω | $I_D = 0$, $V_{GS} = 0$ | f = 1 kHz |
| 12 | | $C_{iss}$ | Common-Source Input Capacitance | | 45 | | 45 | pF | $V_{DS} = -15$ V, $V_{GS} = 0$ | f = 1 MHz |
| 13 | | $C_{rss}$ | Common-Source Reverse Transfer Capacitance | | 10 | | 10 | | $V_{DS} = 0$, $V_{GS} = 12$ V (2N5018), $V_{GS} = 7$ V (2N5019) | |
| 14 | SWITCH | $t_{d(on)}$ | Turn-ON Delay Time | | 15 | | 15 | ns | $V_{DD} = -6$ V, $V_{GS(on)} = 0$ | |
| 15 | | $t_r$ | Rise Time | | 20 | | 75 | | $V_{GS(off)}$ / $I_{D(on)}$ / $R_L$: 2N5018: 12 V / −6 mA / 910 Ω; 2N5019: 7 V / −3 mA / 1.8K Ω | |
| 16 | | $t_{d(off)}$ | Turn-OFF Delay Time | | 15 | | 25 | | | |
| 17 | | $t_f$ | Fall Time | | 50 | | 100 | | | |




INPUT PULSE
RISE TIME < 1 ns
FALL TIME < 1 ns
PULSE WIDTH 100 ns
REPETITION RATE 1 MHz

SAMPLING SCOPE
RISE TIME 0.4 ns
INPUT RESISTANCE 10 MΩ
INPUT CAPACITANCE 1.5 pF

*JEDEC registered data.

NOTE:
1. Due to symmetrical geometry these units may be operated with source and drain leads interchanged.

Quality Semi-Conductors