# Performance Curves MYA MYB MYC
See Pages 4-20, 21, 22

## DUAL P-CHANNEL ENHANCEMENT-TYPE SILICON MOS FIELD-EFFECT TRANSISTORS

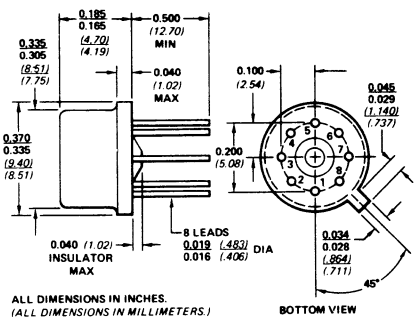
### NORMALLY-OFF MOS FETS FOR ANALOG SWITCHES ELECTROMETERS AND AMPLIFIERS

- Common Sources on M106
- Integrated Zener Clamps Protect Gates on M106, M107
- High Impedance M108
- Low $I_{GSS}$

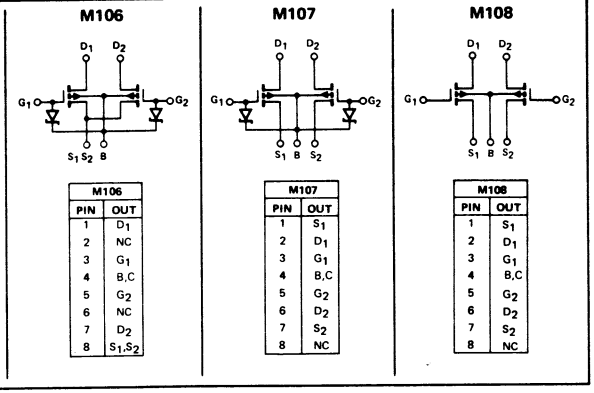
### ABSOLUTE MAXIMUM RATINGS (25°C)

Drain-to-Source Voltage ..... -30 V
Gate-to-Source Voltage (M106/7) ..... -30 V
Gate-to-Source Voltage (M108) ..... -50 V
Gate-to-Drain Voltage (M106/7) ..... -30 V
Gate-to-Drain Voltage (M108) ..... -50 V
Drain Current ..... -50 mA

Gate Zener Current ..... ±1.0 mA
Storage Temperature .....-65 to 150°C
Operating Junction Temperature... -55 to 125°C
Total Dissipation at 25°C Ambient Temperature
(Derate 5 mW/°C to 125°C) ..... 500 mW




TO-99



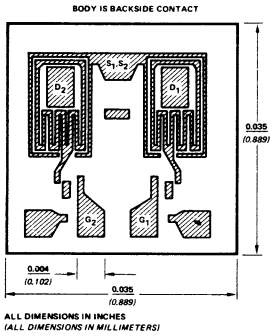

| M106 | |
|---|---|
| PIN | OUT |
| 1 | $D_1$ |
| 2 | NC |
| 3 | $G_1$ |
| 4 | B,C |
| 5 | $G_2$ |
| 6 | NC |
| 7 | $D_2$ |
| 8 | $S_1$,$S_2$ |

| M107 | |
|---|---|
| PIN | OUT |
| 1 | $S_1$ |
| 2 | $D_1$ |
| 3 | $G_1$ |
| 4 | B,C |
| 5 | $G_2$ |
| 6 | $D_2$ |
| 7 | $S_2$ |
| 8 | NC |

| M108 | |
|---|---|
| PIN | OUT |
| 1 | $S_1$ |
| 2 | $D_1$ |
| 3 | $G_1$ |
| 4 | B,C |
| 5 | $G_2$ |
| 6 | $D_2$ |
| 7 | $S_2$ |
| 8 | NC |

