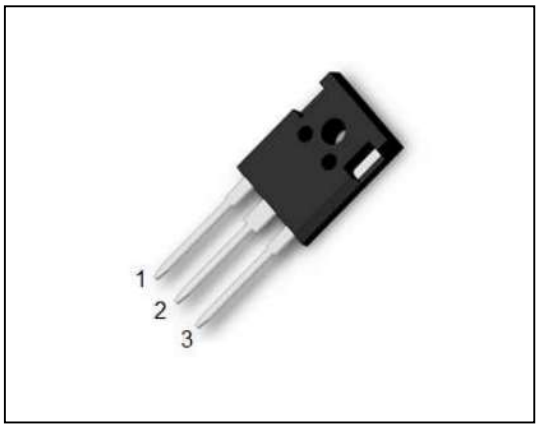
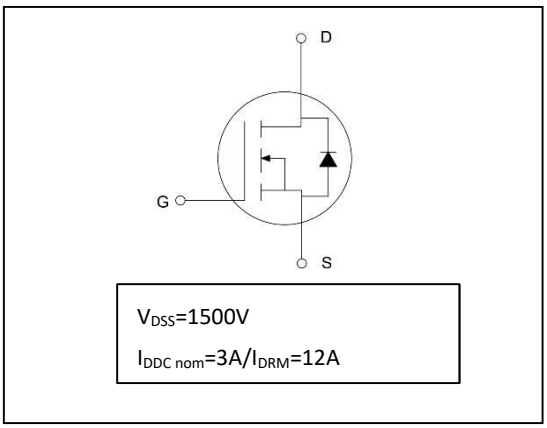
1500V 3A N-Channel MOS Discrete

1500V 3A MOSFET N-沟道 MOS 单管





Features：

- Fast Switching
- Low ON Resistance
- Low Gate Charge Minimize Switching loss
- Fast Recovery Body Diode

产品特性：

- 开关速度快
- 低$R_{DS(ON)}$
- 低门级电荷最小化开关损耗
- 快恢复体二极管

Typical Applications：

- Adaptor
- Charger
- SMPS Standby Power

典型应用：

- 适配器
- 充电器
- 开关电源

MOSFET

Maximum Rated Values / 最大额定值

Item	Symbol	Conditions	Value	Units
漏极－源极电压 Drain-source voltage	V_{DSS}	T_{vj}=25°C	1500	V
漏极电流 Drain Current	I_D		3	A
脉冲漏极电流 Pulsed drain current	I_{DM}	Limited by T_{vjmax}. Maximum duty cycle D=0.75	12	A
功率损耗 Power dissipation	P_D	T_{vj}=25°C	125	W
栅极峰值电压 Maximum gate-source voltage	V_{GSS}		±30	V
单脉冲雪崩耐量 Single Pulse Avalanche Energy	E_{AS}	Pulse width tp limited by Tj,max	130	mJ

Characteristic Values / 特征值

Item	Symbol Cond	Conditions	Min.	Typ.	Max.	Units
漏极-源极击穿电压 Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=250μA, T_{vj}=25°C	1500			
漏极－源极通态电阻 Drain-source on resistance	$R_{DS(on)}$	I_D=1.5A,V_{GS}=10V, T_{vj}=25°C		5.5	8.2	mΩ
栅极阈值电压 Gate threshold voltage	$V_{GS(th)}$	I_C=0.25mA, V_{DS}=V_{GS}, T_{vj}=25°C	2.5		4.5	V
跨导 Transconductance	gfs	V_{DS} = 20 V, I_{DS} = 1.5A, T_{vj}=25°C		5		S
栅极电荷 Gate charge	Q_G Q_{GS} Q_{GD}	V_{GS}=20V,I_D=1.5A,V_{DS}=750V		62 23 19		nC
输入电容 Input capacitance	C_{iss}	f=1MHz,T_{vj}=25°C,V_{DS}=25V, V_{GS}=0V		1740		pF
输出电容 Output capacitance	C_{oss}	f=1MHz,T_{vj}=25°C,V_{DS}=25V, V_{GS}=0V		102		pF
反向传输电容 Reverse transfer capacitance	C_{rss}	f=1MHz,T_{vj}=25°C,V_{DS}=25V, V_{GS}=0V		13		pF
漏极电流 Drain current	I_{DSS}	V_{DS}=1500V, V_{GS}=0V, T_{vj}=25°C			10	μA
栅极-源极漏电流 Gate-source leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±30V, T_{vj}=25°C	-100		100	nA
开通延迟时间(电感负载) Turn-on delay time, inductive load	$t_{d(on)}$	I_D=3A, V_{DD}=750V V_{GS}=10V, R_G=5Ω, T_{vj}=25°C		33		ns
上升时间(电感负载) Rise time, inductive load	t_r			16		ns
关断延迟时间(电感负载) Turn-off delay time, inductive load	$t_{d(off)}$			58		ns
下降时间(电感负载) Fall time, inductive load	t_f			28		ns
结－外壳热阻 Thermal resistance, junction to case	R_{thJC}			1		K/W
结－环境热阻 Thermal resistance, junction to ambient	R_{thJA}			40		K/W
工作温度 Temperature under switching conditions	T_{vjop}		-40		150	°C

