

isc N-Channel MOSFET Transistor

2SK1940

DESCRIPTION

- Drain Current $-I_D = 12A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DSS} = 600V(\text{Min})$
- Fast Switching Speed

APPLICATIONS

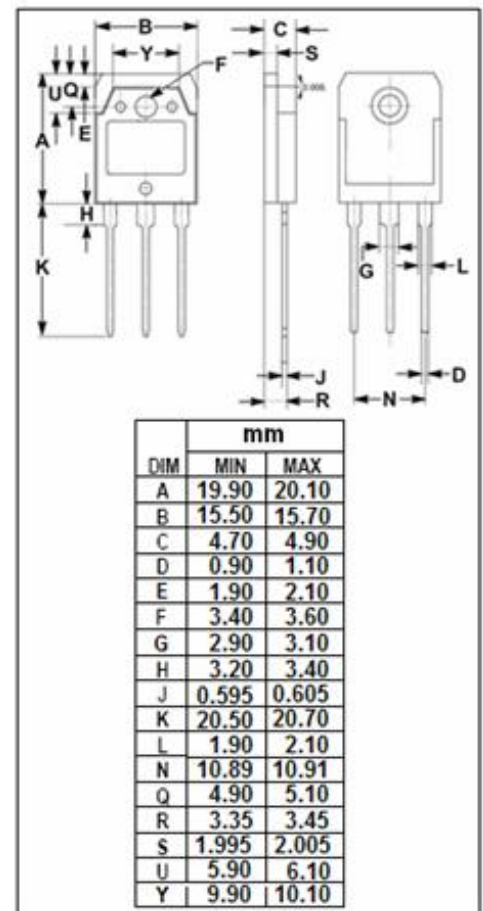
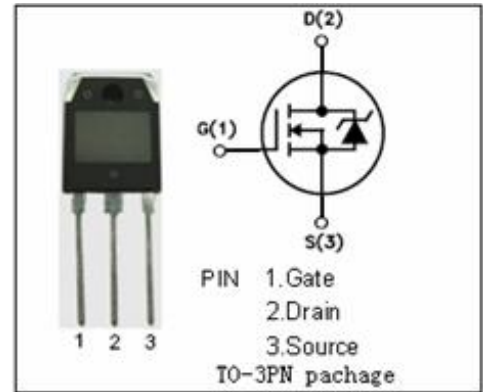
- Switching regulator
- UPS
- DC-DC converters
- General purpose power amplifier

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

| SYMBOL | ARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DSS} | Drain-Source Voltage ($V_{GS} = 0$) | 600 | V |
| V_{GS} | Gate-Source Voltage | ± 30 | V |
| I_D | Drain Current-continuous@ $T_C = 25^\circ C$ | 12 | A |
| P_{tot} | Total Dissipation@ $T_C = 25^\circ C$ | 125 | W |
| T_j | Max. Operating Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |

• THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---|------|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.25 | $^\circ C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 35 | $^\circ C/W$ |



isc N-Channel Mosfet Transistor**2SK1940**• ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYPE | MAX | UNIT |
|---------------|---------------------------------|--|-----|------|-----------|---------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}=0; I_D=1\text{mA}$ | 600 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}; I_D=1\text{mA}$ | 2.5 | | 3.5 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=10\text{V}; I_D=4\text{A}$ | | | 1.2 | Ω |
| I_{GSS} | Gate-Body Leakage Current | $V_{GS}= \pm 30\text{V}; V_{DS}=0$ | | | ± 100 | nA |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=600\text{V}; V_{GS}=0$ | | 10 | 500 | μA |
| C_{iss} | Input capacitance | $V_{DS}=25\text{V}; V_{GS}=0\text{V}; f_T=1\text{MHz}$ | | 2500 | 3800 | pF |
| C_{rss} | Reverse transfer capacitance | | | 50 | 75 | |
| C_{oss} | Output capacitance | | | 220 | 330 | |
| t_r | Rise time | $V_{GS}=10\text{V}; I_D=6\text{A};$ $V_{DD}=300\text{V};$ $R_L=10\Omega$ | | 60 | 90 | ns |
| t_{on} | Turn-on time | | | 30 | 45 | |
| t_f | Fall time | | | 80 | 120 | |
| t_{off} | Turn-off time | | | 140 | 210 | |