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

| | | Characteristic | | M106, M107 | | M108 | | Unit | Test Conditions |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Min | Max | Min | Max | | |
| 1 | STATIC | $BV_{DSS}$ | Drain-Source Breakdown Voltage | -30 | | -30 | | V | $I_D$ = -1 μA, $V_{GS}$ = $V_{BS}$ = 0 |
| 2 | | $BV_{SDS}$ | Source-Drain Breakdown Voltage | -30 | | -30 | | | $I_S$ = -1 μA, $V_{GD}$ = $V_{BD}$ = 0 |
| 3 | | $BV_{GBS}$ | Gate-Body Breakdown Voltage | -30 | | ±100* | | | $I_G$ = -10 μA, $V_{SB}$ = $V_{DB}$ = 0 |
| 4 | | $I_{GSS}$ | Gate-Body Leakage | | -100 | | -1 | pA | $V_{GS}$ = -20 V, $V_{DS}$ = $V_{BS}$ = 0 |
| 5 | | $I_{D(off)}$ | Drain Cutoff Current | | -0.2 | | -0.2 | nA | $V_{DS}$ = -20 V, $V_{GS}$ = $V_{BS}$ = 0 |
| 6 | | $I_{S(off)}$ | Source Cutoff Current | | -0.2 | | -0.2 | | $V_{SD}$ = -20 V, $V_{GD}$ = $V_{BD}$ = 0 |
| 7 | | $V_{GS(th)}$ | Gate Threshold Voltage | -2 | -6 | -2 | -8 | V | $V_{GS}$ = $V_{DS}$, $I_D$ = -10 μA, $V_{BS}$ = 0 |
| 8 | | $I_{D(on)}$ | Drain Current | -10 | | -10 | | mA | $V_{DS}$ = -10 V, $V_{GS}$ = -10 V, $V_{BS}$ = 0 |
| 9 | | $r_{DS(on)}$ | Drain Source ON Resistance | | 150 | | 150 | Ω | $V_{GS}$ = -15 V, $I_D$ = -100 μA, $V_{BS}$ = 0 |
| 10 | | | | | 120 | | 120 | | $V_{GS}$ = -20 V, $I_D$ = -100 μA, $V_{BS}$ = 0 |
| 11 | DYNAMIC | $g_{fs}$ | Common-Source Forward Transconductance | 2,000 | | 2,000 | | μmho | $V_{DS}$ = -10 V, $V_{GS}$ = -10 V, $V_{BS}$ = 0 f = 1 kHz |
| 12 | | $C_{gs}$ or $C_{gd}$ | Gate-Source or Gate-Drain Capacitance | | 4 | | 4 | pF | $V_{GB}$ = $V_{DB}$ = 0, f = 1 MHz, Body Guarded |
| 13 | | $C_{sb}$ or $C_{db}$ | Source-Body or Drain-Body Capacitance | | 5.5 | | 5.5 | | $V_{GB}$ = 0, $V_{DB}$ = $V_{SB}$ = -5 V, f = 1 MHz |
| 14 | | $C_{ds}$ | Drain-Source Capacitance | | 0.5 | | 0.5 | | $V_{GB}$ = 0, $V_{DB}$ = $V_{SB}$ = -5 V, f = 1 MHz, Body Guarded |
| *Gate-Oxide Breakdown Voltage | | | | MYA (M106) | MYB (M107) | MYC (M108) | | | |




# DUAL P-CHANNEL ENHANCEMENT-TYPE SILICON MOS FIELD-EFFECT TRANSISTOR

## APPLICATIONS

- Operational Amplifiers
- Audio Amplifiers
- Commutating Circuits
- Multiplexer Circuits
- Analog Switches

## PRINCIPAL DEVICE

M106

## PACKAGE TYPE

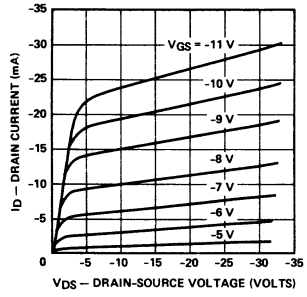
TO-99

## FEATURES

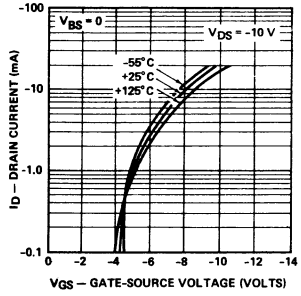
- Common Sources
- Integrated Zener Clamp Protects the Gates
- Low $I_{GSS}$
- Normally OFF

