Elektronische Bauelemente

# S2N7002T-C

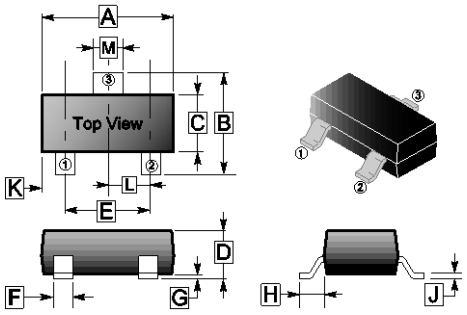
**115mA, 60V, $R_{DS(ON)}$ 7.5Ω**
**N-Channel Plastic-Encapsulate MOSFETS**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance

**SOT-523**




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 1.5 | 1.7 | G | - | 0.1 |
| B | 1.45 | 1.75 | H | 0.55 REF. | |
| C | 0.7 | 0.9 | J | 0.1 | 0.2 |
| D | 0.7 | 0.9 | K | - | |
| E | 0.9 | 1.1 | L | 0.5 TYP. | |
| F | 0.15 | 0.35 | M | 0.25 | 0.35 |

## MARKING

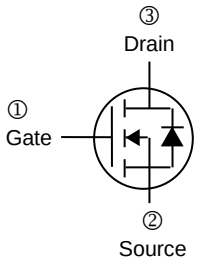
| K72 |
|---|

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| SOT-523 | 3K | 7 inch |

## ORDER INFORMATION

| Part Number | Type |
|---|---|
| S2N7002T-C | Lead (Pb)-free and Halogen-free |




## MAXIMUM RATINGS ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 60 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | V |
| Drain Current | $I_D$ | 115 | mA |
| Power Dissipation | $P_D$ | 150 | mW |
| Thermal Resistance from Junction-Ambient | $R_{\theta JA}$ | 833 | °C/W |
| Operating Junction Temperature Range | $T_J$ | 150 | °C |
| Operating Storage Temperature Range | $T_{STG}$ | -55~150 | |

## ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | 60 | - | - | V | $V_{GS}$=0, $I_D$=10μA |
| Gate-Body Leakage | $I_{GSS}$ | - | - | ±1 | μA | $V_{DS}$=0, $V_{GS}$= ±20V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | - | - | 1 | μA | $V_{DS}$=60V, $V_{GS}$=0 |
| Gate-Threshold Voltage | $V_{GS(th)}$ | 1 | - | 2.5 | V | $V_{DS}$=$V_{GS}$, $I_D$=250μA |
| On-State Drain Current | $I_{D(ON)}$ | 500 | - | - | mA | $V_{GS}$=10V, $V_{DS}$=7V |
| Drain-Source On Resistance | $R_{DS(ON)}$ | - | - | 7.5 | Ω | $V_{GS}$=10V, $I_D$=500mA |
| | | - | - | 7.5 | | $V_{GS}$=5V, $I_D$=50mA |
| Forward Trans Conductance | $g_{fs}$ | - | 80 | - | mS | $V_{DS}$=10V, $I_D$=200mA |
| Drain-Source On-Voltage | $V_{DS(ON)}$ | - | - | 3.75 | V | $V_{GS}$=10V, $I_D$=500mA |
| | | - | - | 0.375 | | $V_{GS}$=5V, $I_D$=50mA |
| Diode Forward Voltage | $V_{SD}$ | - | - | 1 | V | $I_S$=250mA, $V_{GS}$=0 |
| Input Capacitance | $C_{iss}$ | - | 50 | - | pF | $V_{DS}$=25V<br>$V_{GS}$=0<br>f=1MHz |
| Output Capacitance | $C_{oss}$ | - | 25 | - | | |
| Reverse Transfer Capacitance | $C_{rss}$ | - | 5 | - | | |
| **Switching Time** | | | | | | |
| Turn-on Time | $T_{d(on)}$ | - | 5.6 | - | nS | $V_{DD}$=10V, $R_L$=20Ω<br>$I_D$=500mA, $V_{GEN}$=10V<br>$R_G$=10Ω |
| Turn-off Time | $T_{d(off)}$ | - | 25 | - | | |