

## isc N-Channel MOSFET Transistor

## STF110N10F7

## FEATURES

- Drain Current  $-I_D = 45A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 100V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 7m\Omega (\text{Max})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

- Low Drain-Source On-Resistance

## APPLICATIONS

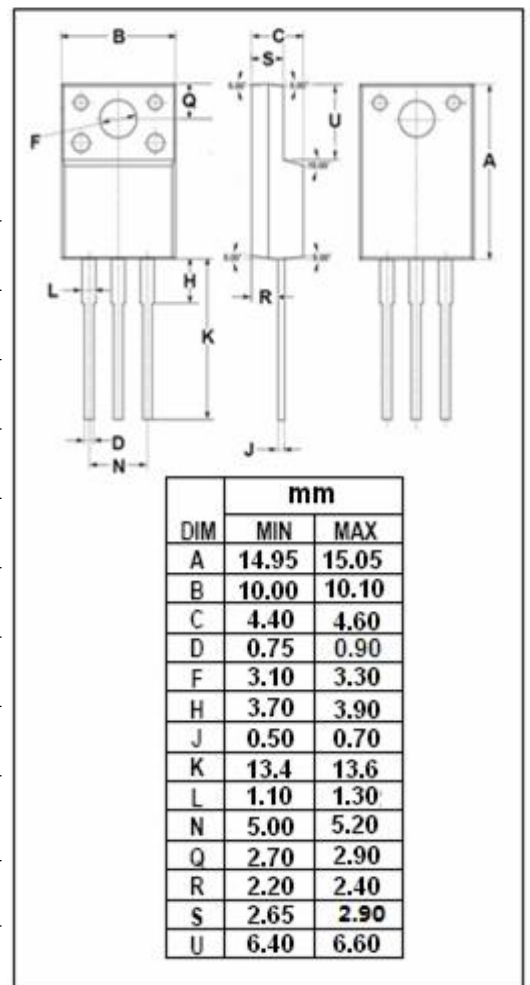
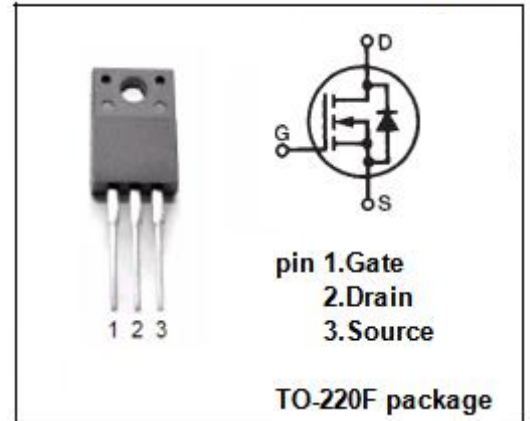
- Switching application

ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|----------------------------------------|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage                   | 100      | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 20$ | V          |
| $I_D$     | Drain Current-Continuous               | 45       | A          |
| $I_{DM}$  | Drain Current-Single Pluse             | 180      | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 30       | W          |
| $T_J$     | Max. Operating Junction Temperature    | -55~175  | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | -55~175  | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                            | MAX | UNIT         |
|--------------|--------------------------------------|-----|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 5   | $^\circ C/W$ |



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## ELECTRICAL CHARACTERISTICS

 $T_c=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL        | PARAMETER                       | CONDITIONS                                                                                         | MIN | MAX       | UNIT             |
|---------------|---------------------------------|----------------------------------------------------------------------------------------------------|-----|-----------|------------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage  | $V_{GS}=0$ ; $I_D=0.25\text{mA}$                                                                   | 100 |           | V                |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=V_{GS}$ ; $I_D=0.25\text{mA}$                                                              | 2.5 | 4.5       | V                |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}$ ; $I_D=22.5\text{A}$                                                           |     | 7         | $\text{m}\Omega$ |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 20\text{V}$ ; $V_{DS}=0$                                                               |     | $\pm 100$ | nA               |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=100\text{V}$ ; $V_{GS}=0$<br>$V_{DS}=100\text{V}$ ; $V_{GS}=0$ ; $T_j=125^{\circ}\text{C}$ |     | 1<br>10   | $\mu\text{A}$    |
| $V_{SD}$      | Forward On-Voltage              | $I_S=22.5\text{A}$ ; $V_{GS}=0$                                                                    |     | 1.2       | V                |

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