

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
800V	4.4Ω@10V	2A

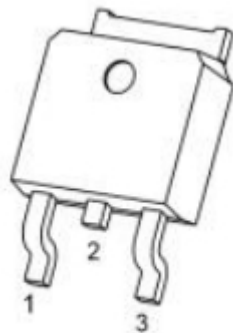
Feature

- Fast Switching
- Improved dv/dt capability
- 100% Single Pulse avalanche energy Test

Application

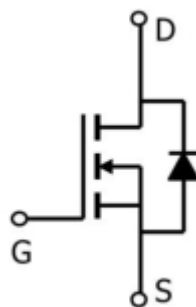
- DC Motor Control and Class D Amplifier
- Uninterruptible Power Supply (UPS)

Package

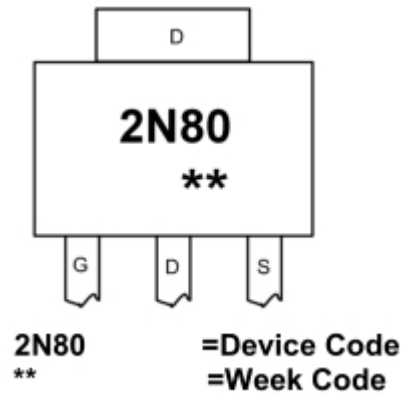


TO-252(G:1 D:2 S:3)

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	800	V
Gate-Source Voltage	V _{GS}	±30	V
Continuous Drain Current ¹ (T _C =25°C)	I _D	2	A
Pulsed Drain Current ²	I _{DM}	8	A
Single Pulse Avalanche Energy ³	E _{AS}	146	mJ
Total Power Dissipation(T _C =25°C)	P _D	87	W
Thermal Resistance Junction-Case ¹	R _{θJC}	1.43	°C/ W
Storage Temperature Range	T _{STG}	-55~ +150	°C
Operating Junction Temperature Range	T _J	-55~ +150	°C

Electrical characteristics

($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	800			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 800V, V_{GS} = 0V$ $T_J = 25^{\circ}C$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 100	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	3	4	5	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1A$		4.4	5.5	Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$		380		pF
Output Capacitance	C_{oss}			40		
Reverse Transfer Capacitance	C_{rss}			1.6		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 640V, V_{GS} = 10V,$ $I_D = 2A$		9.6		nC
Gate-Source Charge	Q_{gS}			2.3		
Gate-Drain Charge	Q_{gd}			4.6		
Turn-On Delay Time	$T_{d(on)}$	$V_{DD} = 400V, V_{GS} = 10V,$ $R_G = 25\Omega, I_D = 2A$		12.6		nS
Rise Time	T_r			23		
Turn-Off Delay Time	$T_{d(off)}$			26		
Fall Time	T_f			26.6		

Notes:

- 1.The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- 3.The EAS data shows Max. rating . The test condition is $R_G = 25\Omega$, $L = 30\text{mH}$, $V_{DD} = 100V$

