SPW20N60C3-OSEN

600V super-junction Power MOSFET

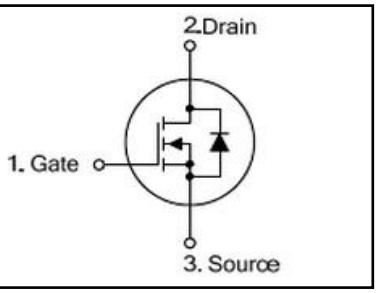
◆ Features:

- ✧ Very Low FOM RDS(on)
  低内阻
- ✧ %100 avalanche tested
  %100 雪崩能量测试
- ✧ RoHS compliant
  RoHS 认证
- ✧ Improved dv/dt capability，high ruggedness
  提高 dv/dt 能力，高耐用性

RoHS COMPLIANT

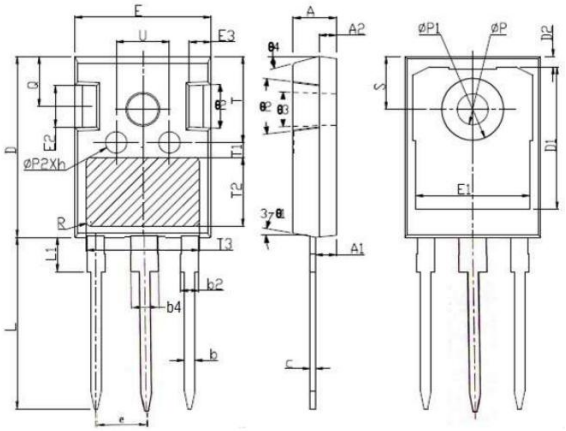
TO-247G





◆ Applications

- ✧ High efficiency switch mode power supplies
  高效率开关电源
- ✧ Power factor correction
  功率因数校正
- ✧ Electronic lamp ballast
  电子整流器



Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	4.9	5.0	5.1	e		5.44BSC	
A1	2.3	2.4	2.5	h	0.05	0.10	0.15
A2	1.9	2.0	2.1	L	19.6	19.9	20.2
b	1.10	1.20	1.25	L1			4.3
b2	1.90	2.00	2.25	Φp	3.5	3.6	3.75
b4	2.90	3.00	3.25	Φp1			7.3
c	0.50	0.60	0.70	Φp2	2.4	2.5	2.6
D	20.8	21.0	21.2	Q	5.3		5.9
D1	16.25	16.55	16.85	S		6.15BSC	
D2	1.05	1.20	1.35	T	9.8		10.2
E	15.6	15.8	16.0	T1		1.65REF	
E1	13.1	13.3	13.5	T2		8.0REF	
E2	4.9	5.0	5.1	T3		12.8REF	
E3	2.4	2.5	2.6	U	6.0		6.4
单位		mm		型号		TO-247G	

◆ Absolute Maximum Ratings (Tc=25°C)

Symbol	Parameters	Ratings	Unit
V_{DSS}	Drain-Source Voltage 漏源电压	**600**	V
V_{GS}	Gate-Source Voltage-Continuous 栅源电压	**±30**	V
I_D	Drain Current-Continuous（Note 2） 漏极持续电流	**20.7**	A
I_{DM}	Drain Current-Single Plused（Note 1） 漏极单次脉冲电流	**62.1**	A
P_D	Power Dissipation （Note 2） 功率损耗	**208**	W
T_j	Max.Operating junction temperature 最大结温	**150**	℃

◆ Electrical characteristics (Tc=25°C unless otherwise noted)

Symbol	Parameters	Min	Typ	Max	Units	Conditions
Static Characteristics						
B_{VDSS}	Drain-Source Breakdown Voltage Current （Note 1） 漏极击穿电压	**600**	--	--	V	I_D=250μA， V_{GS}=0V，T_J=25°C
$V_{GS(th)}$	Gate Threshold Voltage 栅极开启电压	**2.5**	--	**4.5**	V	V_{DS}=V_{GS}，I_D=250μA
$R_{DS(on)}$	Drain-Source On-Resistance 漏源导通电阻	--	**0.16**	**0.19**	Ω	V_{GS}=10V，I_D=1A
I_{GSS}	Gate-Body Leakage Current 栅极漏电流	--	--	**±100**	nA	V_{GS}=±30V，V_{DS}=0
I_{DSS}	Zero Gate Voltage Drain Current 零栅极电压漏极电流	--	--	**1**	μA	V_{DS}=600V，V_{GS}=0
gfs	Forward Trans conductance 正向跨导	--	**18**	--	S	V_{DS}=10V，I_D=13.1A

Switching Characteristics						
$T_{d(on)}$	Turn-On Delay Time 开启延迟时间	--	**17**	--	ns	V_{DS}=380V，I_D=20A，R_G=3.6Ω（Note 2）
T_r	Rise Time 上升时间	--	**7**	--	ns	
$T_{d(off)}$	Turn-Off Delay Time 关闭延迟时间	--	**72**	--	ns	
T_f	Fall Time 下降时间	--	**5**	--	ns	
Q_g	Total Gate Charge 栅极总电荷	--	**14**	--	nC	V_{DS}=400V，V_{GS}=10V，I_D=20A（Note 2）
Q_{gs}	Gate-Source Charge 栅源极电荷	--	**35**	--	nC	
Q_{gd}	Gate-Drain Charge 栅漏极电荷	--	**89**	--	nC	
Dynamic Characteristics						
C_{iss}	Input Capacitance 输入电容	--	**1600**	--	pF	V_{DS}=25V，V_{GS}=0，f=1MHz
C_{oss}	Output Capacitance 输出电容	--	**740**	--	pF	
C_{rss}	Reverse Transfer Capacitance 反向传输电容	--	**55**	--	pF	
I_S	Continuous Drain-Source Diode Forward Current（Note 2） 二极管导通正向持续电流	--	--	**20.7**	A	
V_{SD}	Diode Forward On-Voltage 二极管正向导通电压	--	--	**1.2**	V	I_S=20A，V_{GS}=0
$R_{th(j-c)}$	Thermal Resistance, Junction to Case 结到外壳的热阻	--	--	**0.60**	°C/W	

Note 1: Repetitive Rating : Pulse width limited by maximum junction temperature

Note 2: Pulse test: PW <= 300us , duty cycle <= 2%.

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