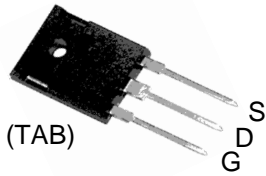
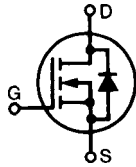


SMOS21N50, SMOS26N50

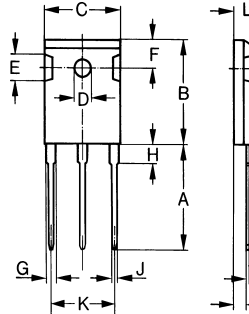
Power MOSFETs



G=Gate, D=Drain,
S=Source, TAB=Drain



Dimensions TO-247AD



| Dim. | Millimeter | | Inches | |
|------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 19.81 | 20.32 | 0.780 | 0.800 |
| B | 20.80 | 21.46 | 0.819 | 0.845 |
| C | 15.75 | 16.26 | 0.610 | 0.640 |
| D | 3.55 | 3.65 | 0.140 | 0.144 |
| E | 4.32 | 5.49 | 0.170 | 0.216 |
| F | 5.4 | 6.2 | 0.212 | 0.244 |
| G | 1.65 | 2.13 | 0.065 | 0.084 |
| H | - | 4.5 | - | 0.177 |
| J | 1.0 | 1.4 | 0.040 | 0.055 |
| K | 10.8 | 11.0 | 0.426 | 0.433 |
| L | 4.7 | 5.3 | 0.185 | 0.209 |
| M | 0.4 | 0.8 | 0.016 | 0.031 |
| N | 1.5 | 2.49 | 0.087 | 0.102 |

| Symbol | Test Conditions | Maximum Ratings | Unit |
|-----------|--|-----------------|--------------------|
| V_{DSS} | $T_J=25^{\circ}\text{C}$ to 150°C | 500 | V |
| V_{DGR} | $T_J=25^{\circ}\text{C}$ to 150°C ; $R_{GS}=1\text{M}\Omega$ | 500 | V |
| V_{GS} | Continuous | ± 20 | V |
| V_{GSM} | Transient | ± 30 | V |
| I_{D25} | $T_C=25^{\circ}\text{C}$ | 21N50 26 | A |
| I_{DM} | $T_C=25^{\circ}\text{C}$; pulse width limited by T_{JM} | 21N50 26N50 | 84 104 |
| I_{AR} | $T_C=25^{\circ}\text{C}$ | 21N50 26N50 | 21 26 |
| E_{AR} | $T_C=25^{\circ}\text{C}$ | 30 | mJ |
| dv/dt | $I_S \leq I_{DM}$; $di/dt \leq 100\text{A}/\mu\text{s}$; $V_{DD} \leq V_{DSS}$ $T_J \leq 150^{\circ}\text{C}$; $R_G=2\Omega$ | 5 | V/ns |
| P_D | $T_C=25^{\circ}\text{C}$ | 300 | W |
| T_J | | -55...+150 | $^{\circ}\text{C}$ |
| T_{JM} | | 150 | $^{\circ}\text{C}$ |
| T_{stg} | | -55...+150 | $^{\circ}\text{C}$ |
| T_L | 1.6mm(0.062 in.) from case for 10s | 300 | $^{\circ}\text{C}$ |
| M_d | Mounting torque | 1.13/10 | Nm/lb.in. |
| Weight | | 6 | g |

SMOS21N50, SMOS26N50

Power MOSFETs

(T_J=25°C, unless otherwise specified)

| Symbol | Test Conditions | Characteristic Values | | | Unit |
|---------------------|---|-----------------------|------|----------|----------|
| | | min. | typ. | max. | |
| V _{DSS} | V _{GS} =0V; I _D =250μA | 500 | | | V |
| V _{GS(th)} | V _{DS} =V _{GS} ; I _D =4mA | 2 | | 4 | V |
| I _{GSS} | V _{GS} =±20VDC; V _{DS} =0 | | | ±100 | nA |
| I _{DSS} | V _{DS} =0.8V _{DSS} ; T _J =25°C V _{GS} =0V; T _J =125°C | | | 200 1 | μA mA |

(T_J=25°C, unless otherwise specified)

| Symbol | Test Conditions | Characteristic Values | | | Unit |
|---|---|-----------------------|----------------------|----------------------|----------------------|
| | | min. | typ. | max. | |
| R _{DS(on)} | V _{GS} =10V; I _D =0.5I _{D25} 21N50 26N50 Pulse test, t ≤ 300μs, duty cycle ≤ 2% | | | 0.25 0.23 0.20 | Ω |
| g _{ts} | V _{DS} =10V; I _D =0.5I _{D25} ; pulse test | 11 | 21 | | S |
| C _{ies} C _{oes} C _{res} | V _{GS} =0V; V _{DS} =25V; f=1MHz | | 4200 450 135 | | pF |
| Q _{g(on)} Q _{gs} Q _{gd} | V _{GS} =10V; V _{DS} =0.5V _{DSS} ; I _D =0.5I _{D25} | | 135 28 62 | 160 40 85 | nC |
| t _{d(on)} t _r t _{d(off)} t _f | V _{GS} =10V; V _{DS} =0.5V _{DSS} ; I _D =0.5I _{D25} R _G =2Ω (External) | | 16 33 65 30 | 25 45 80 40 | ns ns ns ns |
| R _{thJC} | | | | 0.42 | K/W |
| R _{thCK} | | | 0.25 | | K/W |

Source-Drain Diode

(T_J=25°C, unless otherwise specified)

| Symbol | Test Conditions | Characteristic Values | | | Unit |
|-----------------|---|-----------------------|----------|------------|----------|
| | | min. | typ. | max. | |
| I _S | V _{GS} =0V 21N50 26N50 | | | 21 26 | A |
| I _{SM} | Repetitive; pulse width limited by T _{JM} 21N50 26N50 | | | 84 104 | A |
| V _{SD} | I _F =I _S ; V _{GS} =0V; Pulse test, t ≤ 300μs, duty cycle d ≤ 2% | | | 1.5 | V |
| t _{rr} | I _F =I _S ; -di/dt=100A/μs; V _R =100V; T _J =25°C T _J =125°C | | | 250 400 | ns ns |
| Q _{RM} | T _J =25°C T _J =125°C | | 1 2 | | μC μC |
| I _{RM} | T _J =25°C T _J =125°C | | 10 15 | | A A |

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