

描述 / Descriptions

SOT-23 塑封封装 N 沟道 MOS 场效应管。
N- CHANNEL MOSFET in a SOT-23 Plastic Package.

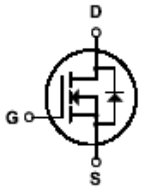
特征 / Features

芯片采用超高密度圆胞设计技术， $R_{DS(ON)}$ 导通电阻小，SOT-23 封装。无卤产品。
Super high dense cell design for low $R_{DS(ON)}$,SOT-23 package. HF product.

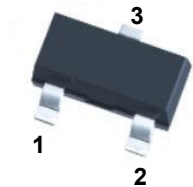
用途 / Applications

电池管理，高速开关，低功率 DC-DC 转换。
Battery management,High speed switch,low power DC to DC converter.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : G PIN 2 : S PIN 3 : D

印章代码 / Marking

Marking	H310
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极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current – Continuous	I_D	3.0	A
Pulsed Drain Current	I_{DM}	15	A
Power Dissipation	P_D	0.9	W
Storage Temperature Range	T_{stg}	-55~150	°C
Maximum Junction-to-Ambient	R_{JA}	55	°C/W
Maximum Junction-to-Ambient			
Maximum Junction-to-Lead	Steady-State	R_{JL}	

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0$ $I_D=10\mu A$	60	68		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=60V$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=10V$ $I_D=3A$		84	90	m Ω
	$R_{DS(on)2}$	$V_{GS}=4.5V$ $I_D=3A$		94	110	m Ω
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_D=1A$		0.75	1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=50\mu A$	1.0	1.8	3.0	V
Maximum Body-Diode Continuous Current	I_S				3	A

电性能参数 / Electrical Characteristics(Ta=25°C)

Input Capacitance	Ciss	VGS=0V, VDS=25V f=1MHz		415		pF
Output Capacitance	Coss			37		
Reverse Transfer Capacitance	Crss			25		
Gate resistance	Rg	VGS=0V, VDS=0V f=1MHz		3.4		Ω
Total Gate Charge	Qg(10V)	VGS=10V, VDS=30V ID=4.2A		10	12	nC
Total Gate Charge	Qg(4.5V)			5	6	
Gate Source Charge	Qgs			2		
Gate Drain Charge	Qgd			3		
Turn-On Delay Time	t _{d(on)}	VGS=10V, VDS=30V RL=7Ω, RGEN=3Ω			7	ns
Turn-On Rise Time	t _r				4	
Turn-Off Delay Time	t _{d(off)}				20	
Turn-Off Fall Time	t _f				3	