Body diode /体二极管

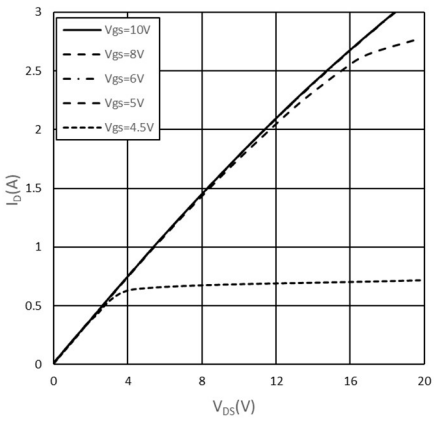
Maximum Rated Values /最大额定值

Item	Symbol	Conditions	Min.	Typ.	Max.	Units
连续反向漏极电流 Continuous reverse drain current	I_{SDC}	V_{GS} = 0 V, T_C = 25℃			3	A
正向重复峰值电流 Peak repetitive forward current	I_{SM}	V_{GS} = 0 V, Pulse width t_p limited by T_{vjmax}			12	A

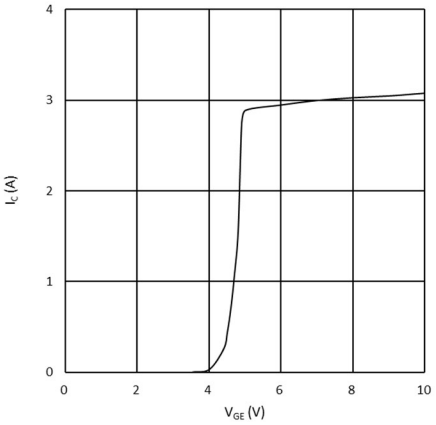
Characteristic Values / 特征值

Item	Symbol	Conditions		Min.	Typ.	Max.	Units
正向电压 Forward voltage	V_{SD}	I_{SD}=3A, V_{GS}=0V	T_{vj}=25°C			1.5	V
反向恢复时间 Reverse Recovery Time	T_{rr}	I_{SD}=3A dI_F/dt=100A/us,V_{GS}=0V	T_J=25℃		225		ns
反向恢复电荷 Reverse Recovery Charge	Q_{rr}				1.1		μC
工作温度 Temperature under switching conditions	T_{vjop}			-40		150	°C

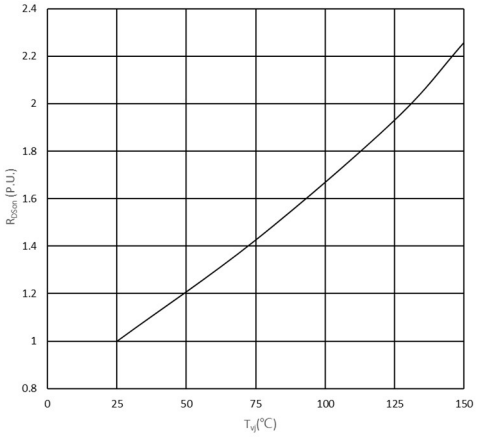
输出特性 MOSFET
Output characteristic MOSFET
$I_{DS}=f(V_{DS})$, Tvj=25°C



