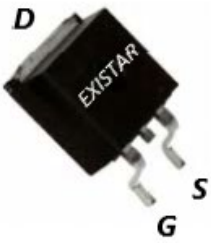
P-Channel 100V MOSFET

E38P100KC

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

TO252

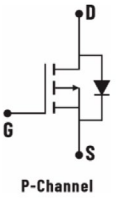


Features

- Trench MOS technology
- Low Rds(on),Low Qg
- Excellent Gate Charge x Rds(ON) Product (FOM)

Applications

- Fast switching



Pb-free
RoHS
COMPLIANT
HALOGEN
FREE

Package and ordering information

Ordering code	Package	Device code
E38P100KC	TO252	---

Absolute Maximum Ratings T_A=25°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°C	I_D	-38	A
	TC=100°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	℃

Thermal Characteristics

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

Electrical Characteristics(TJ=25 ℃ unless otherwise noted)						
Symbol	**Parameter**	**Condition**	**Min**	**Typ**	**Max**	**Unit**
STATICPARAME TERS						
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
DYNAMICPARAMET ERS						
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
SWITCHINGPARAMETER S						
$t_{d(on)}$	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

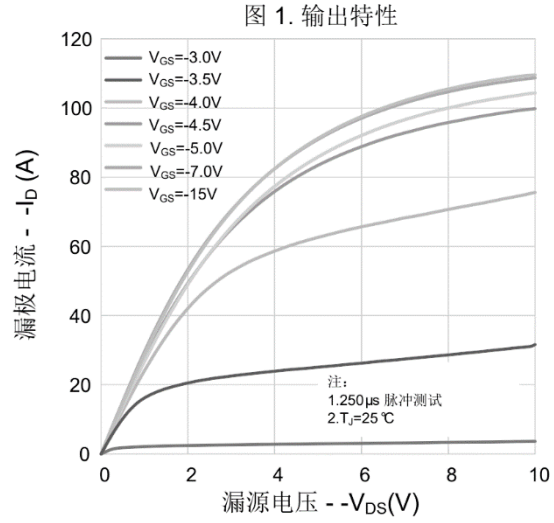


图 2. 传输特性

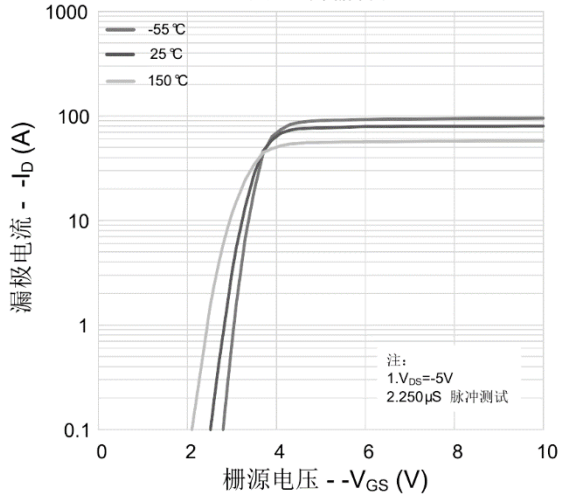


图 3. 导通电阻 vs. 漏极电流

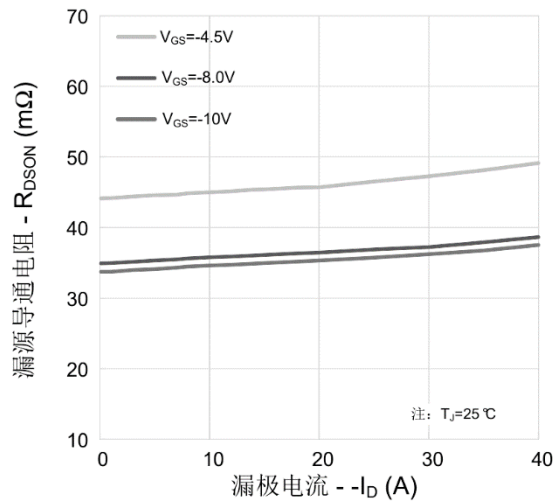


图 4. 导通电阻 vs. 栅源电压

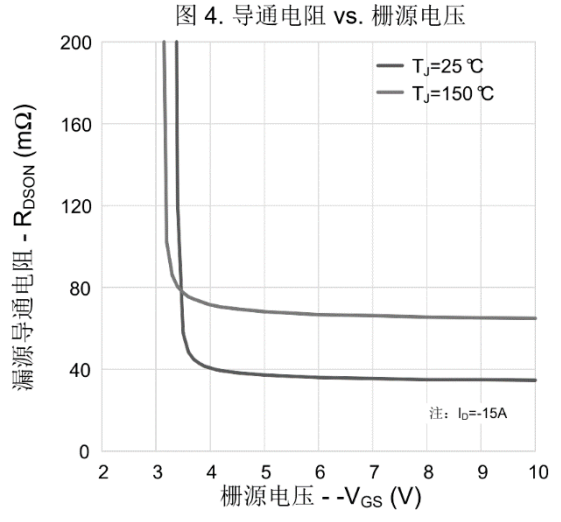


图 5. 开启电压VS.温度特性

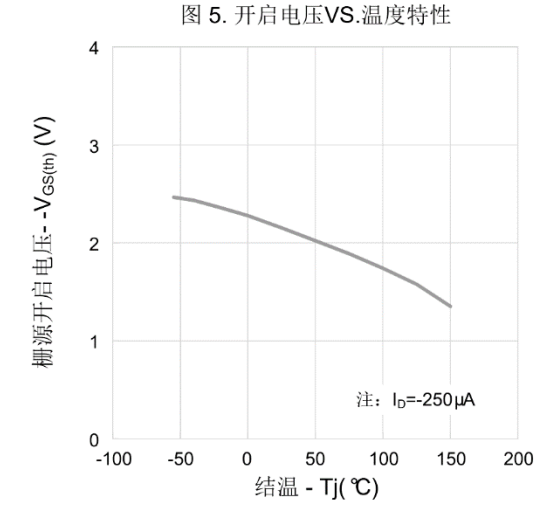


图6. 体二极管正向压降 vs. 源极电流和温度

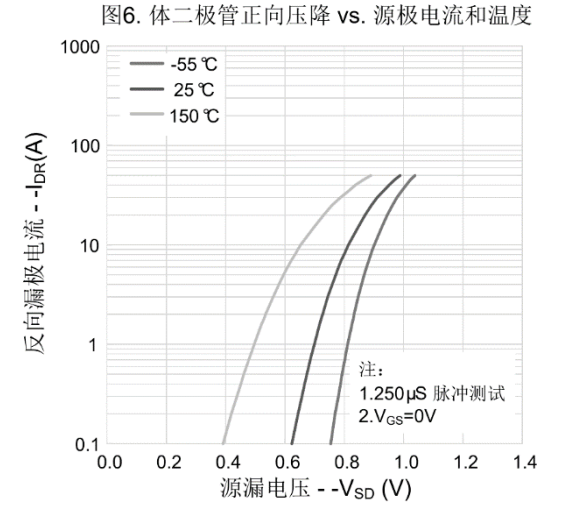


图7. 电容特性

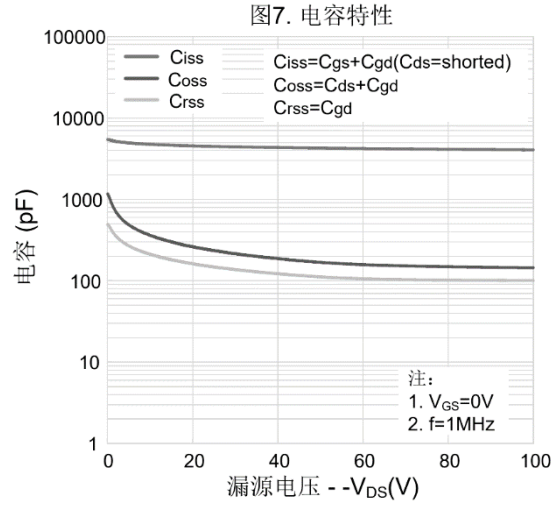


图 8. 电荷量特性

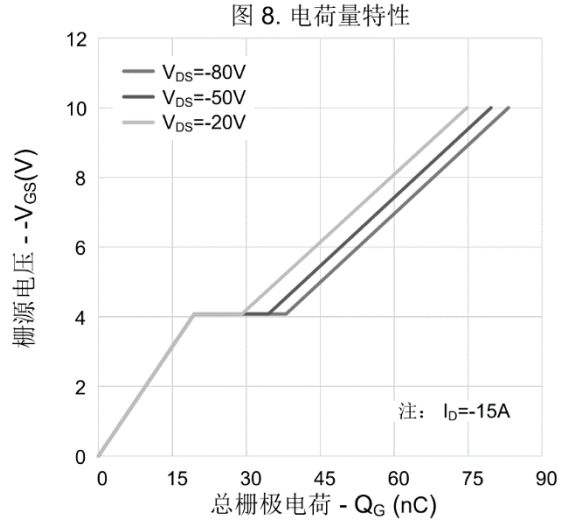


图 9. 击穿电压 vs. 温度特性

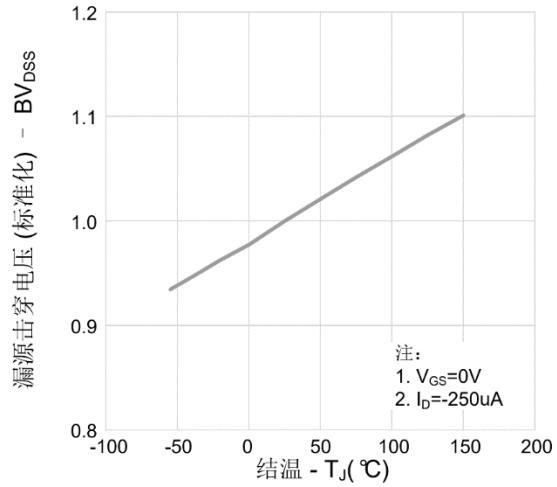


图 10. 导通电阻 vs. 温度特性

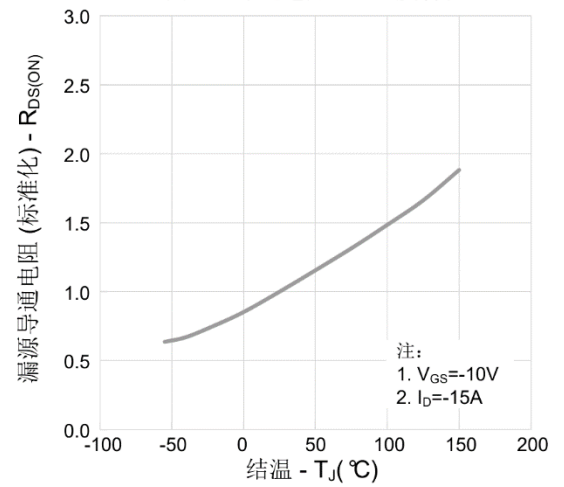


图 11. 最大安全工作区域

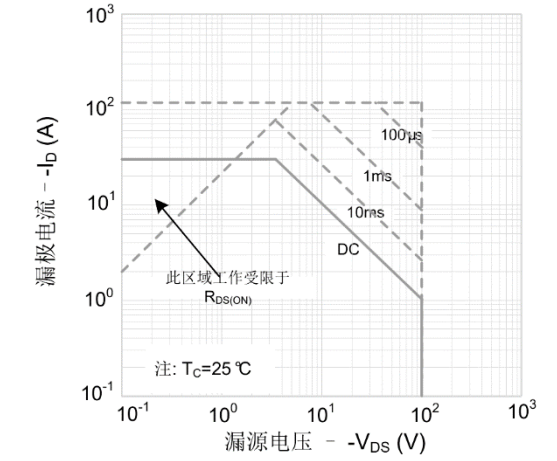
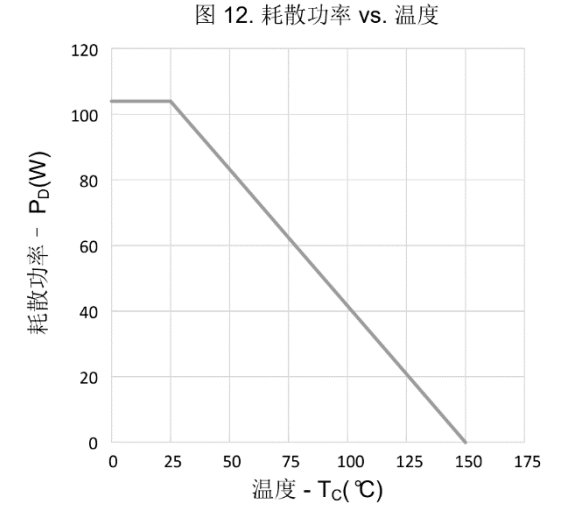
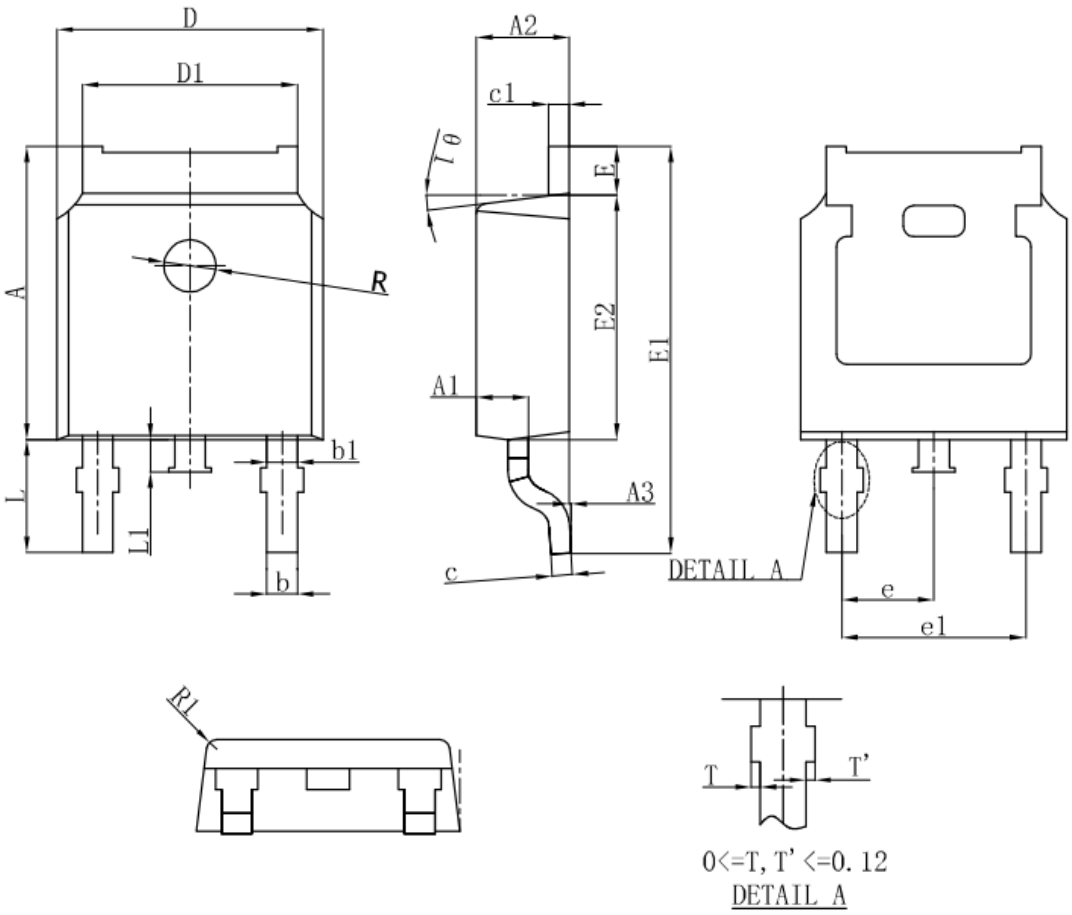


图 12. 耗散功率 vs. 温度



Package Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	7.050	7.100	7.150
A1	0.960	1.010	1.060
A2	2.250	2.300	2.350
A3	0.000	0.050	0.100