电参数曲线图 / Electrical Characteristic Curve

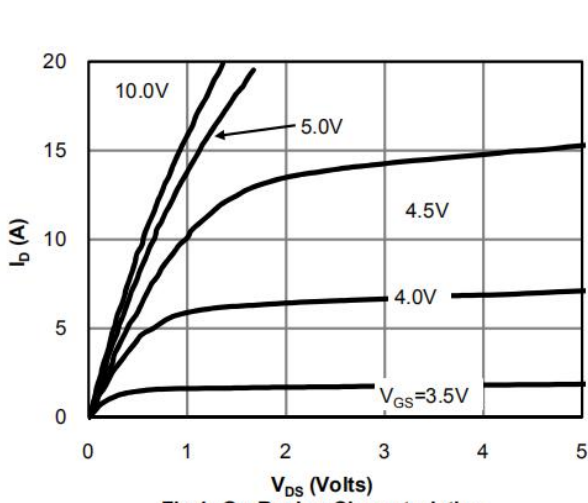


Fig 1: On-Region Characteristics

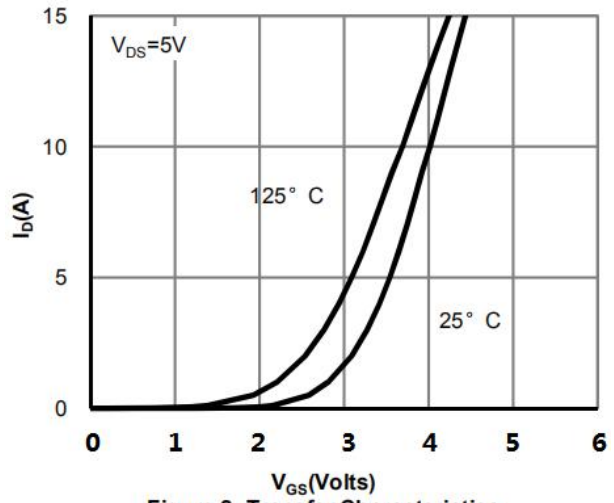


Figure 2: Transfer Characteristics

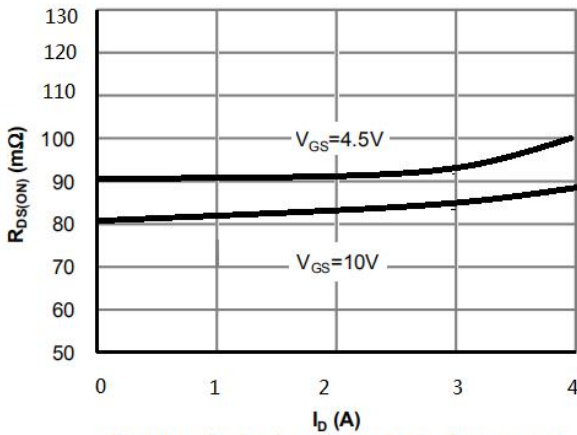


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