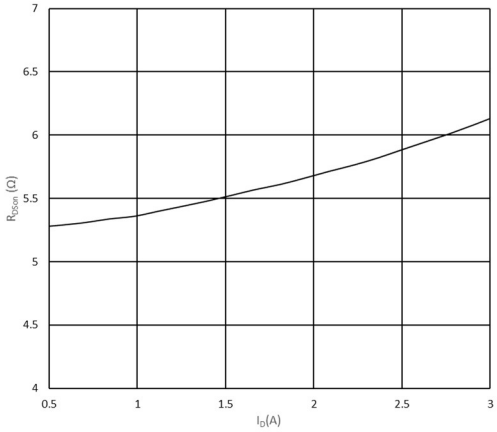
传输特性 MOSFET
Transfer characteristic MOSFET
$I_{DS}=f(V_{GS})$, V_{DS}=20V , T_{vj}=25℃



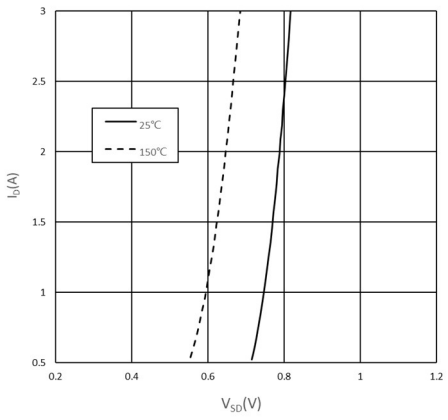
归一化漏源通态电阻
Normalized Drain-source on resistance
$R_{DSon}(P.U.)=f(T_{vj})$
I_{DS}=1.3A V_{GS}=10V



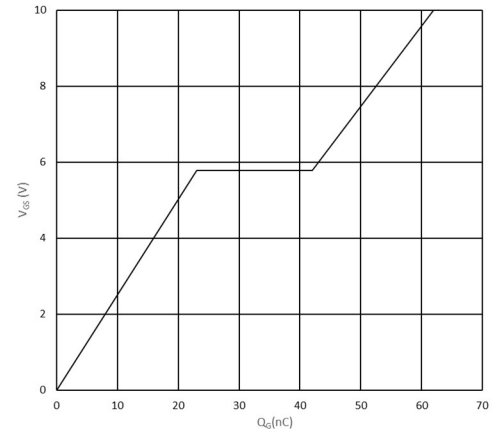
漏源通态电阻
Normalized Drain-source on resistance
$R_{DSon}=f(I_{DS})$ T_{vj}=25℃
V_{GS}=10V



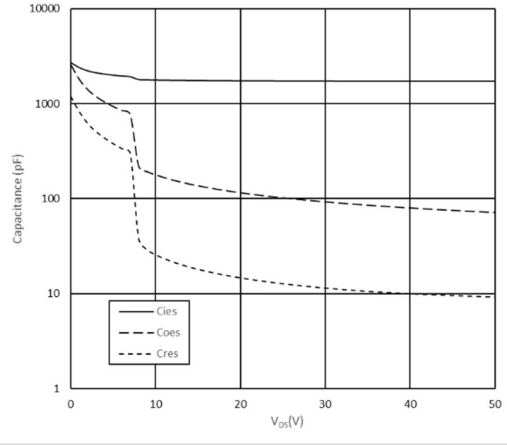
正向偏压特性，二极管
Forward characteristic of Diode
$I_{DS}=f(V_{DS})$



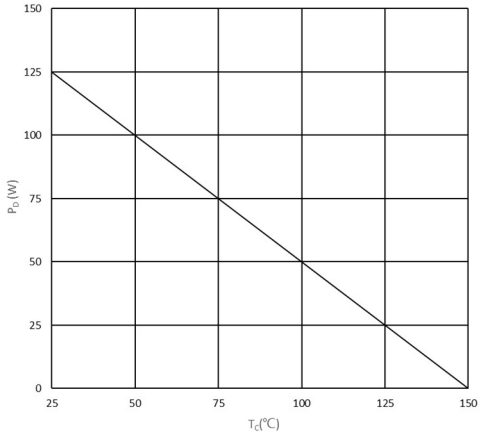
栅极电荷特性 MOSFET
Gate charge characteristic MOSFET
$V_{GS}=f(Q_G)$
V_{DS}=750V, I_{DS}=3A, T_{vj}=25°C



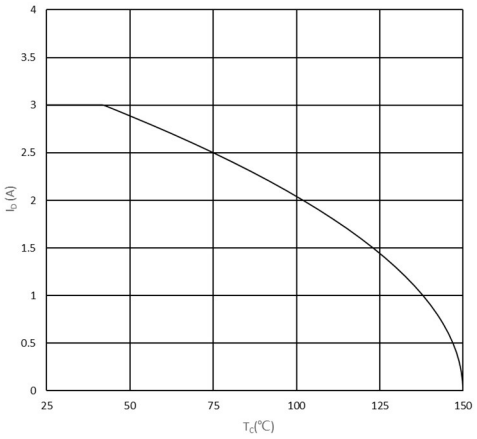
电容特性 MOSFET
Capacity characteristic MOSFET
C=f(V_{DS})
V_{GS}=0V, T_{vj}=25°C , f=1MHz



