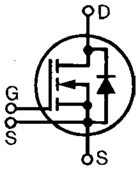
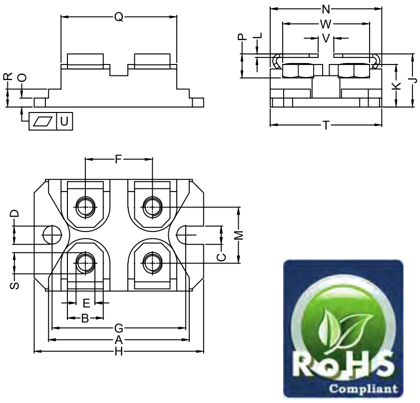
SMOS44N50, SMOS48N50

Power MOSFETs

G=Gate, D=Drain,S=Source

Dimensions SOT-227





Dim.	Millimeter		Dim.	Millimeter	
	Min.	Max.		Min.	Max.
A	31.30	31.65	M	12.00	13.00
B	7.80	8.40	N	25.15	25.65
C	4.00	4.30	O	1.95	2.15
D	Ø4.00	Ø4.30	P	5.60	6.60
E	4.00	4.30	Q	25.30	26.30
F	14.90	15.20	R	3.90	4.30
G	30.10	30.30	S	4.45	4.85
H	38.00	38.50	T	24.50	25.10
J	12.10	12.90	U	0.05	0.10
K	9.00	9.60	V	3.00	4.80
L	0.75	0.85	W	19.30	20.50

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_{GS}	Continuous		±20	V
V_{GSM}	Transient		±30	
I_{D25}	T_C=25°C	44N50	44	A
		48N50	48	
I_{DM}	T_C=25°C; pulse width limited by T_{JM}	44N50	176	A
		48N50	192	
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_{JS}≤150°C; R_G=2Ω		5	V/ns
P_D	T_C=25°C		520	W
T_J			-55...+150	°C
T_{JM}			150	
T_{stg}			-55...+150	
T_L	1.6mm(0.063 in.) from case for 10s		-	°C
V_{ISOL}	50/60Hz,RMS t=1 min		2500	V~
	I_{ISOL}≤1mA t=1 s		3000	
M_d	Mounting torque		1.5/13	Nm/lb.in.
	Terminal connection torque		1.5/13	
Weight	typical		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			400	uA
	V_{GS}=0V; T_J=125°C			2	mA
$R_{DS(on)}$	V_{GS}=10V; I_D=0.5I_{D25} 44N50			0.12	Ω
	48N50			0.10	
	Pulse test, t ≤300us, duty cycle d≤2%				

(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}	V_{GS}=0V; V_{DS}=25V; f=1MHz		8400		pF
C_{oes}			900		
C_{res}			280		
$Q_{g(on)}$	V_{GS}=10V; V_{DS}=0.5$V_{DSS'}$; I_D=0.5I_{D25}		270		nC
Q_{gs}			60		
Q_{gd}			135		
$t_{d(on)}$	V_{GS}=10V; V_{DS}=0.5V_{DSS}; I_D=0.5I_{D25} R_G=1Ω (External)		30		ns
t_r			60		ns
$t_{d(off)}$			100		ns
t_f			30		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, t300us, duty cycle d 2%			1.5	V
t_{rr}	I_F=I_S; -di/dt=100A/us; V_R=100V;			250	ns
Q_{RM}			TBD		uC
I_{RM}			20		A