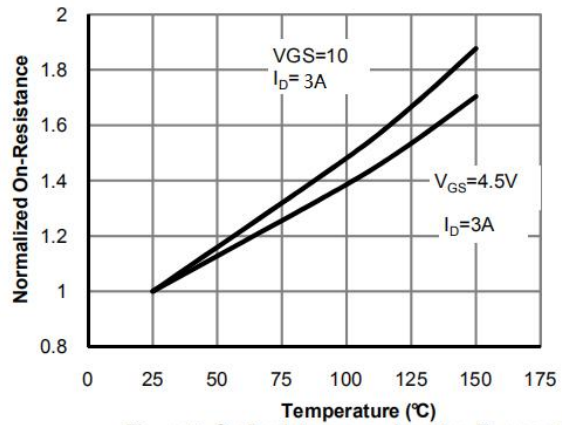


Figure 4: On-Resistance vs. Junction Temperature

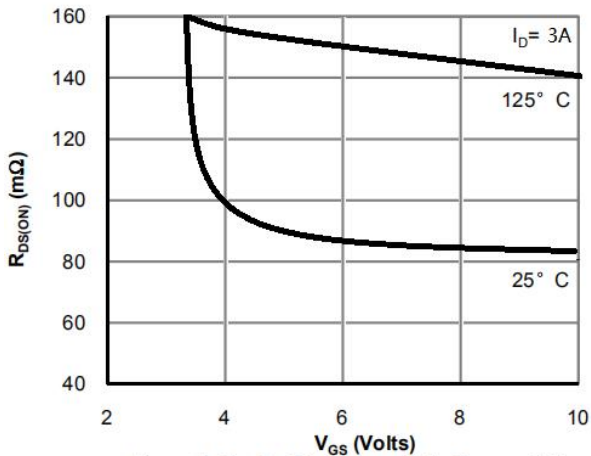


Figure 5: On-Resistance vs. Gate-Source Voltage

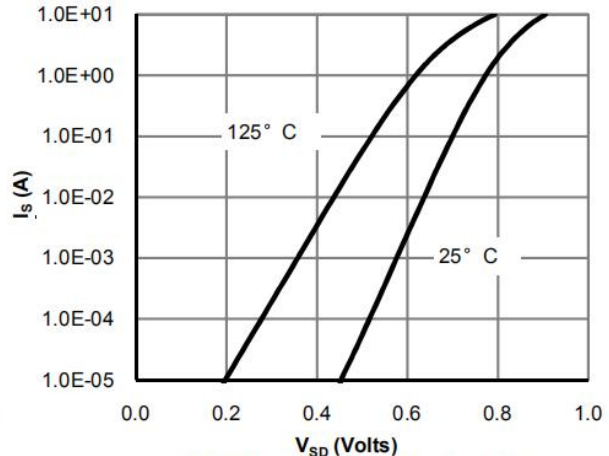


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

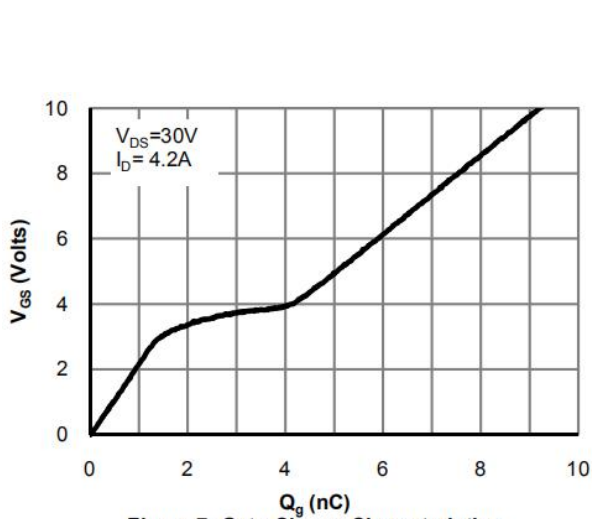


