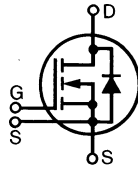
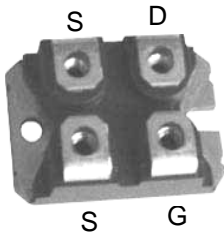
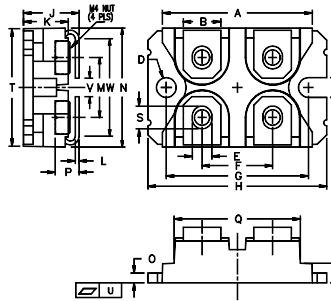


SMOS44N50, SMOS48N50

Power MOSFETs



Dimensions SOT-227(ISOTOP)



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.20	1.489	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	0.031	0.033

G=Gate, D=Drain, S=Source

Symbol	Test Conditions	Maximum Ratings	Unit	
V _{DSS}	T _J =25°C to 150°C	500	V	
V _{DGR}	T _J =25°C to 150°C; R _{GS} =1MΩ	500	V	
V _{GS}	Continuous	±20	V	
V _{GSM}	Transient	±30	V	
I _{D25}	T _C =25°C	44N50 48N50	44 48	A
I _{DM}	T _C =25°C; pulse width limited by T _{JM}	44N50 48N50	176 192	A
I _{AR}	T _C =25°C		24	A
E _{AR}	T _C =25°C		30	mJ
dv/dt	I _S ≤ I _{DM} ; di/dt ≤ 100A/us; V _{DD} ≤ V _{DSS} T _J ≤ 150°C; R _G =2Ω		5	V/ns
P _D	T _C =25°C		520	W
T _J		-55...+150		°C
T _{JM}		150		°C
T _{stg}		-55...+150		°C
T _L	1.6mm(0.063 in.) from case for 10s	-		°C
V _{ISOL}	50/60Hz,RMS t=1 min I _{ISOL} ≤ 1mA t=1 s	2500 3000		V~
M _d	Mounting torque Terminal connection torque	1.5/13 1.5/13		Nm/lb.in.
Weight		30		g

SMOS44N50, SMOS48N50

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 =1 mA	500			V
V _{GS(th)}	V _{DS} =V _{GS} ; I _D =8 mA	2		4	V
I _{GSS}	V _{GS} =±20V _{DC} ; V _{DS} =0			±200	nA
I _{DSS}	V _{DS} =0.8V _{DSS} ; T _J =25°C V _{GS} =0V; T _J =125°C			400 2	uA mA
R _{DS(on)}	V _{GS} =10V; I _D =0.5I _{D25} 44N50 48N50 Pulse test, t ≤ 300us, duty cycle d ≤ 2%			0.12 0.10	Ω Ω

(T_J=25°C, unless otherwise specified)

Symbol	Test Conditions	Characteristic Values			Unit
		min.	typ.	max.	
g _{ts}	V _{DS} =10V; I _D =0.5I _{D25} ; pulse test	22	42		S
C _{ies} C _{oes} C _{res}	V _{GS} =0V; V _{DS} =25V; f=1MHz		8400 900 280		pF
Q _{g(on)} Q _{gs} Q _{gd}	V _{GS} =10V; V _{DS} =0.5V _{DSS} ; I _D =0.5I _{D25}		270 60 135		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 =1Ω (External)		30 60 100 30		ns ns ns ns
R _{thJC}				0.24	K/W
R _{thCK}			0.05		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			48	A
I _{SM}	Repetitive; pulse width limited by T _{JM}			192	A
V _{SD}	I _F =100A; V _{GS} =0V; Pulse test, t ≤ 300us, duty cycle d ≤ 2%			1.5	V
t _{rr}				250	ns
Q _{RM} I _{RM}	I _F =I _S ; -di/dt=100A/us; V _R =100V;		TBD 20		uC A