## PERFORMANCE CURVES (25°C and $V_{BS}$ = 0 unless otherwise noted)

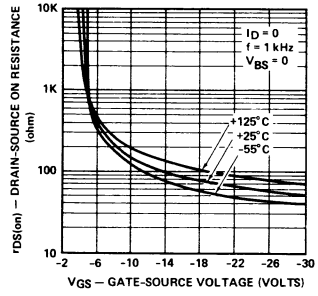
Output Characteristic



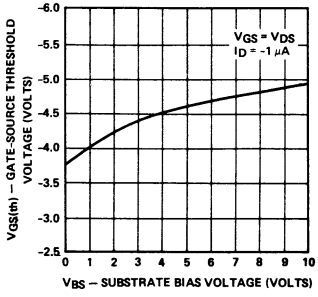

Transfer Characteristics



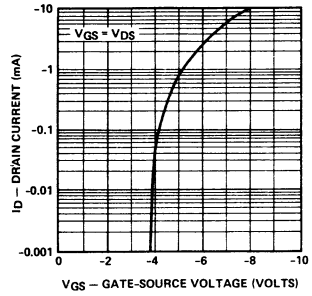

Drain-Source ON Resistance vs Gate-Source Bias



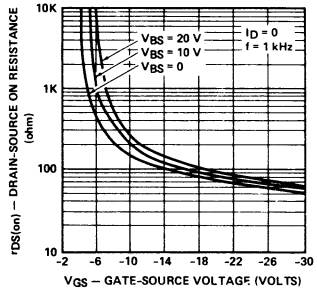

Gate Threshold Voltage vs Substrate Bias Voltage



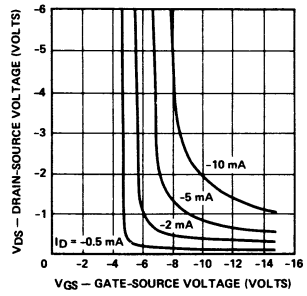

Gate-Source Voltage vs Drain Current



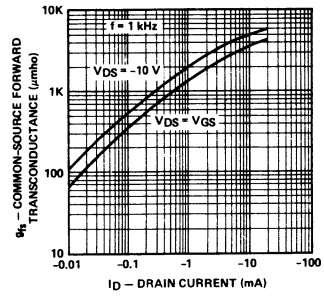

Drain-Source ON Resistance vs Gate-Source Bias

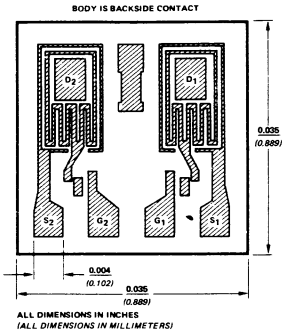



Low Level ON Drain-Source Voltage vs Gate-Source Bias




Transconductance Characteristics






# DUAL P-CHANNEL ENHANCEMENT-TYPE SILICON MOS FIELD-EFFECT TRANSISTOR

## APPLICATIONS

- Audio Amplifiers
- Operational Amplifiers
- Commutating Circuits
- Multiplexer Circuits
- Analog Switches

## PRINCIPAL DEVICE

M107

## PACKAGE TYPE

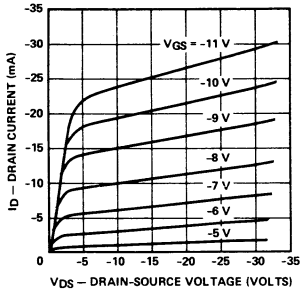
TO-99

## FEATURES

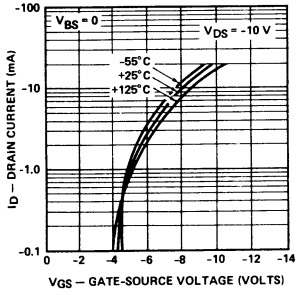
- Integrated Zener Clamp Protects the Gates
- Low $I_{GSS}$
- Normally OFF