Typical Characteristics

图1. 输出特性

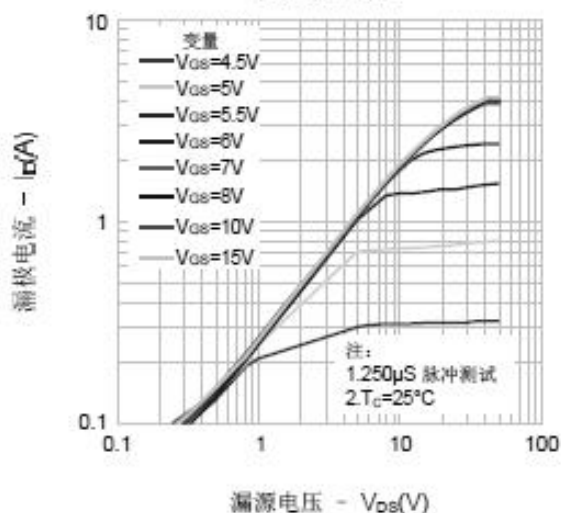


图2. 传输特性

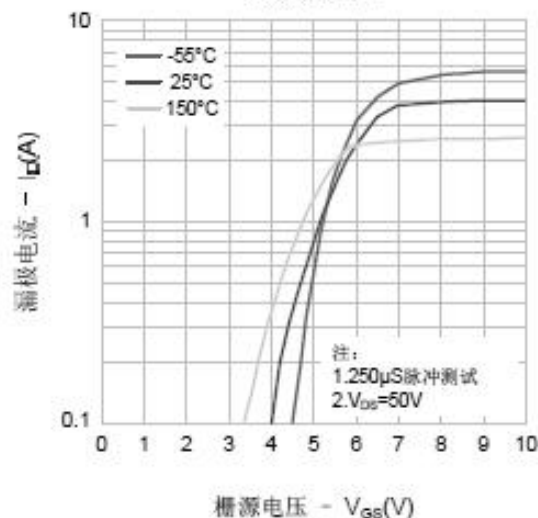


图3. 导通电阻vs.漏极电流

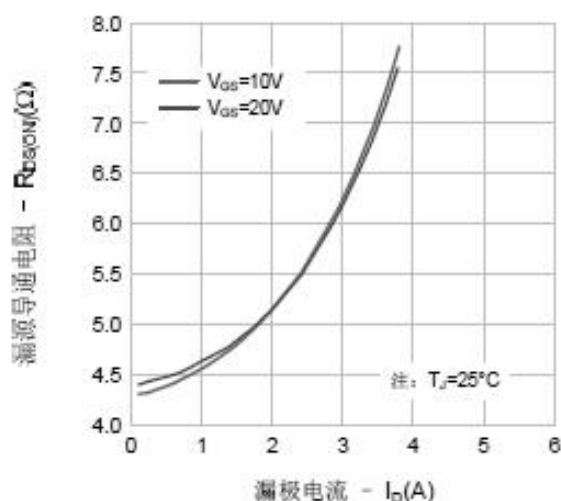


图4. 体二极管正向压降vs. 源极电流、温度

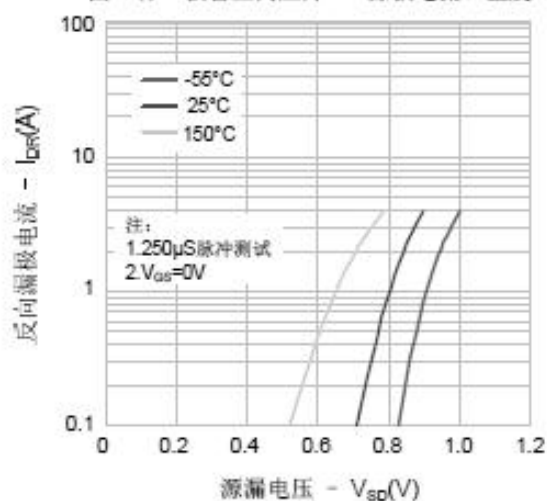


图5. 电容特性

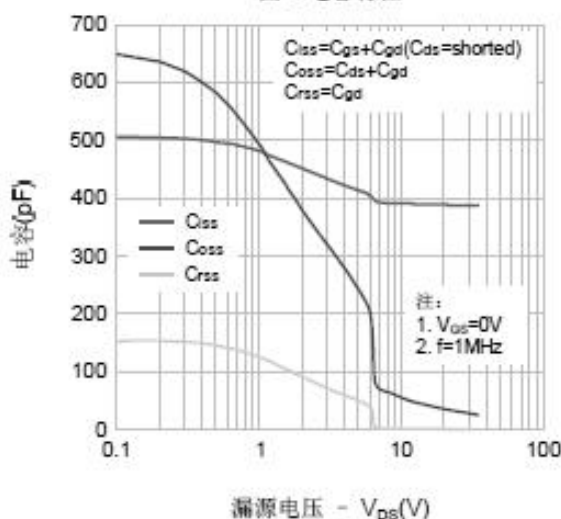


图6. 电荷量特性

