

SE2N7002K
60V,300mA N-Channel MOSFET

Revision:A

General Description

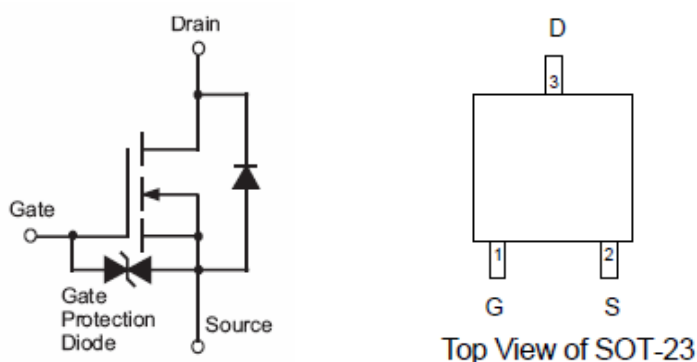
The MOSFETs from SINO-IC provide the best combination of fast switching, low on-resistance and cost-effectiveness.

Features

- $V_{DS(V)} = 60V$
- $I_D = 300mA$
- $R_{DS(ON)} < 2\Omega$ ($V_{GS} = 10V, I_D = 0.5A$)
- $R_{DS(ON)} < 3\Omega$ ($V_{GS} = 5V, I_D = 0.05A$)
- ESD Protected to 2KV

Pin configurations

See Diagram below



Absolute Maximum Ratings

| Parameter | | Symbol | Rating | Units |
|--------------------------------------|------------|----------|------------|-------------|
| Drain-Source Voltage | | V_{DS} | 60 | V |
| Gate-Source Voltage | | V_{GS} | ± 20 | V |
| Drain Current (Note 1) | Continuous | I_D | 300 | mA |
| | Pulsed | | 800 | |
| Total Power Dissipation | | P_D | 350 | mW |
| Operating Junction Temperature Range | | T_J | -55 to 150 | $^{\circ}C$ |

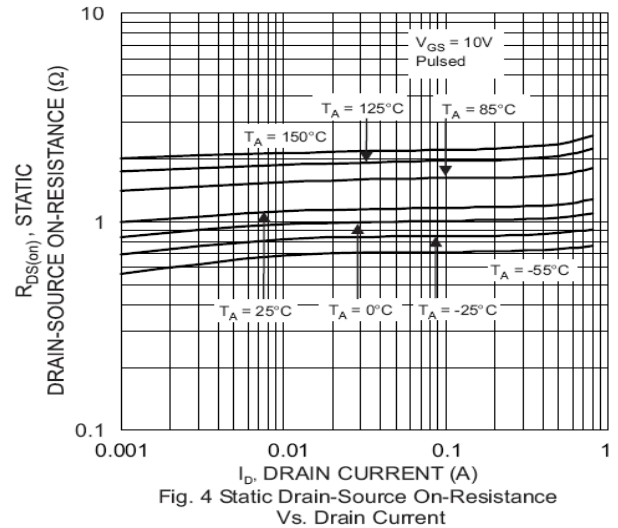
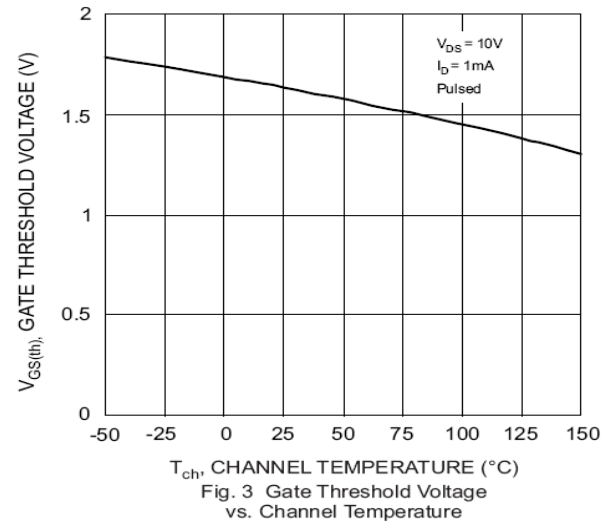
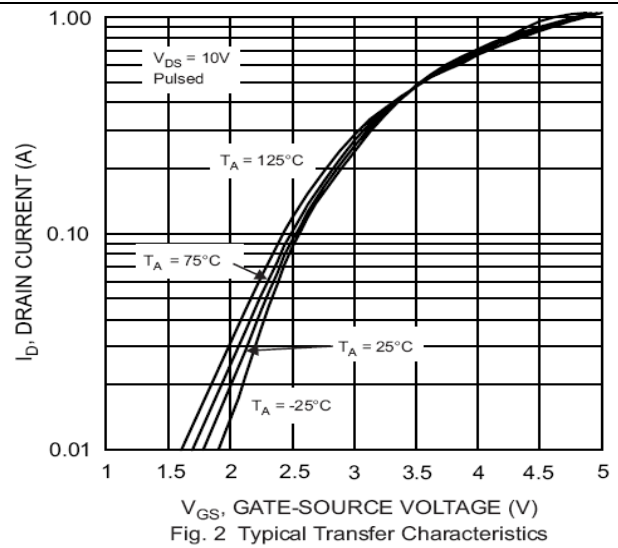
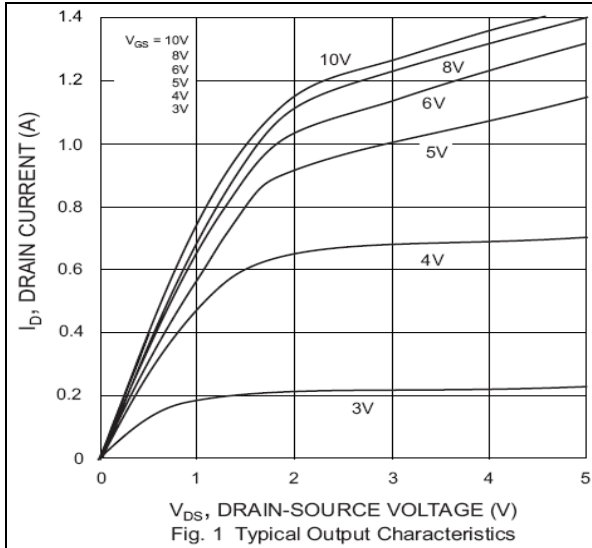
Thermal Characteristics

