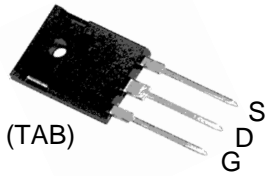
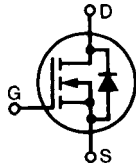


# SMOS21N50, SMOS26N50

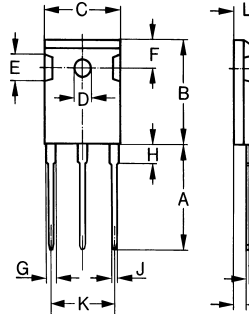
## Power MOSFETs



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 $150^{\circ}\text{C}$	500	V
$V_{DGR}$	$T_J=25^{\circ}\text{C}$ to $150^{\circ}\text{C}$ ; $R_{GS}=1\text{M}\Omega$	500	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	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<sub>J</sub>=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
V <sub>DSS</sub>	V <sub>GS</sub> =0V; I <sub>D</sub> =250μA	500			V
V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =4mA	2		4	V
I <sub>GSS</sub>	V <sub>GS</sub> =±20VDC; V <sub>DS</sub> =0			±100	nA
I <sub>DSS</sub>	V <sub>DS</sub> =0.8V <sub>DSS</sub> ; T <sub>J</sub> =25°C V <sub>GS</sub> =0V; T <sub>J</sub> =125°C			200 1	μA mA

(T<sub>J</sub>=25°C, unless otherwise specified)

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

### Source-Drain Diode

(T<sub>J</sub>=25°C, unless otherwise specified)

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

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