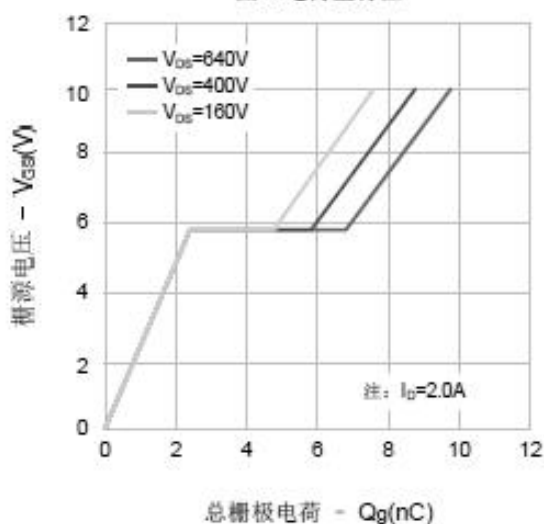


图7. 击穿电压vs.温度特性

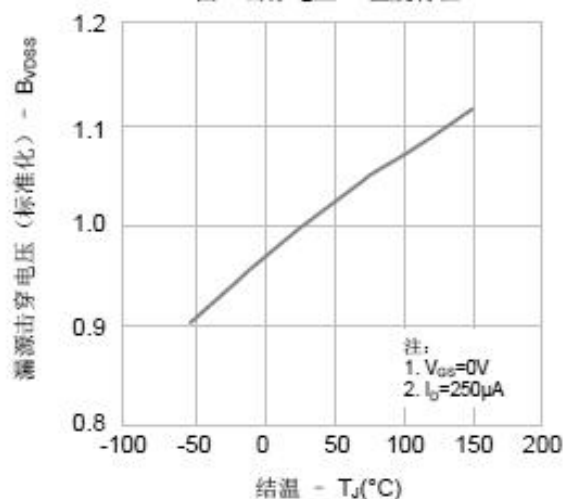


图8. 导通电阻vs.温度特性

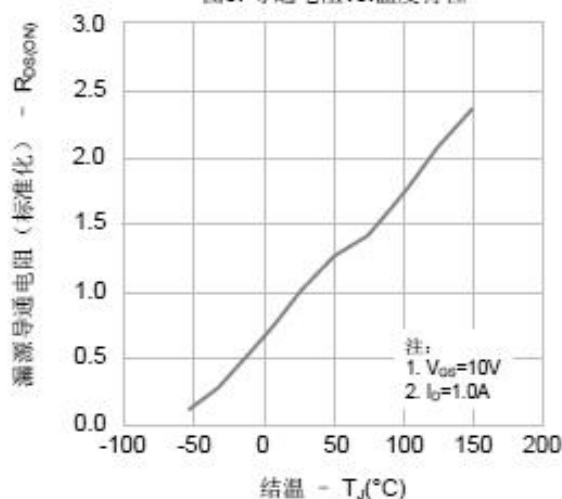


图9-1. 最大安全工作区域(SVF2N80F)

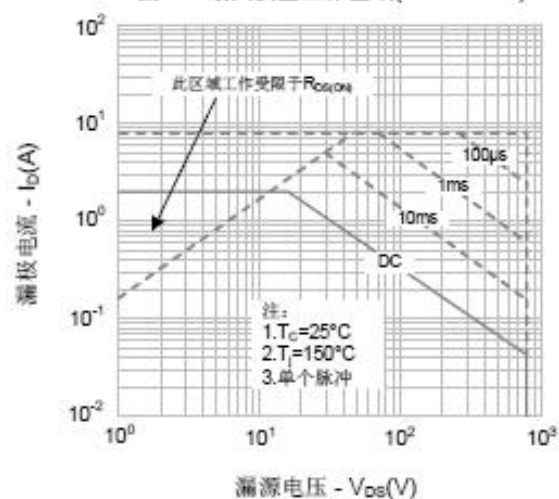


图9-2. 最大安全工作区域(SVF2N80D/M)

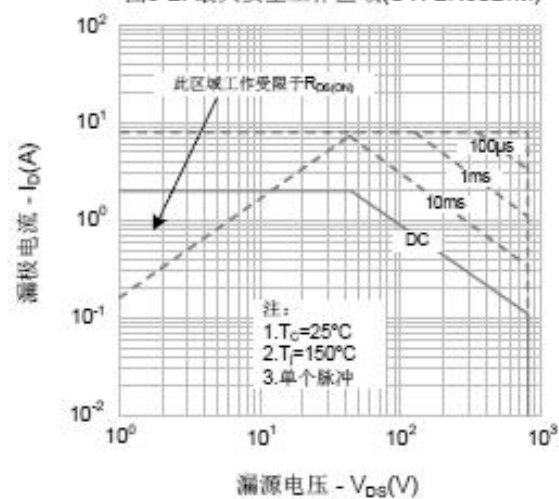


图9-3. 最大安全工作区域(SVF2N80NF)

