

Descriptions

CT7N65I is N-CHANNEL MOSFET in a TO-251 Plastic Package.

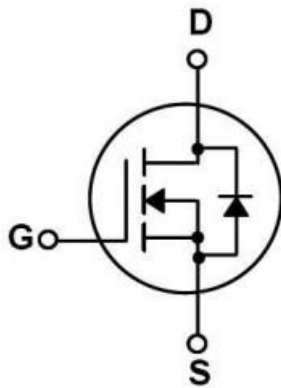
Features

- Low gate charge
- Low Crss
- Fast switching
- Halogen-free product

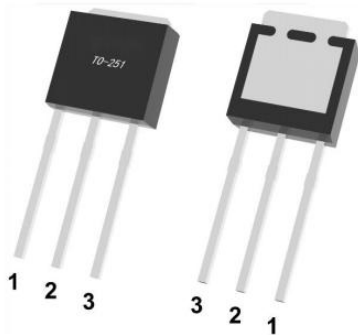
Applications

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

Equivalent Circuit



Pinning



PIN1: G PIN 2: D PIN 3: S

Marking

See Marking Instructions.

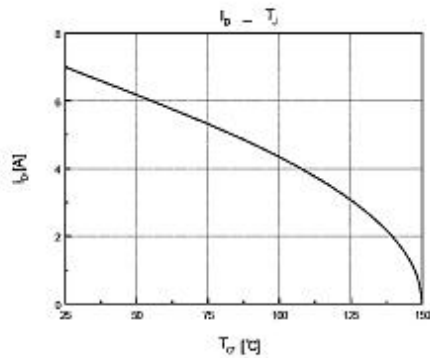
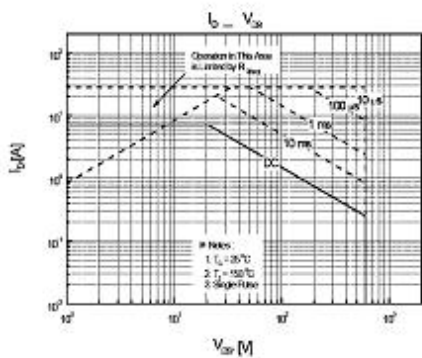
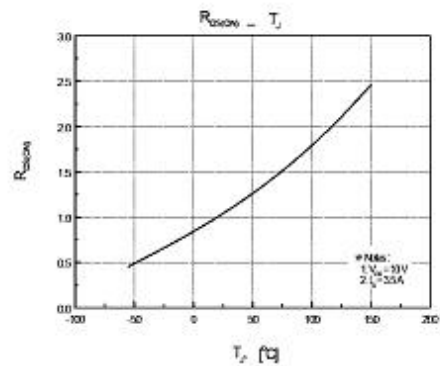
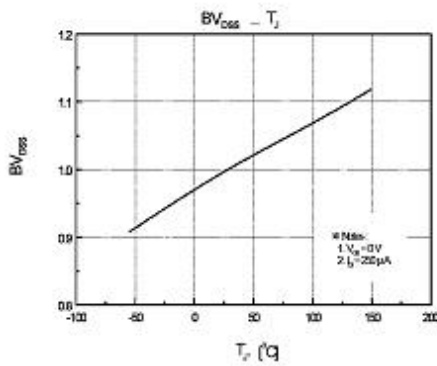
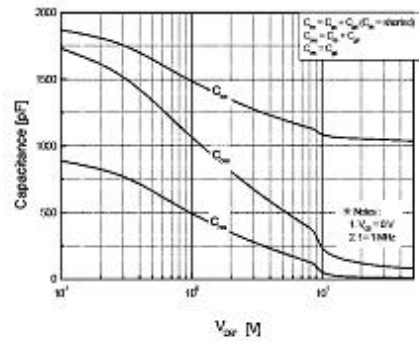
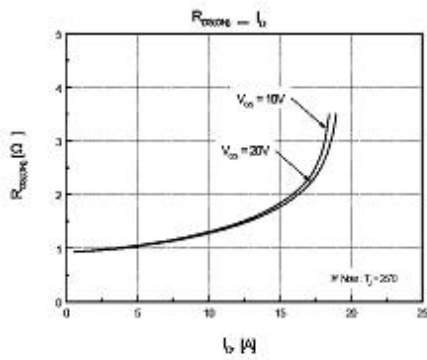
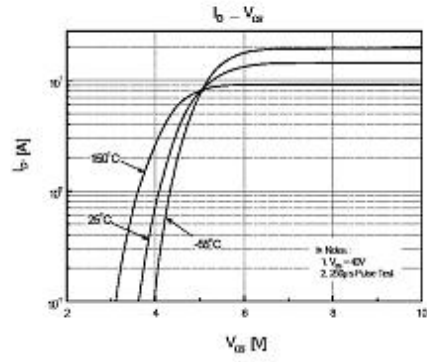
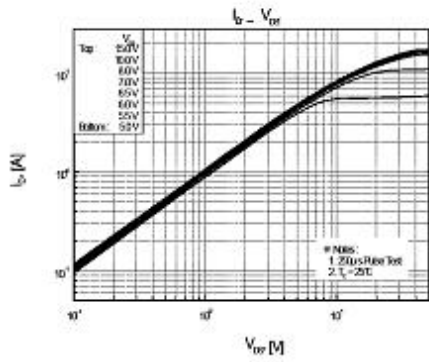
Absolute Maximum Ratings(Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---|-----------------------------------|------------|------|
| Drain-Source Voltage | V _{DSS} | 650 | V |
| Drain Current | I _D (Tc=25°C) | 7.0 | A |
| Drain Current | I _D (Tc=100°C) | 4.4 | A |
| Drain Current - Pulsed | I _{DM} | 28 | A |
| Gate-Source Voltage | V _{GS} | ±30 | V |
| Single Pulsed Avalanche Energy | E _{AS} | 230 | mJ |
| Repetitive Avalanche Energy | E _{AR} | 14.7 | mJ |
| Avalanche Current | I _{AR} | 7.0 | A |
| Power Dissipation | P _D (Tc=25°C) | 48 | W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to 150 | °C |