| Parameter | | Symbol | Typ | Max | Units |
|-------------------------------|-------------|-----------------|-----|-----|---------------|
| Maximum Junction-to-Ambient A | $t \leq 5s$ | $R_{\theta JA}$ | 357 | - | $^{\circ}C/W$ |

Electrical Characteristics (T_J=25°C unless otherwise noted)

| Symbol | Parameter | Test Conditions | Min | Typ | Max | Units |
|--|--|--|------|-----|------|-------|
| OFF/ON CHARACTERISTICS (Note 2) | | | | | | |
| BV _{DSS} | Drain-Source Breakdown Voltage | I _D =10 μ A, V _{GS} =0 V | 60 | | | V |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =60V, V _{GS} =0 V | | | 1 | μ A |
| I _{GSS} | Gate-Body leakage current | V _{DS} =0 V, V _{GS} =±20 V | | | ±10 | μ A |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} I _D =250uA | 0.45 | | 0.85 | V |
| R _{DS(on)} | Static Drain-Source On-Resistance ² | V _{GS} =10V, I _D =0.5A | | 2 | - | Ω |
| | | V _{GS} =5V, I _D =0.05A | | 3 | - | Ω |
| Y _{fs} | Forward Transfer Admittance | V _{GS} = 10 V, I _S = 0.2 A | 80 | | | ms |
| DYNAMIC PARAMETERS | | | | | | |
| C _{iss} | Input Capacitance | V _{GS} =0V, V _{DS} =25V, f=1MHz | | | 50 | pF |
| C _{oss} | Output Capacitance | | | | 25 | pF |
| C _{rss} | Reverse Transfer Capacitance | | | | 5 | pF |

