

P-Channel 100V MOSFET

E38P100KH

V_{DS} (V)	$R_{DS(on),max}$ (m Ω)	I_D (A)
-100	50@ $V_{GS} = -10V$	-38

Features

- Trench MOS technology
- Low $R_{DS(on)}$, Low Q_g
- Excellent Gate Charge x $R_{DS(ON)}$ Product (FOM)

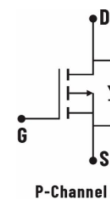
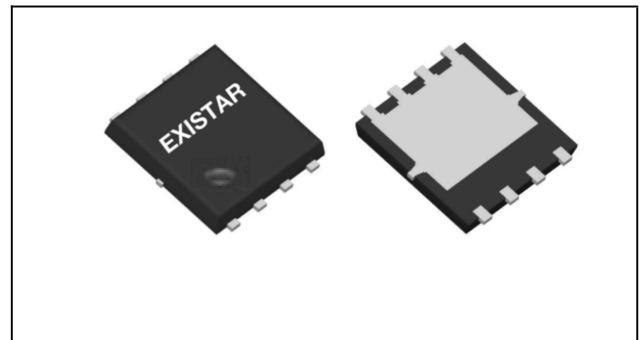
Applications

- Fast switching

Package and ordering information

Ordering code	Package	Device code
E38P100KH	PDFN5*6	---

PDFN5*6



RoHS
COMPLIANT
HALOGEN
FREE

Absolute Maximum Ratings $T_A=25^\circ\text{C}$ unless otherwise noted

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous drain current	$TC=25^\circ\text{C}$	I_D	-38	A
	$TC=100^\circ\text{C}$	I_D	-18	A
Drain Current – Pulsed		I_{DM}	-120	A
Maximum Power Dissipation		P_D	104	W
Single pulse avalanche energy		E_{AS}	285	mJ
Junction and Storage Temperature Range		T_J, T_{STG}	-55 To 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance junction-case	$R_{\theta JC}$		1.2	$^\circ\text{C}/\text{W}$
Thermal Resistance junction-to-Ambient	$R_{\theta JA}$		62	$^\circ\text{C}/\text{W}$

Electrical Characteristics(TJ=25 °C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
STATICPARAMETERS						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V,I _D =-250μA	-100			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-100V,V _{GS} =0V			-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V,V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =-250μ A	-1.5	-1.9	-2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-6A		35	50	mΩ
		V _{GS} =-4.5V,I _D =-5A		42	60	mΩ
gfs	Forward Transconductance	V _{DS} =-5V, I _D =-5A		23		S
DYNAMICPARAMETERS						
C _{iss}	Input Capacitance	V _{DS} =-25V,V _{GS} =0V, F=1.0MHz		4387		pF
C _{oss}	Output Capacitance			228		pF
C _{rss}	Reverse Transfer Capacitance			150		pF
SWITCHINGPARAMETERS						
t _{d(on)}	Turn-on Delay Time	V _{DD} =-50V,I _D =-15A, V _{GS} =-10V, R _G =9.1Ω		10		nS
t _r	Turn-on Rise Time			41		nS
t _{d(off)}	Turn-Off Delay Time			245		nS
t _f	Turn-Off Fall Time			87		nS
Q _g	Total Gate Charge	V _{DS} =-50V,I _D =-15A, V _{GS} =0到-10V		81		nC
Q _{gs}	Gate-Source Charge			18		nC
Q _{gd}	Gate-Drain Charge			14.5		nC
V _{SD}	Diode Forward Voltage	V _{GS} =0V,I _{SD} =-1A			-1.4	V

