

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

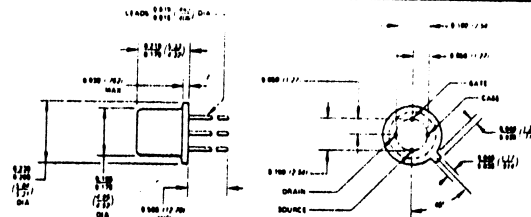
2N4117 2N4119 2N4118
 2N4117A 2N4119A 2N4118A

TELEPHONE: (973) 376-2922
 (212) 227-6005
 FAX: (973) 376-8860

N-CHANNEL SILICON JUNCTION FIELD-EFFECT TRANSISTORS

FOR VERY LOW INPUT CURRENT DC AMPLIFIERS

- $I_{GSS} < 1 \text{ pA}$ (2N4117A Series)
- $I_{GSS} < 10 \text{ pA}$ (2N4117 Series)



JEDEC TO-72
 Fourth lead is in electrical contact with case.

PRODUCT CONDITIONING

Units receive the following treatment before final electrical tests:

High Temp Storage: 24 Hours at 150°C 25,000g Acceleration/Impact in the Y1 Plane
 Thermal Shock: +100 to 0°C for 5 Cycles Helium and/or Gross Leak Tests for Hermeticity

***ABSOLUTE MAXIMUM RATINGS (25°C)**

| | | |
|--|-------|---------------|
| Gate-Drain or Gate-Source Voltage (Note 1) | | -40 V |
| Gate-Current | | 50 mA |
| Total Device Dissipation (Derate 2 mW/°C to 175°C) | | 300 mW |
| Storage Temperature Range | | -65 to +175°C |
| Lead Temperature 1/16" from Case for 10 sec | | 255°C |

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

| Characteristic | Test Conditions | 2N4117 2N4117A | | 2N4118 2N4118A | | 2N4119 2N4119A | | Unit |
|---|---|-------------------|------|-------------------|------|-------------------|------|-----------------|
| | | Min | Max | Min | Max | Min | Max | |
| I_{GSS} Gate Reverse Current 2N4117 Series Only | $V_{GS} = -20 \text{ V}$, $V_{DS} = 0$ | 25°C | -10 | | -10 | | -10 | pA |
| | | 150°C | -25 | | -25 | | -25 | nA |
| I_{GSS} Gate Reverse Current 2N4117A Series Only | $V_{GS} = -20 \text{ V}$, $V_{DS} = 0$ | 25°C | -1 | | -1 | | -1 | pA |
| | | 150°C | -2.5 | | -2.5 | | -2.5 | nA |
| BV_{GSS} Gate-Source Breakdown Voltage | $I_G = -1 \mu\text{A}$, $V_{DS} = 0$ | -40 | | -40 | | -40 | | V |
| V_p Gate-Source Pinch-Off Voltage | $V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ nA}$ | -0.6 | -1.8 | -1 | -3 | -2 | -6 | V |
| I_{DSS} Drain Current at Zero Gate Voltage (Note 2) | $V_{DS} = 10 \text{ V}$, $V_{GS} = 0$ | 0.03 | 0.09 | 0.08 | 0.24 | 0.20 | 0.60 | mA |
| g_{fs} Common-Source Forward Transconductance (Note 2) | $V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ kHz}$ | 70 | 210 | 80 | 250 | 100 | 330 | μmho |
| g_{oss} Common-Source Output Conductance | $V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ kHz}$ | | 3 | | 5 | | 10 | μmho |
| C_{iss} Common-Source Input Capacitance | $V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$ | | 3 | | 3 | | 3 | pF |
| C_{rss} Common-Source Reverse Transfer Capacitance | $V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$ | | 1.5 | | 1.5 | | 1.5 | pF |

NOTES:

1. Due to symmetrical geometry, these units may be operated with source and drain leads interchanged.
 2. This parameter is measured during a 2 ms interval 100 ms after power is applied. (Not a JEDEC condition.)
- *JEDEC registered data.



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