b		0.760REF.	
b1		1.000REF.	
c		0.508REF.	
c1		0.508REF.	
D	6.550	6.600	6.650
D1	5.220	5.320	5.420
E	0.950	1.000	1.050
E1	9.700	9.900	10.100
E2	6.050	6.100	6.150
e		2.286BSC	
e1		4.572REF.	
L	2.650	2.800	2.950
L1	0.700	0.800	0.900
θ 1		7° REF.	
R		0.250REF.	

Legal Disclaimer

The information given in this document shall be for illustrative purposes only and shall in no event be regarded as a guarantee of conditions or characteristics. Existar Technologies reserves the right to change any information herein. With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Existar Technologies or its affiliates hereby make no representation or warranty of any kind, expressed or implied, as to any information provided hereunder, including without limitation as to the accuracy, completeness or non-infringement of intellectual property rights of any third party, and they assume no liability for the consequences of use of such information. In addition, any information given in this document is subject to customer's compliance with its obligations stated herein and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Existar Technologies in customer's applications. The information contained herein is exclusively intended for technically trained staff. No license is granted by implication under any patent right, copyright, mask work right, or other intellectual property right. It is customer's sole responsibility to evaluate the suitability of the product for the intended application and the completeness of the product information given herein with respect to such application. In no event shall Existar Technologies or its affiliates be liable to any party for any direct, indirect, special, punitive, incidental or consequential damages of any nature whatsoever, including but not limited to loss of profits and loss of goodwill, whether or not such damages are based on tort or negligence, warranty, breach of contract or any other legal theory.