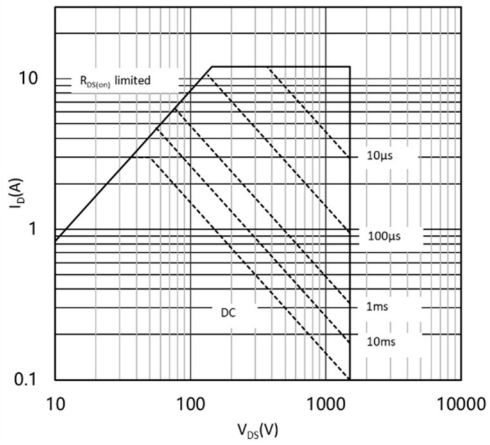
耗散功率
Maximum Power Dissipation
P_D=f(T_C)



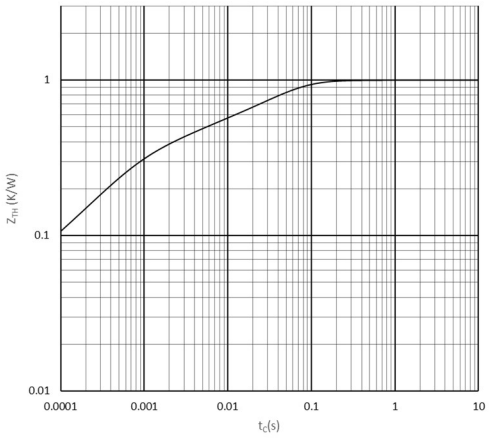
连续漏极电流
Maximum Drain Current
I_D=f(T_C)



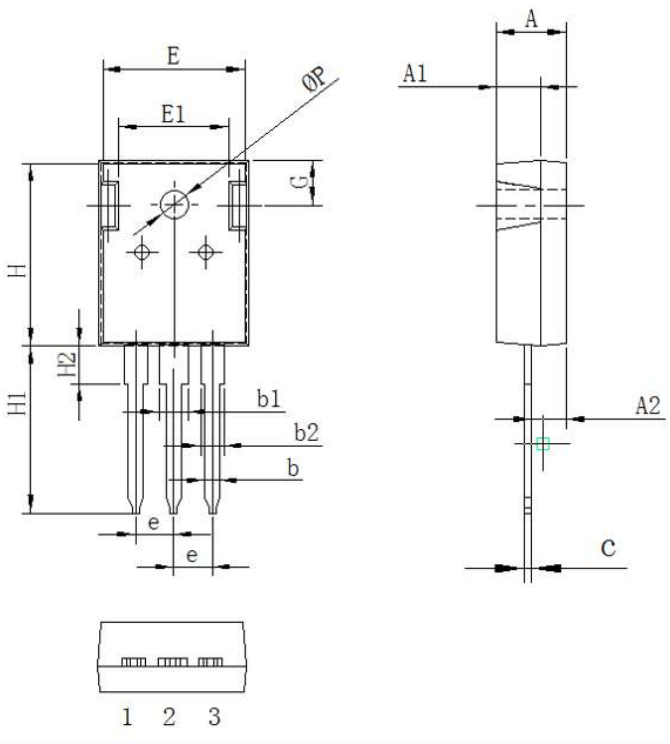
正向安全工作区
Forward Biased Safe Operating Area(FBSOA)



瞬态热阻抗 MOSFET
Transient thermal impedance MOSFET
Z_{thJC}=f (t)



Package outlines / 封装尺寸



Symbol	单位 mm		
	Min	**Nom**	Max
A	4.8	5.00	5.20
A1	3.3	3.5	3.7
A2	2.20	2.40	2.60
b	1.00	1.2	1.40
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c	0.50	0.60	0.70
e	5.25	5.45	5.65
E	15.2	15.7	16.2
E1	10.2	10.7	11.2
H	20.8	21	21.2
H1	19.5	20.0	20.5
H2	4.00	4.20	4.40
G	5.60	5.80	600
ΦP	3.50	3.70	3.90