

**ULTRA LOW RON  
SWITCHING**

**SILICON EPITAXIAL JUNCTION  
N-CHANNEL FIELD EFFECT TRANSISTOR**

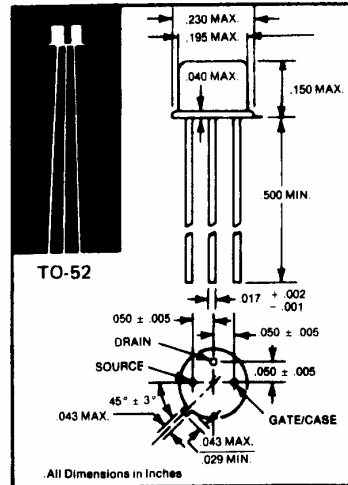
**2N6568**

**GEOMETRY 504**

- LOW  $R_{DS}$  — 2½ Ohms MAXIMUM
- HIGH  $I_{DSS}$  — 500 mA MINIMUM

**ELECTRICAL DATA      ABSOLUTE MAXIMUM RATINGS**

| PARAMETER                              | SYMBOL     | 2N6568            | UNITS |
|----------------------------------------|------------|-------------------|-------|
| Drain to Gate Voltage                  | $BV_{DGO}$ | 30                | Volts |
| Gate to Source Voltage                 | $BV_{GSO}$ | -30               | Volts |
| Peak Forward Gate Current              | $I_{GF}$   | 100               | mA    |
| Peak Drain Current                     | $I_D$      | 1.0               | A     |
| Power Dissipation (free air)           | $P_D$      | 400               | mW    |
| Derating Factor (free air)             | $D_F$      | 2.3               | mW/°C |
| Junction Temp. (Oper. & Store)         | $T_J$      | -65°C to +200°C   |       |
| Lead Temp. (@1/16" to 1/32" from case) | $T_L$      | 240°C for 10 sec. |       |



**ELECTRICAL CHARACTERISTICS:  $T_A = 25^\circ\text{C}$  (UNLESS OTHERWISE STATED)**

| PARAMETERS and CONDITIONS  | SYMBOL         | CONDITION                                              | 2N6568 |      |      | UNITS |
|----------------------------|----------------|--------------------------------------------------------|--------|------|------|-------|
|                            |                |                                                        | Min.   | Typ. | Max. |       |
| Gate Leakage Current       | $I_{GSS}$      | $V_{GS} = -15V, V_{DS} = 0$                            | —      | —    | 1.0  | nA    |
| Gate Leakage Current       | $I_{GSS}$      | $V_{GS} = -15V, V_{DS} = 0, T_A = 100^\circ\text{C}$   | —      | —    | 1.0  | μA    |
| Drain Cutoff Current       | $I_{D\ OFF}$   | $V_{GS} = -10V, V_{DS} = 15V$                          | —      | —    | 3.0  | nA    |
| Drain Cutoff Current       | $I_{D\ OFF}$   | $V_{GS} = -10V, V_{DS} = 15V, T_A = 100^\circ\text{C}$ | —      | —    | 1.0  | μA    |
| Pinch-Off Voltage          | $V_{PO}$       | $V_{DS} = 15V, I_{DS} = 3nA$                           | —      | 8    | 10   | Volts |
| On Resistance              | $R_{DS}$       | $I_D = 10mA, V_{GS} = 0$                               | 1.5    | —    | 2.5  | Ohms  |
| Drain Source "On" Voltage  | $V_{DS\ (On)}$ | $I_D = 10mA, V_{GS} = 0$                               | —      | —    | 25   | mV    |
| Drain Current*             | $I_{DSS}$      | $V_{DS} = 2V, V_{GS} = 0$                              | 500    | —    | —    | mA    |
| Gate to Source Cap.        | $C_{GS}$       | $V_{GS} = -20V$                                        | —      | 45   | 60   | pfd   |
| Gate to Drain Cap.         | $C_{GD}$       | $V_{GD} = -20V$                                        | —      | 45   | 60   | pfd   |
| Turn On Time <sup>1</sup>  | $T_d + T_r$    |                                                        | —      | 50   | —    | nS    |
| Turn Off Time <sup>1</sup> | $T_s + T_f$    |                                                        | —      | 75   | —    | nS    |

\* Pulse Measurement 1% Duty Cycle 10 MS Max.

<sup>1</sup>  $R_G = 50\ \Omega, V_{DD} = 1.5V, R_D = 150\ \Omega, V, \text{ pulse} = -15V, \text{ Pulse width } 0.5\ \mu\text{min.}, V_{GS} = 0V$

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