Typical Characteristics



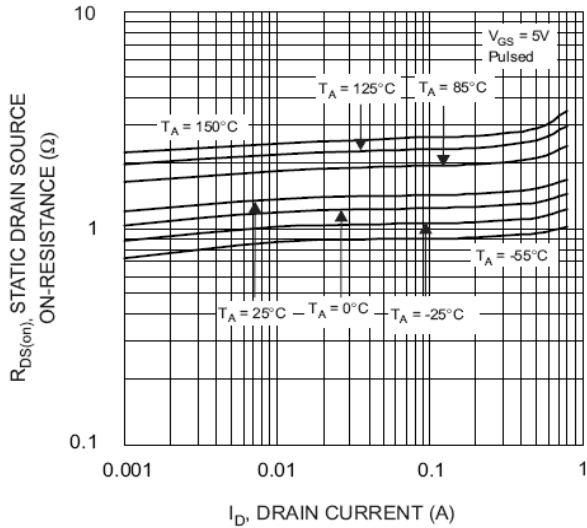


Fig. 5 Static Drain-Source On-Resistance vs. Drain Current

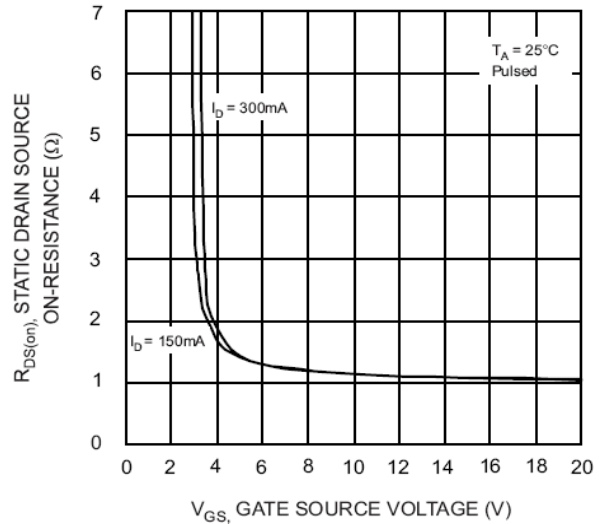


Fig. 6 Static Drain-Source On-Resistance vs. Gate-Source Voltage

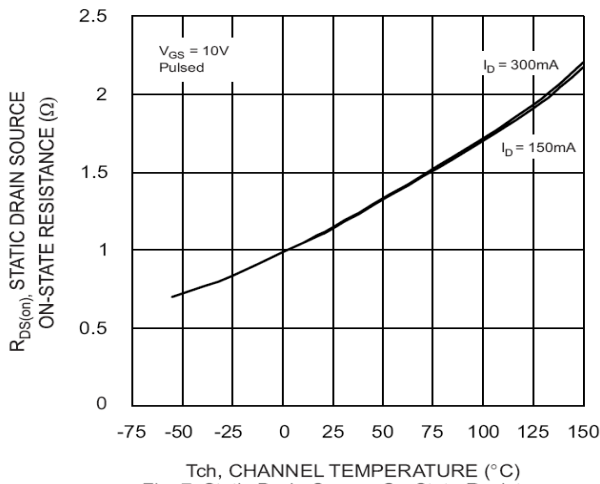


Fig. 7 Static Drain-Source On-State Resistance vs. Channel Temperature

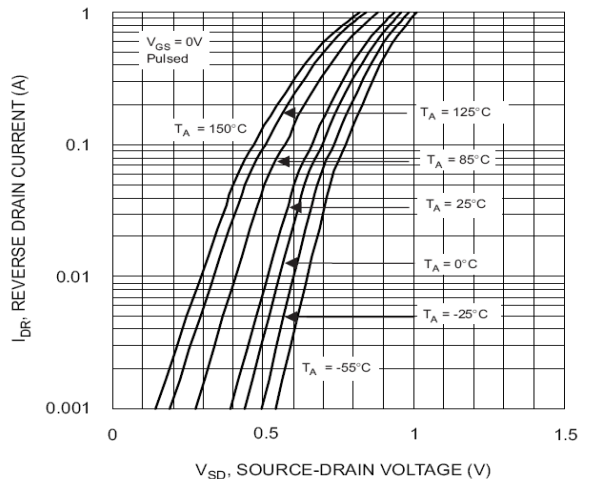


Fig. 8 Reverse Drain Current vs. Source-Drain Voltage

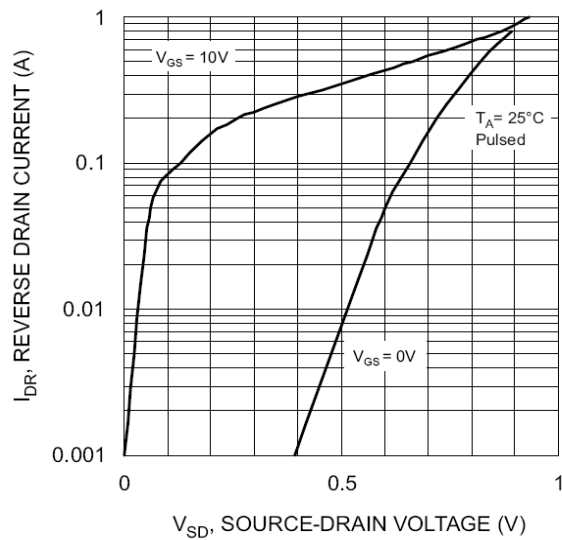


Fig. 9 Reverse Drain Current vs. Source-Drain Voltage

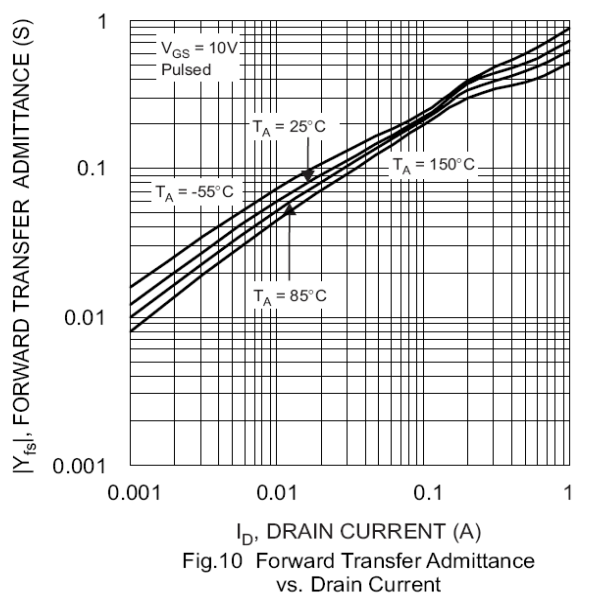


Fig. 10 Forward Transfer Admittance vs. Drain Current

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