Figure 7: Gate-Charge Characteristics

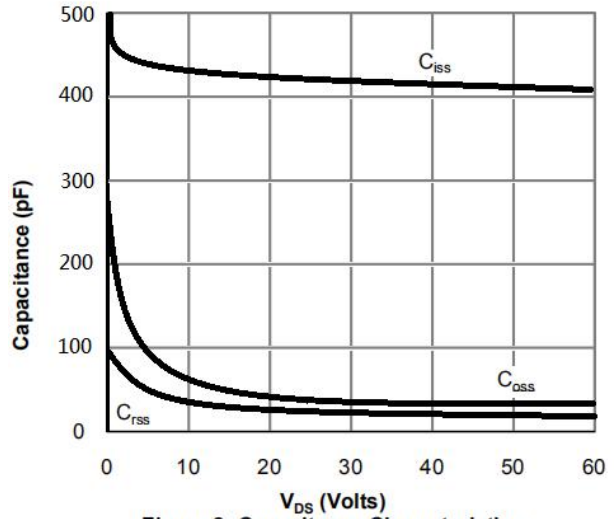


Figure 8: Capacitance Characteristics

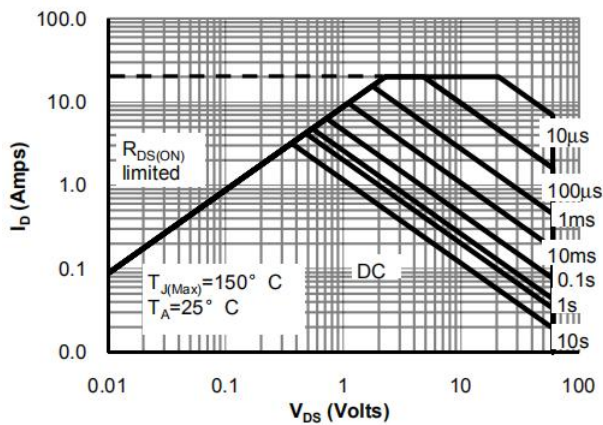


Figure 9: Maximum Forward Biased Safe Operating Area

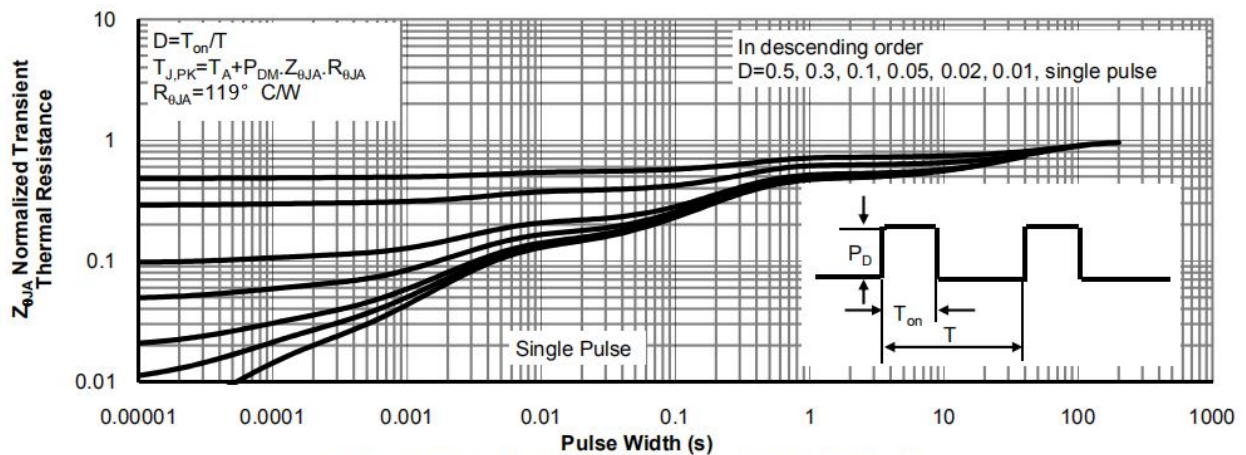
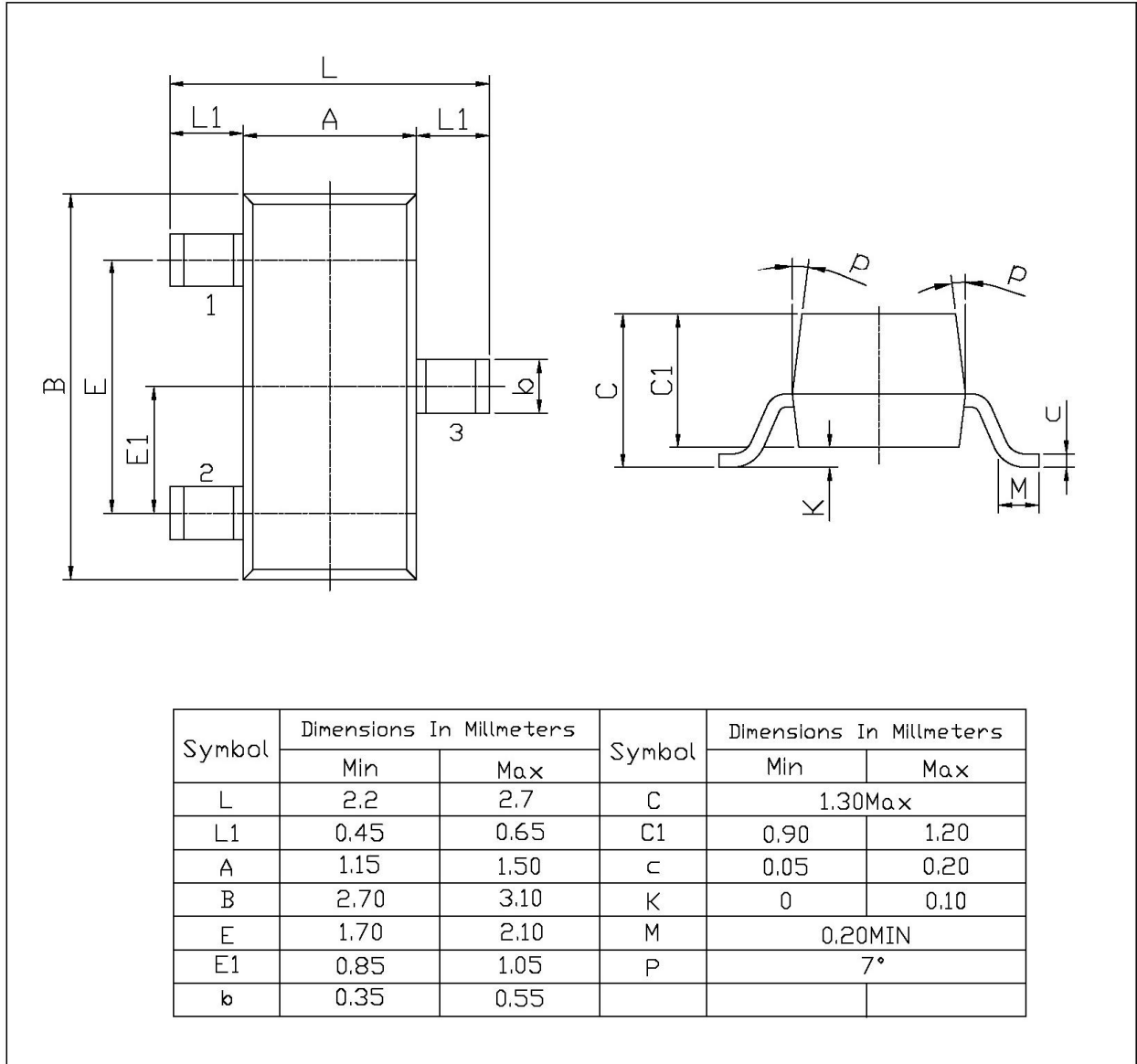