## PERFORMANCE CURVES (25°C and $V_{BS}$ = 0 unless otherwise noted)

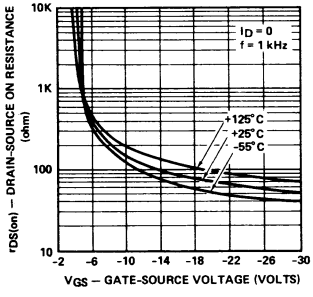
Output Chracteristics



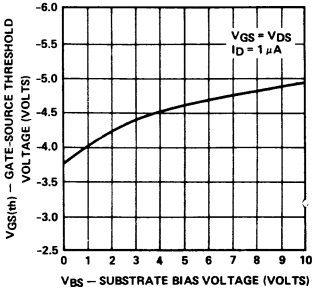

Transfer Characteristics



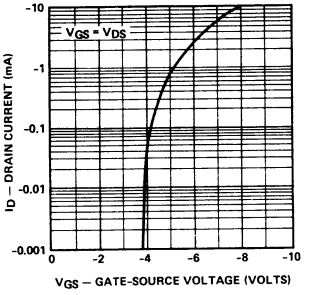

Drain-Source ON Resistance vs Gate-Source Bias



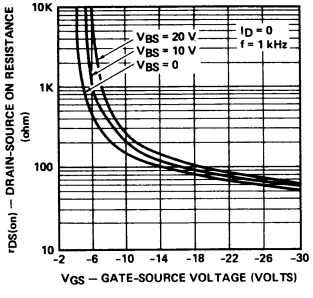

Gate Threshold Voltage vs Substrate Bias Voltage



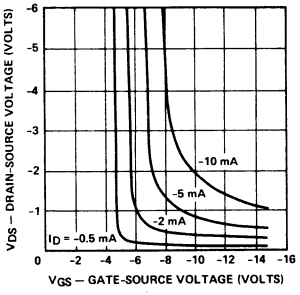

Gate-Source Voltage vs Drain Current



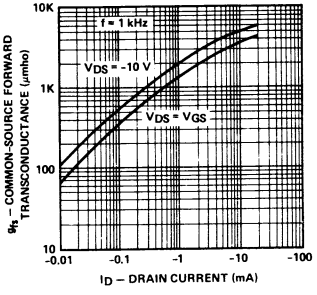

Drain-Source ON Resistance vs Gate-Source Bias

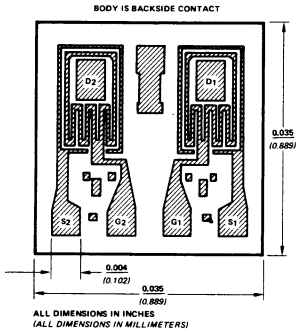



Low Level ON Drain-Source Voltage vs Gate-Source Bias




Transconductance Characteristics






# DUAL P-CHANNEL ENHANCEMENT-TYPE SILICON MOS FIELD EFFECT TRANSISTOR

## APPLICATIONS

- Operational Amplifiers
- Audio Amplifiers
- Ultra-High Input Impedance Amplifiers for such Circuits as
  - Proximity Detectors
  - Smoke Detectors
  - pH Detectors
  - Transducer Amplifiers
  - Electrometers
- Commutating Circuits
- Multiplexer Circuits
- Analog Switches

## FEATURES

- No Gate Protection Which Results In Ultra-High Input Impedance
- Ultra-Low Leakage
- Normally OFF

## PRINCIPAL DEVICE

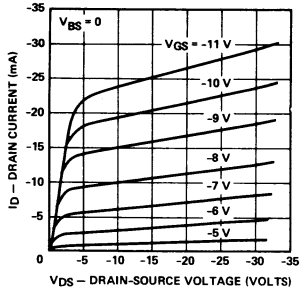
M108

## PACKAGE TYPE

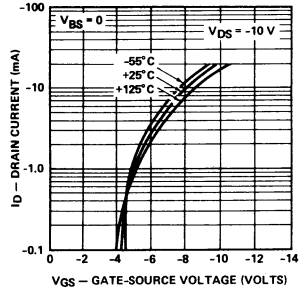
TO-99

## PERFORMANCE CURVES (25°C unless otherwise noted)

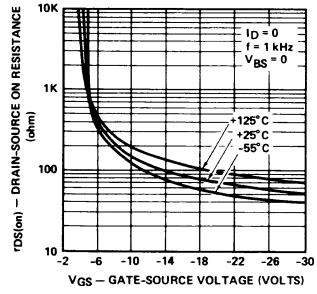
Transfer Characteristics



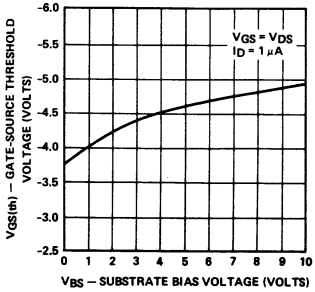

Transfer Characteristics



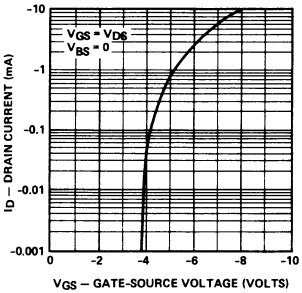

Drain-Source ON Resistance vs Gate-Source Bias



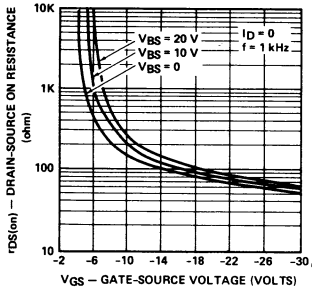

Gate-Source Voltage vs Substrate Bias



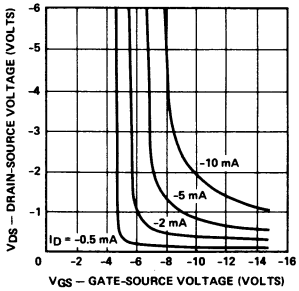

Gate-Source Voltage vs Drain Current




Drain-Source ON Resistance vs Gate-Source Bias




Low-Level ON Drain-Source Voltage vs Gate-Source Bias




Transconductance Characteristics