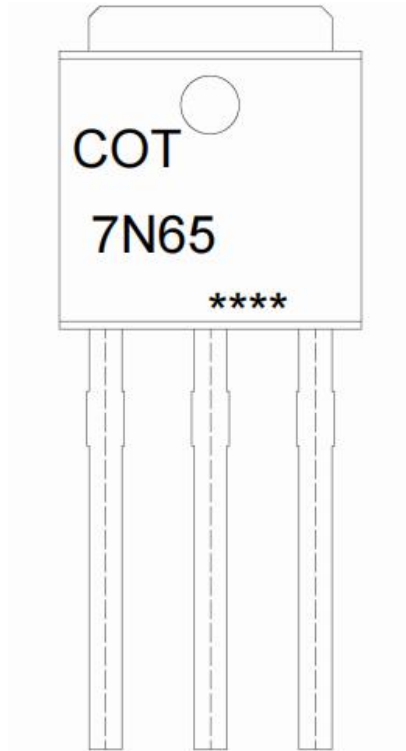
Electrical Characteristics(Ta=25°C)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------------|---------------------|---|-----|------|------|------|
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} =0V I _D =250μA | 650 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =650V V _{GS} =0V | | | 1.0 | μA |
| | | V _{DS} =520V T _C =125°C | | | 100 | μA |
| Gate-Body Leakage Current, Forward | I _{GSS} | V _{GS} =±30V V _{DS} =0V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} I _D =250μA | 2.0 | | 4.0 | V |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =10V I _D =3.5A | | | 1.5 | Ω |
| Forward Transconductance | g _{FS} | V _{DS} =15V I _D =4.0A | 2.7 | 10.1 | | S |
| Drain-Source Diode Forward Voltage | V _{SD} | V _{GS} =0V I _S =7.0A | | | 1.4 | V |
| Input Capacitance | C _{iSS} | V _{DS} =25V V _{GS} =0V f=1.0MHz | | 1100 | 1500 | pF |
| Output Capacitance | C _{oss} | | | 110 | 150 | pF |
| Reverse Transfer Capacitance | C _{rSS} | | | 12 | 16 | pF |
| Turn-On Delay Time | t _{d(on)} | V _{DD} =300V I _D =7.0A R _G =25Ω | | 15 | 40 | ns |
| Turn-On Rise Time | t _r | | | 30 | 70 | ns |
| Turn-Off Delay Time | t _{d(off)} | | | 110 | 230 | ns |
| Turn-Off Fall Time | t _f | | | 40 | 90 | ns |

