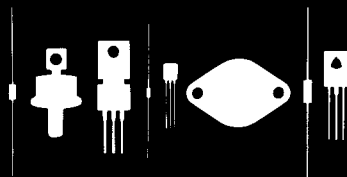


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145 Adams Avenue  
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2N5653  
2N5654

N CHANNEL SILICON  
FIELD EFFECT TRANSISTOR

JEDEC TO-92 CASE\*

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5653 series types are Silicon N-Channel Field Effect Transistors designed for switching applications.

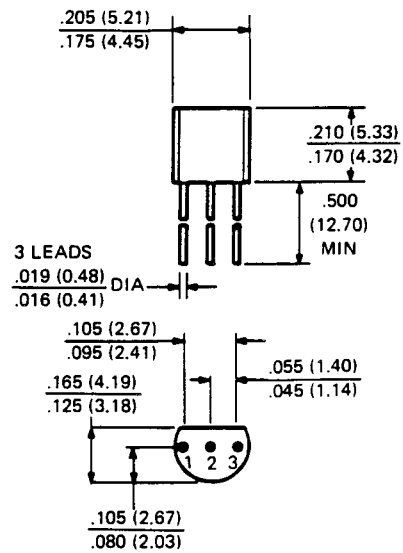
## MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

|                                            | SYMBOL         |             | UNIT             |
|--------------------------------------------|----------------|-------------|------------------|
| Drain-Gate Voltage                         | $V_{GD}$       | 30          | V                |
| Gate-Source Voltage                        | $V_{GS}$       | 30          | V                |
| Gate Current                               | $I_G$          | 10          | mA               |
| Power Dissipation                          | $P_D$          | 625         | mW               |
| Operating and Storage Junction Temperature | $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL              | TEST CONDITIONS                                                | 2N5653 |      | 2N5654 |      | UNIT          |
|---------------------|----------------------------------------------------------------|--------|------|--------|------|---------------|
|                     |                                                                | MIN    | MAX  | MIN    | MAX  |               |
| $I_{GSS}$           | $V_{GS}=15\text{V}$                                            |        | 1.0  |        | 1.0  | nA            |
| $I_{GSS}$           | $V_{GS}=15\text{V}, T_A=100^\circ\text{C}$                     |        | 1.0  |        | 1.0  | $\mu\text{A}$ |
| $I_{DSS}$           | $V_{DS}=20\text{V}$                                            | 40     | -    | 15     | -    | mA            |
| $I_D(\text{OFF})$   | $V_{DS}=15\text{V}, V_{GS}=12\text{V}$                         |        | 1.0  |        | -    | nA            |
| $I_D(\text{OFF})$   | $V_{DS}=15\text{V}, V_{GS}=8.0\text{V}$                        |        | -    |        | 1.0  | nA            |
| $I_D(\text{OFF})$   | $V_{DS}=15\text{V}, V_{GS}=12\text{V}, T_A=100^\circ\text{C}$  |        | 1.0  |        | -    | $\mu\text{A}$ |
| $I_D(\text{OFF})$   | $V_{DS}=15\text{V}, V_{GS}=8.0\text{V}, T_A=100^\circ\text{C}$ |        | -    |        | 1.0  | $\mu\text{A}$ |
| $BV_{GSS}$          | $I_G=10\mu\text{A}$                                            | 30     |      | 30     |      | V             |
| $V_{DS}(\text{ON})$ | $I_D=10\text{mA}$                                              |        | 0.75 |        | -    | V             |
| $V_{DS}(\text{ON})$ | $I_D=5.0\text{mA}$                                             |        | -    |        | 0.75 | V             |
| $r_{DS}(\text{ON})$ | $I_D=1.0\text{mA}, V_{GS}=0$                                   |        | 50   |        | 100  | $\Omega$      |
| $r_{ds}(\text{ON})$ | $V_{GS}=0, I_D=0, f=1.0\text{kHz}$                             |        | 50   |        | 100  | $\Omega$      |
| $C_{iss}$           | $V_{DS}=12\text{V}, V_{GS}=0, f=1.0\text{MHz}$                 |        | 10   |        | 10   | pF            |
| $C_{rss}$           | $V_{GS}=12\text{V}, V_{DS}=0, f=1.0\text{MHz}$                 |        | 3.5  |        | -    | pF            |
| $C_{rss}$           | $V_{GS}=8.0\text{V}, V_{DS}=0, f=1.0\text{MHz}$                |        | -    |        | 3.5  | pF            |
| $t_{ON}$            | $I_D(\text{ON})=10\text{mA}$                                   |        | 9.0  |        | -    | ns            |
| $t_{ON}$            | $I_D(\text{ON})=5.0\text{mA}$                                  |        | -    |        | 14   | ns            |
| $t_{OFF}$           | $V_{GS}(\text{OFF})=10\text{V}$                                |        | 15   |        | -    | ns            |
| $t_{OFF}$           | $V_{GS}(\text{OFF})=5.0\text{V}$                               |        | -    |        | 30   | ns            |

\*See Reverse For Outline Drawing



LEAD CODE:

1. DRAIN
2. SOURCE
3. GATE

**Central<sup>TM</sup>**  
**Semiconductor Corp.**

145 Adams Avenue  
 Hauppauge, NY 11788 USA  
 Tel: (631) 435-1110 • Fax: (631) 435-1824  
[www.centrasemi.com](http://www.centrasemi.com)