



SUP75N05-06A vs. SUP75N05-06

Description: N-Channel, 50 V (D-S) 175 °C MOSFET
Package: TO-220
Pin Out: Identical

Part Number Replacements

SUP75N05-06A-E3 Replaces SUP75N05-06-E3
 SUP75N05-06A Replaces SUP75N05-06

| ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$, unless otherwise noted) | | | | |
|--|---------------------|-----------------------|-------------|------|
| Parameter | Symbol | SUP75N05-06A | SUP75N05-06 | Unit |
| Drain-Source Voltage | V_{DS} | 50 | 50 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | ± 20 | |
| Continuous Drain Current | I_D | $T_C = 25\text{ °C}$ | 75 | A |
| | | $T_C = 125\text{ °C}$ | 70 | |
| Pulsed Drain Current | I_{DM} | 240 | 240 | |
| Power Dissipation | P_D | 250 | 250 | W |
| Operating Junction and Storage Temperature Range | T_J and T_{stg} | - 55 to 175 | - 55 to 175 | °C |
| Maximum Junction-to-Ambient | R_{thJA} | 62.5 | 62.5 | °C/W |

| SPECIFICATIONS ($T_J = 25\text{ °C}$, unless otherwise noted) | | | | | | | | |
|--|--------------|--------------|-------|-----------|-------------|-------|-----------|----------|
| Parameter | Symbol | SUP75N05-06A | | | SUP75N05-06 | | | Unit |
| | | Min | Typ | Max | Min | Typ | Max | |
| Static | | | | | | | | |
| Gate-Threshold Voltage | $V_{GS(th)}$ | 2.0 | | 4.0 | 2.0 | | 4.0 | V |
| Gate-Body Leakage | I_{GSS} | | | ± 100 | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | | | 1 | | | 1 | μA |
| On-State Drain Current | $I_{D(on)}$ | 120 | | | 120 | | | A |
| Drain-Source On-Resistance | $r_{DS(on)}$ | | 0.005 | 0.006 | | 0.005 | 0.006 | Ω |
| Forward Transconductance | g_{fs} | 30 | | | 30 | | | S |
| Diode Forward Voltage | V_{SD} | | 1.0 | 1.4 | | 1.0 | 1.4 | V |
| Dynamic | | | | | | | | |
| Total Charge | Q_g | | 85 | 120 | | 85 | 120 | nC |
| Gate-Source Charge | Q_{gs} | | 25 | | | 25 | | |
| Gate-Drain Charge | Q_{gd} | | 25 | | | 25 | | |
| Gate Resistance | R_g | | 3 | | | NS | | Ω |
| Switching | | | | | | | | |
| Turn-On Time | $t_{d(on)}$ | | 20 | 40 | | 20 | 40 | ns |
| | t_r | | 20 | 100 | | 20 | 100 | |
| Turn-Off Time | $t_{d(off)}$ | | 50 | 100 | | 50 | 100 | |
| | t_f | | 20 | 40 | | 20 | 40 | |
| Source-Drain Reverse Recovery Time | t_{rr} | | 65 | 120 | | 65 | 120 | |

NS denotes parameter not specified

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.