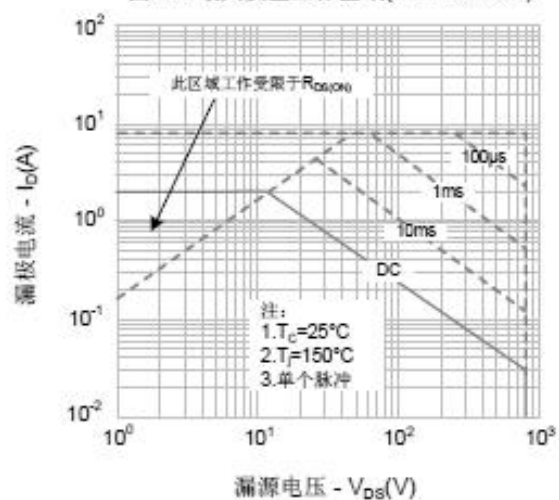
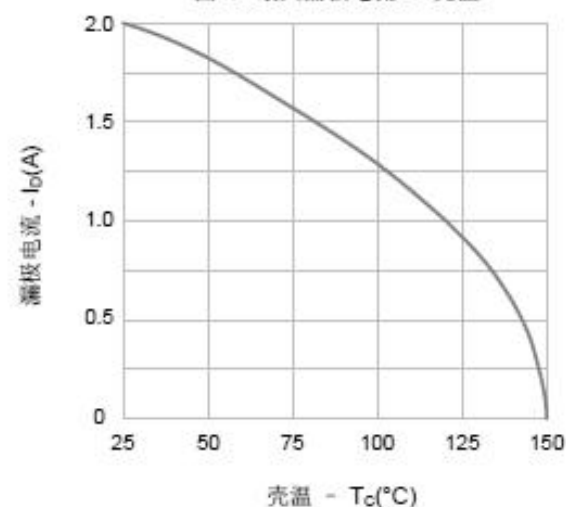
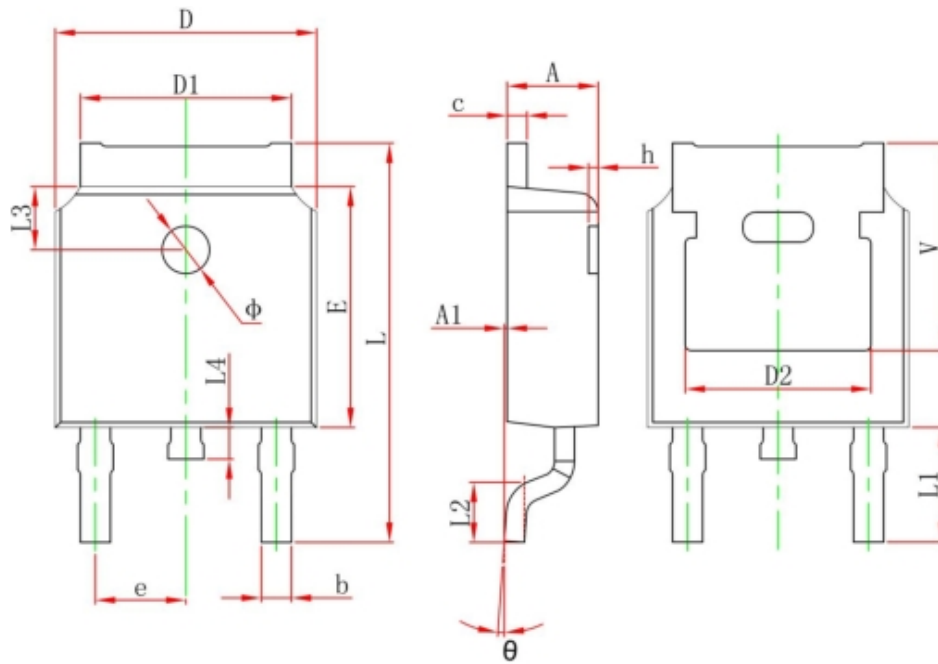


图10. 最大漏极电流vs. 壳温



OT-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	