Electrical Characteristics Diagrams

图 1. 输出特性

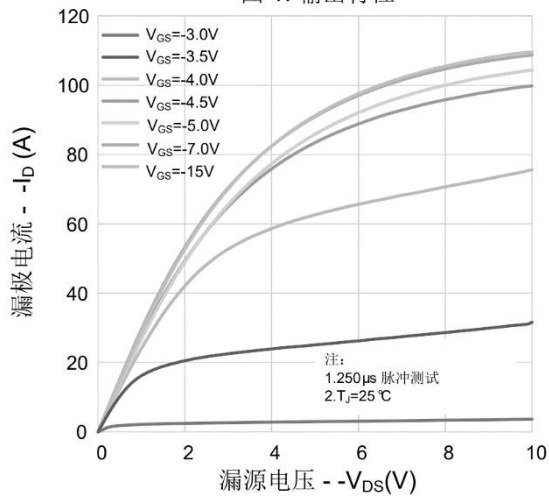


图 2. 传输特性

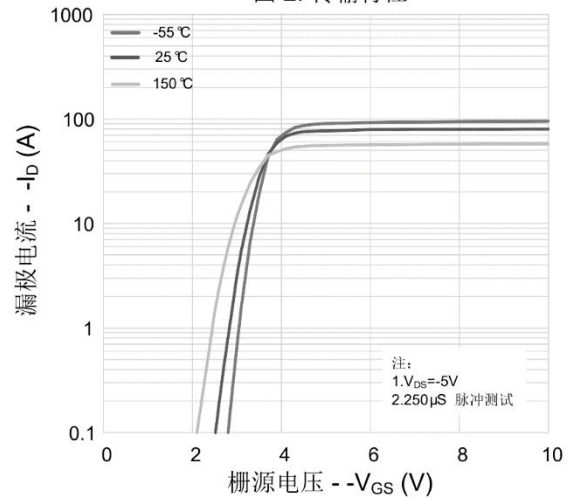


图 3. 导通电阻 vs. 漏极电流

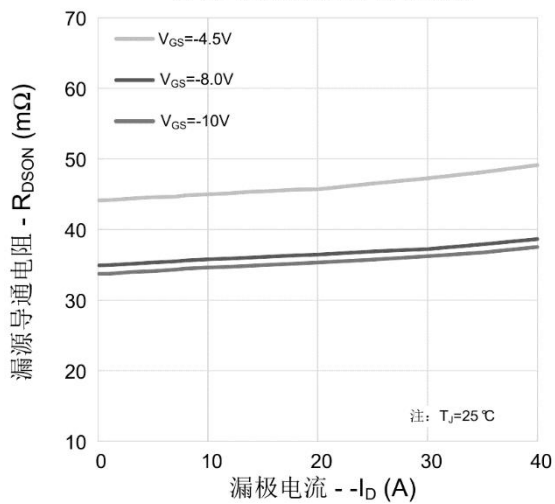


图 4. 导通电阻 vs. 栅源电压

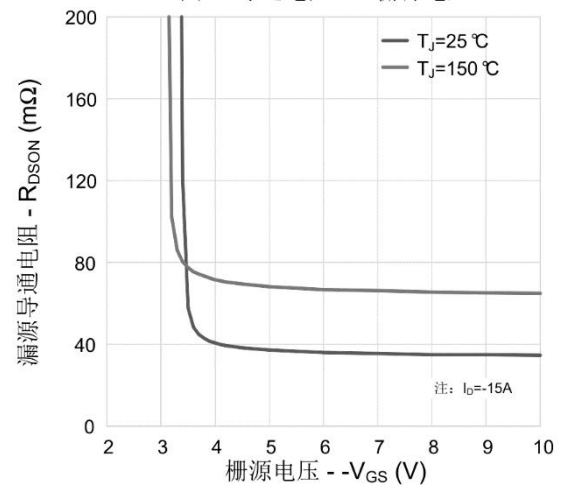


图 5. 开启电压 vs. 温度特性

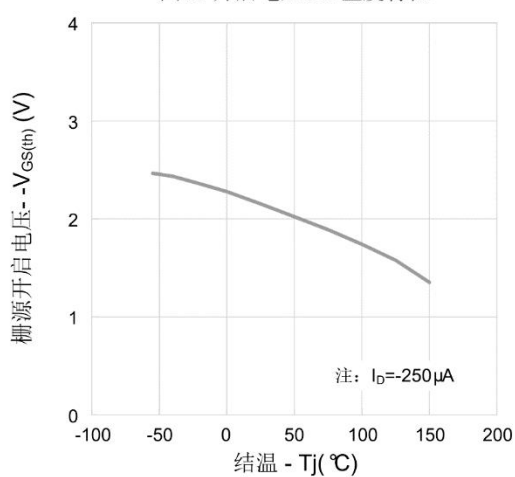


图6. 体二极管正向压降 vs. 源极电流和温度

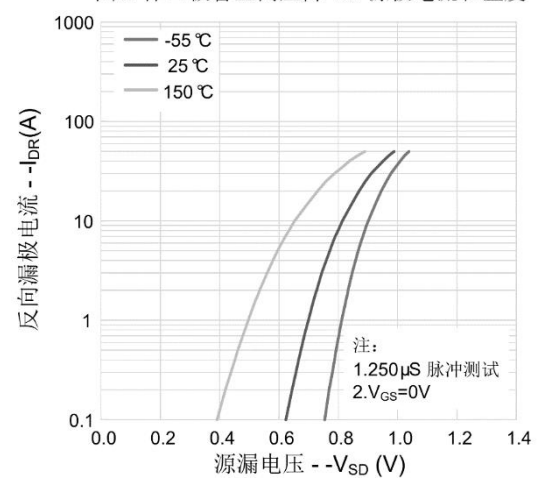


图7. 电容特性

