Elektronische Bauelemente

# SSD80N03J

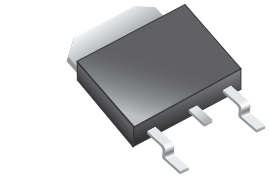
**80A, 30V, $R_{DS(ON)}$ 6.5mΩ**
**N-Ch Enhancement Mode Power MOSFET**

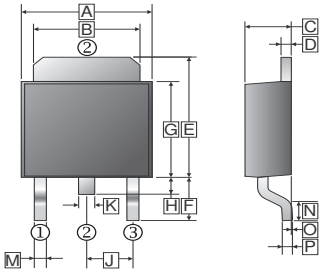
RoHS Compliant Product
A suffix of "-C" specifies halogen free

## DESCRIPTION

SSD80N03J is the highest performance trench N-ch MOSFETs with extreme high cell density , which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

**TO-252(D-Pack)**






| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 6.35 | 6.80 | J | 2.30 REF. | |
| B | 5.20 | 5.50 | K | 0.64 | 0.90 |
| C | 2.15 | 2.40 | M | 0.50 | 1.1 |
| D | 0.45 | 0.58 | N | 0.9 | 1.7 |
| E | 6.8 | 7.6 | O | 0 | 0.15 |
| F | 2.9 REF. | | P | 0.43 | 0.58 |
| G | 5.40 | 6.25 | | | |
| H | 0.64 | 1.20 | | | |

## FEATURES

- Advanced high cell density Trench technology
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- 100% EAS Guaranteed

## MARKING

**CJU80N03**
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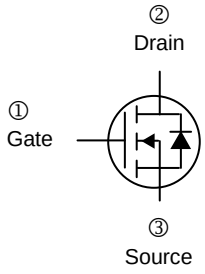
## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| TO-252 | 2.5K | 13 inch |




## ABSOLUTE MAXIMUM RATINGS ($T_A$=25℃ unless otherwise specified)

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±20 | V |
| Continuous Drain Current | $I_D$ | 80 | A |
| Pulsed Drain Current | $I_{DM}$ | 320 | A |
| Single Pulse Avalanche Energy [1] | $E_{AS}$ | 306 | mJ |
| Total Power Dissipation | $P_D$ | 1.25 | W |
| Maximum Thermal Resistance Junction-Ambient | $R_{\theta JA}$ | 100 | ℃ / W |
| Lead Temperature for Soldering Purposes(1/8'' from case for 10s) | $T_L$ | 260 | ℃ |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{STG}$ | 150, -55~150 | ℃ |

Notes:
1. EAS condition: $V_{DD}$=20V,L=0.5mH, $R_G$=25Ω, Starting $T_J$ = 25℃

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**80A, 30V, $R_{DS(ON)}$ 6.5mΩ**
**N-Ch Enhancement Mode Power MOSFET**

## ELECTRICAL CHARACTERISTICS ($T_J$=25℃ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | 30 | - | - | V | $V_{GS}$=0, $I_D$=250μA |
| Drain-Source Leakage Current | $I_{DSS}$ | - | - | 1 | μA | $V_{DS}$=30V, $V_{GS}$=0 |
| Gate-Source Leakage Current | $I_{GSS}$ | - | - | ±100 | nA | $V_{GS}$= ±20V |
| **On Characteristics** [1] | | | | | | |
| Gate-Threshold Voltage | $V_{GS(th)}$ | 1.0 | - | 3 | V | $V_{DS}$=$V_{GS}$, $I_D$=250μA |
| Static Drain-Source On-Resistance [2] | $R_{DS(ON)}$ | - | - | 6.5 | mΩ | $V_{GS}$=10V, $I_D$=30A |
| | | - | - | 10 | | $V_{GS}$=5V, $I_D$=24A |
| Forward Transconductance | $g_{fs}$ | 20 | - | - | S | $V_{DS}$=5V, $I_D$=24A |
| **Dynamic Characteristics** | | | | | | |
| Total Gate Charge | $Q_g$ | - | 51 | - | nC | $I_D$=30A<br>$V_{DS}$=10V<br>$V_{GS}$=10V |
| Gate-Source Charge | $Q_{gs}$ | - | 14 | - | | |
| Gate-Drain (“Miller”) Change | $Q_{gd}$ | - | 11 | - | | |
| Turn-on Delay Time | $T_{d(on)}$ | - | 20 | - | nS | $V_{DD}$=15V<br>$I_D$=30A<br>$V_{GS}$=10V<br>$R_G$=2.7Ω |
| Rise Time | $T_r$ | - | 15 | - | | |
| Turn-off Delay Time | $T_{d(off)}$ | - | 60 | - | | |
| Fall Time | $T_f$ | - | 10 | - | | |
| **Switching Characteristics** | | | | | | |
| Input Capacitance | $C_{iss}$ | - | 2330 | - | pF | $V_{GS}$ =0<br>$V_{DS}$=15V<br>f =1.0MHz |
| Output Capacitance | $C_{oss}$ | - | 460 | - | | |
| Reverse Transfer Capacitance | $C_{rss}$ | - | 230 | - | | |
| **Source-Drain Diode Characteristics** | | | | | | |
| Diode Forward Voltage [1] | $V_{SD}$ | - | - | 1.2 | V | $I_S$=24A, $V_{GS}$=0 |
| Continuous Source Current | $I_S$ | - | - | 80 | A | |
| Pulsed Source Current | $I_{SM}$ | - | - | 320 | A | |

Notes:
1. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.