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Code

7N65: Product Type

****: Lot No. Code, code change with Lot No

Packaging SPEC

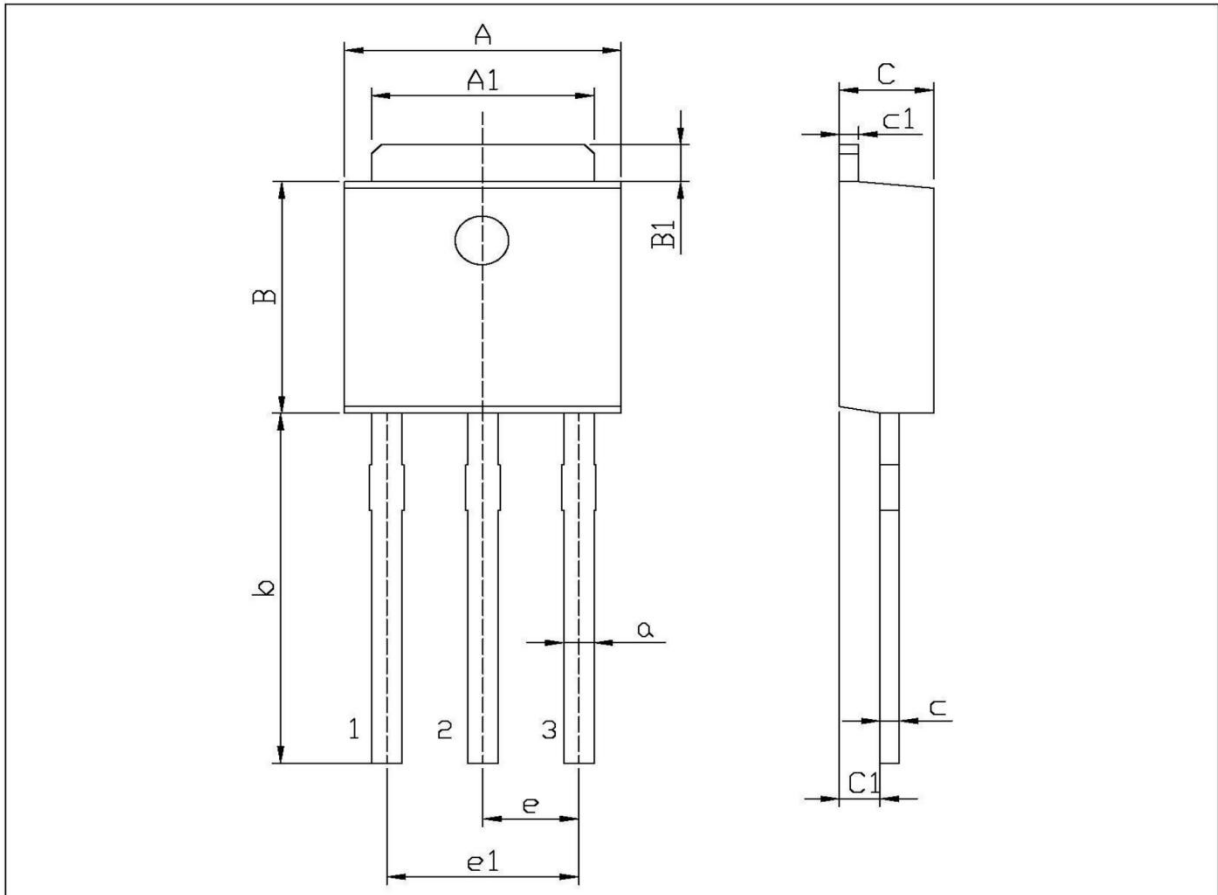
BULK

| Package Type | Units | | | | | Dimension (unit: mm ³) | | |
|--------------|-----------|----------------|-----------------|-----------------------|-----------------|------------------------------------|-------------|-------------|
| | Units/Bag | Bags/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Bag | Inner Box | Outer Box |
| TO-251 | 1,000 | 10 | 10,000 | 5 | 50,000 | 135×190 | 237×172×102 | 560×245×195 |

TUBE

| Package Type | Units | | | | | Dimension (unit: mm ³) | | |
|--------------|------------|-----------------|-----------------|-----------------------|-----------------|------------------------------------|------------|-------------|
| | Units/Tube | Tubes/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Tube | Inner Box | Outer Box |
| TO-251/252 | 75 | 48 | 3,600 | 5 | 18,000 | 526×20.5×5.25 | 555×164×50 | 575×290×180 |

Package Outline Dimensions



单位: mm

| Symbol | Dimensions In Millimeters | | Symbol | Dimensions In Millimeters | |
|--------|---------------------------|------|--------|---------------------------|------|
| | Min | Max | | Min | Max |
| A | 6.45 | 6.75 | a | 0.50 | 0.90 |
| A1 | 5.10 | 5.50 | b | 9.00 | 9.40 |
| B | 5.95 | 6.25 | c | 0.45 | 0.55 |
| B1 | 0.95 | 1.25 | c1 | 0.45 | 0.55 |
| C | 2.20 | 2.40 | e | 2.24 | 2.34 |
| C1 | 0.95 | 1.15 | e1 | 4.43 | 4.73 |

TO-251