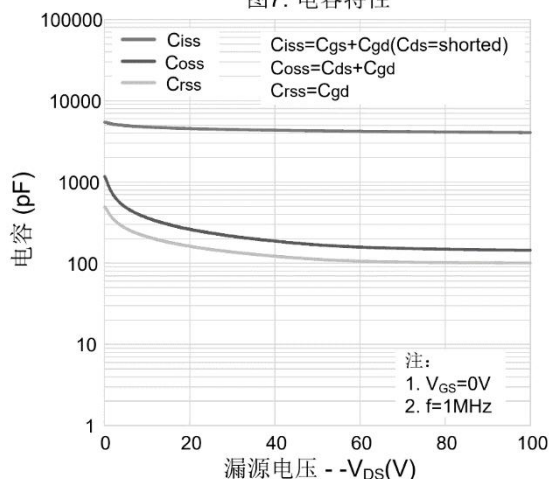


图 8. 电荷量特性

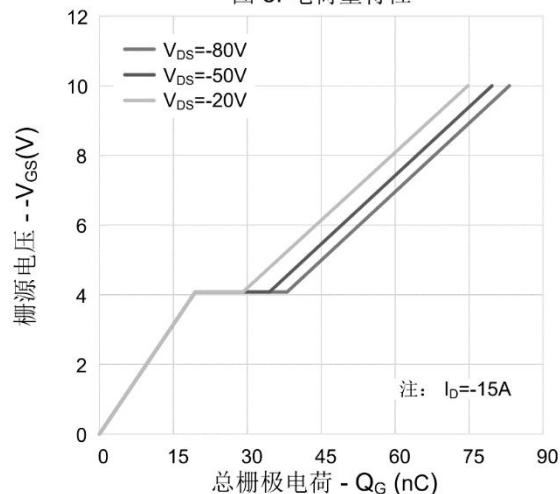


图 9. 击穿电压 vs. 温度特性

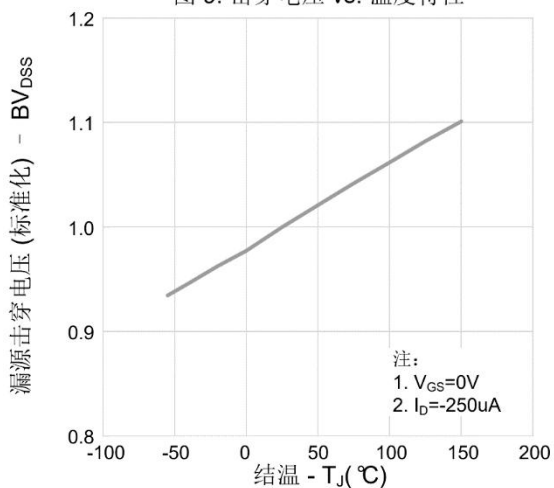


图 10. 导通电阻 vs. 温度特性

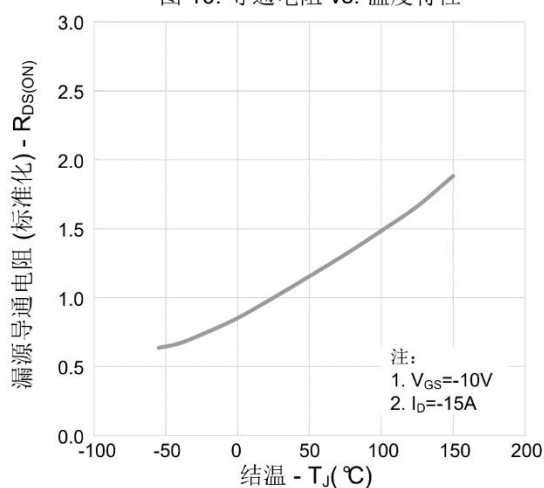


图 11. 最大安全工作区域

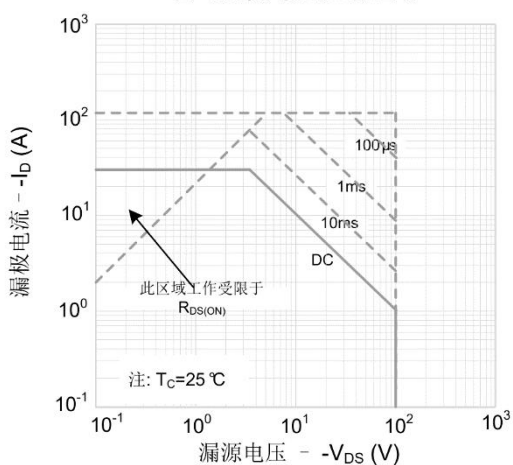
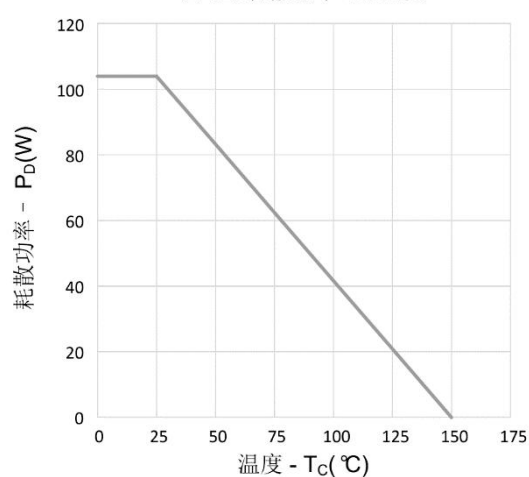
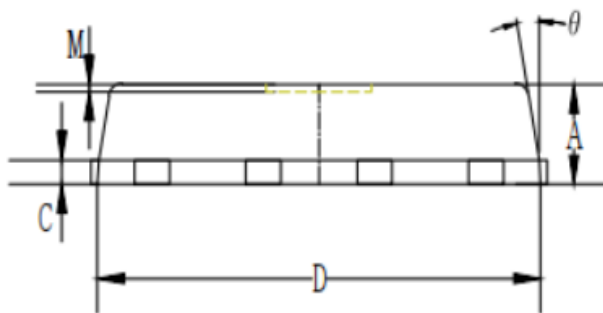
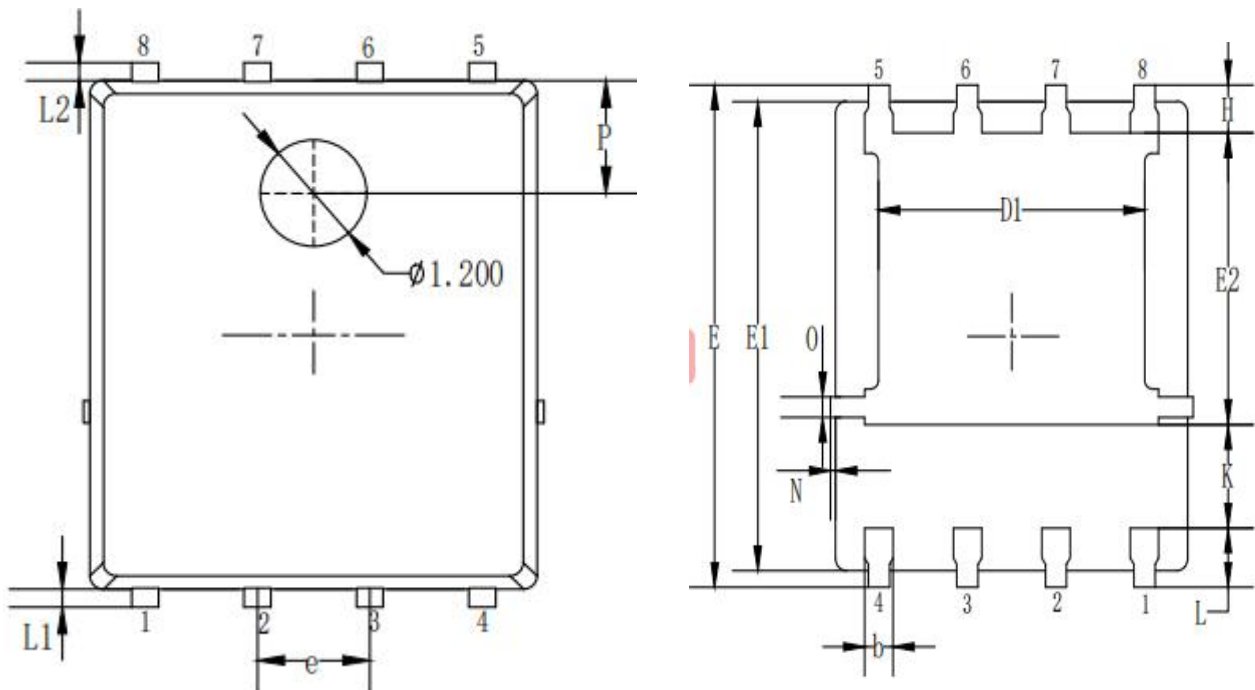


图 12. 耗散功率 vs. 温度



Package Outline Dimensions



Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	0.90	1.05	1.20
b	0.35	0.40	0.50
C	0.20	0.25	0.35
D	4.90	5.05	5.10
D1	3.72	3.82	3.92
E	6.00	6.15	6.25
E1	5.60	5.75	5.90
E2	3.47	3.57	3.67
e	1.27 BSC.		
H	0.48	0.58	0.68
K	1.17	1.27	1.37
L	0.64	0.69	0.75
L1/L2	0.10 ~ 0.20		
θ	8°	10°	12°
M	0.08 REF.		
N	0	-	0.15
O	0.25 REF.		
P	1.28 REF.		

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