Figure 10 Normalized Maximum Transient Thermal Impedance

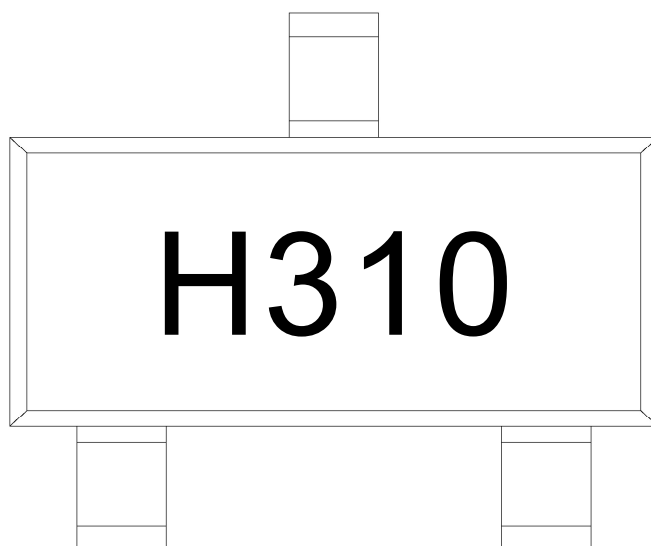
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



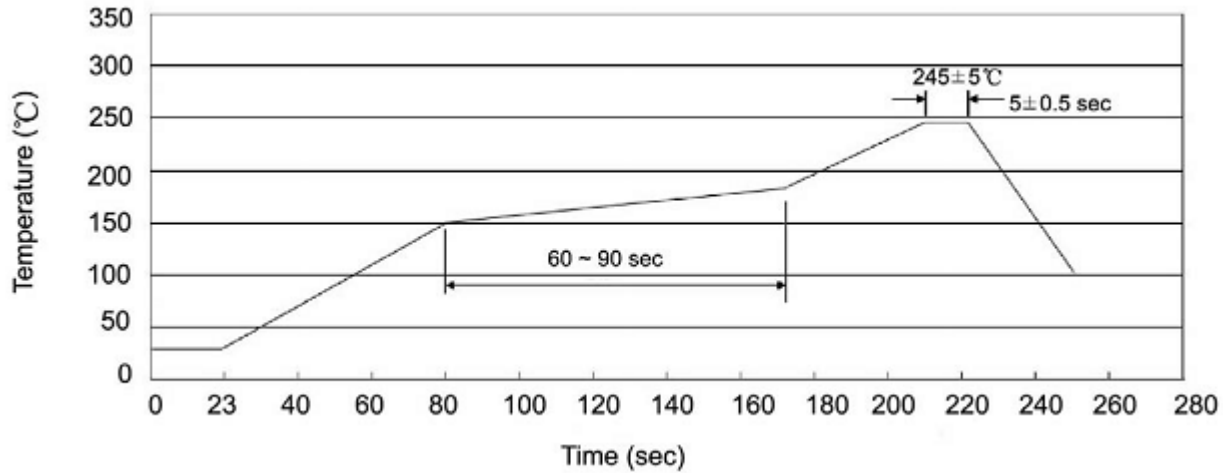
说明：

H: 为公司代码
310: 为型号代码

Note:

H: Company Code.
310 : Product Type Code

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices