

描述 / Descriptions

SOT-23 塑封封装 N 沟道场效应管。

N- CHANNEL MOSFET in a SOT-23 Plastic Package.

特征 / Features

$V_{DS} (V) = 30V$

$I_D = 4 A$

$R_{DS(ON)} < 52m\Omega (V_{GS} = 10V)$

$R_{DS(ON)} < 65m\Omega (V_{GS} = 4.5V)$

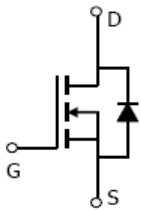
$R_{DS(ON)} < 85m\Omega (V_{GS} = 2.5V)$

无卤产品。HF Product.

用途 / Applications

适用于作负载开关或脉宽调制应用。

This device is suitable for use as a load switch or in PWM applications.

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

B2H

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_{DS}	30	V	
Drain Current – Continuous	I_D	4	A	
Drain Current- Continuous	$I_D(T_a=70^\circ\text{C})$	3.2	A	
Pulsed Drain Current	I_{DM}	15	A	
Gate-Source Voltage	V_{GS}	± 12	V	
Total Power Dissipation	P_D	1.4	W	
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	0.9	W	
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$	
Maximum Junction-to-Ambient	$t \leq 10\text{s}$	73	$^\circ\text{C/W}$	
Maximum Junction-to-Ambient	Steady-State			103
Maximum Junction-to-Lead	Steady-State			66

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	BV_{DSS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	30	32		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24\text{V}$ $V_{GS}=0\text{V}$			1	μA
		$V_{DS}=24\text{V}$ $V_{GS}=0\text{V}$ $T_J=55^\circ\text{C}$			5	μA
Gate-Body Leakage.	I_{GSS}	$V_{GS}=\pm 12\text{V}$ $V_{DS}=0\text{V}$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	0.5	0.85	1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=4\text{A}$		44	52	m Ω
	$R_{DS(on)}$	$V_{GS}=4.5\text{V}$ $I_D=3\text{A}$		47	65	
	$R_{DS(on)}$	$V_{GS}=2.5\text{V}$ $I_D=2\text{A}$		63	85	
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$ $I_D=3.6\text{A}$		14		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=1\text{A}$		0.79	1	V

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
Gate Resistance	R_g	$V_{GS} = 0V$ $f = 1.0MHz$		2.8		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		338		pF
Output Capacitance	C_{oss}			125		
Reverse Transfer Capacitance	C_{rss}			22		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=3.75\Omega$ $V_{DS}=15V$ $R_{GEN}=3\Omega$		3.5		ns
Turn-On Rise Time	t_r			1.5		
Turn-Off Delay Time	$t_{d(off)}$			17.5		
Turn-Off Fall Time	t_f			2.5		
Total Gate Charge	$Q_g(10V)$	$V_{DS}=15V$ $I_D=4A$ $V_{GS}=10V$		10		nC
Total Gate Charge	$Q_g(4.5V)$			4.7		
Gate-Source Charge	Q_{gs}			0.95		
Gate-Drain Charge	Q_{gd}			1.6		

电参数曲线图 / Electrical Characteristic Curve

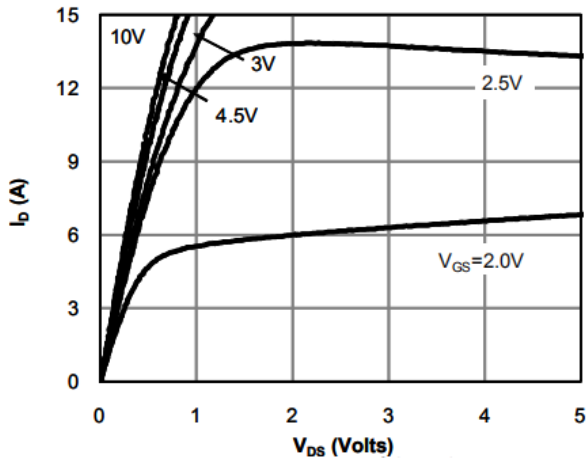


Fig 1: On-Region Characteristics

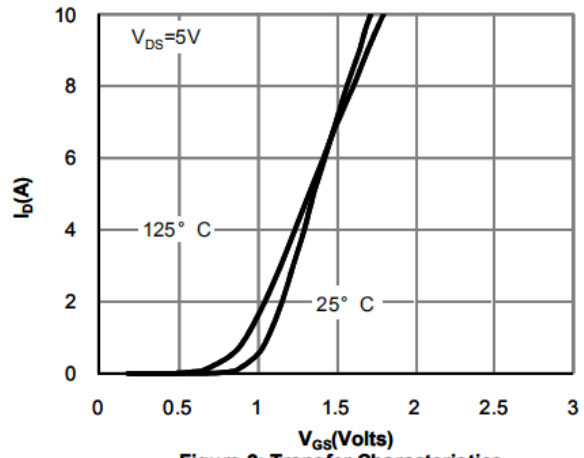


Figure 2: Transfer Characteristics

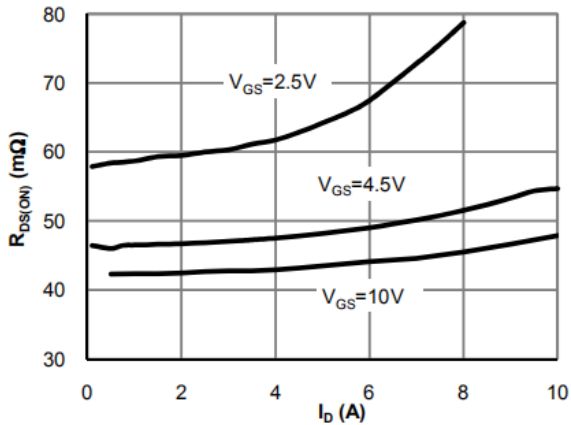


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

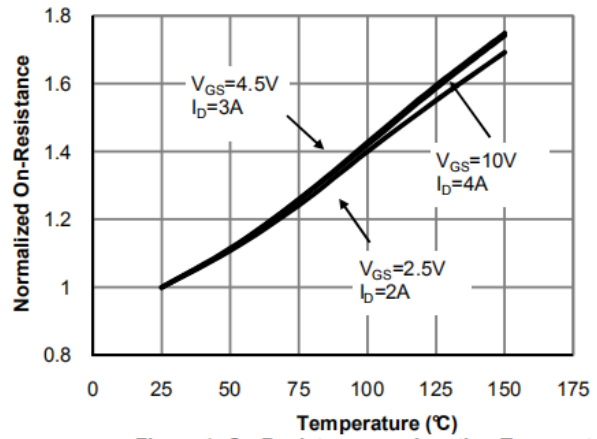


Figure 4: On-Resistance vs. Junction Temperature

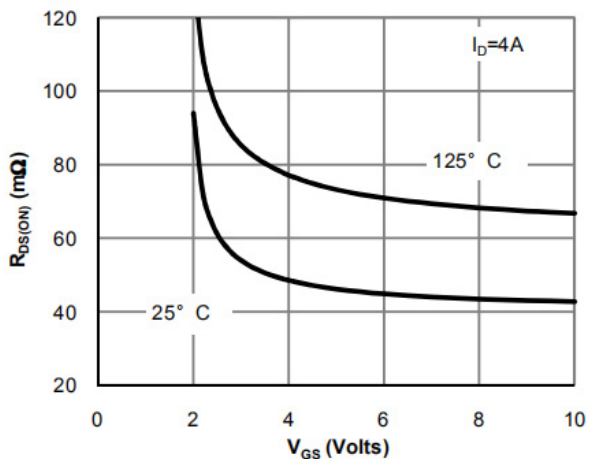


Figure 5: On-Resistance vs. Gate-Source Voltage

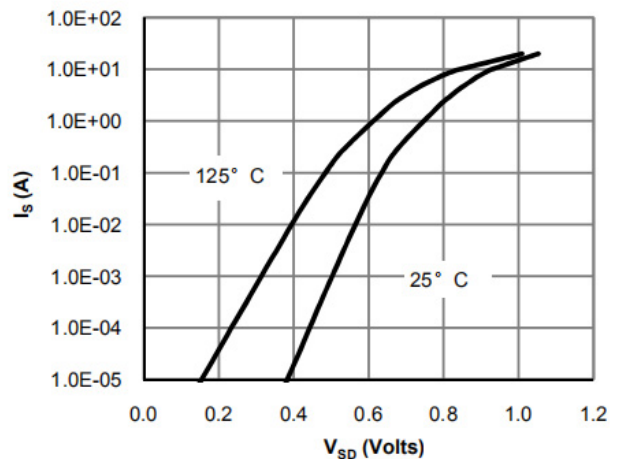
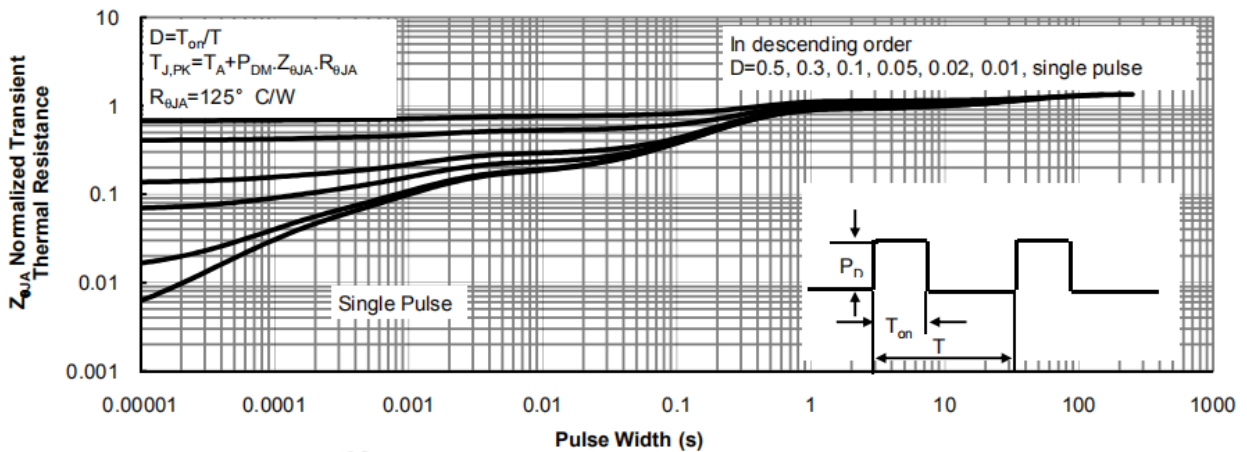
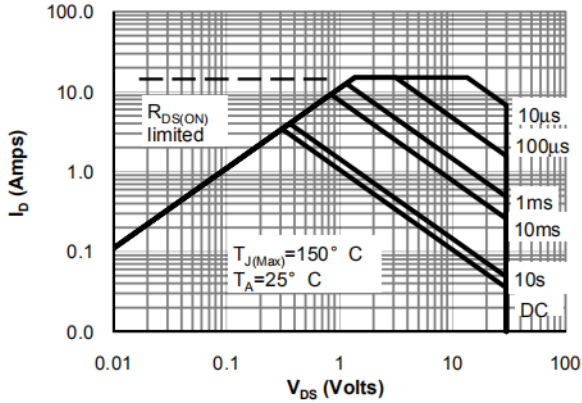
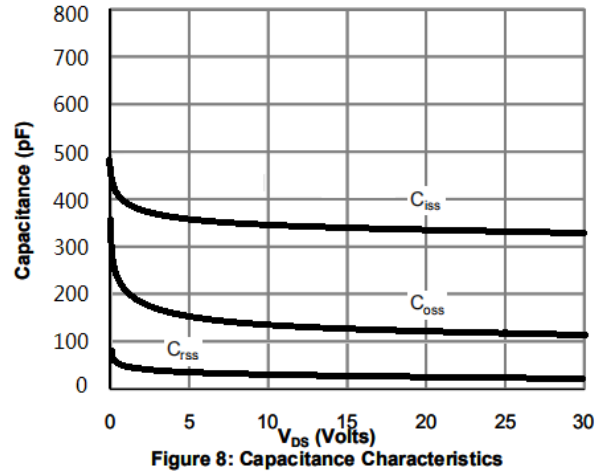
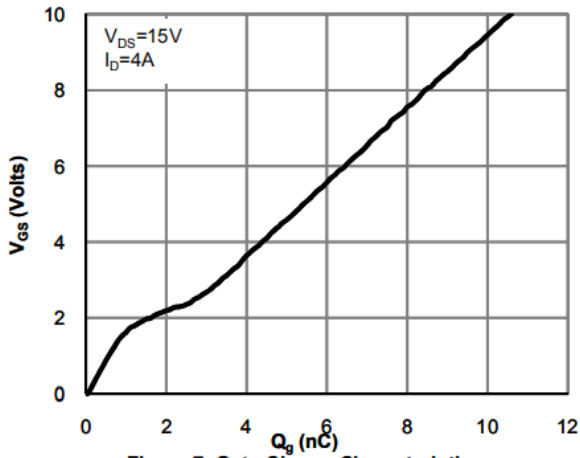


Figure 6: Body-Diode Characteristics

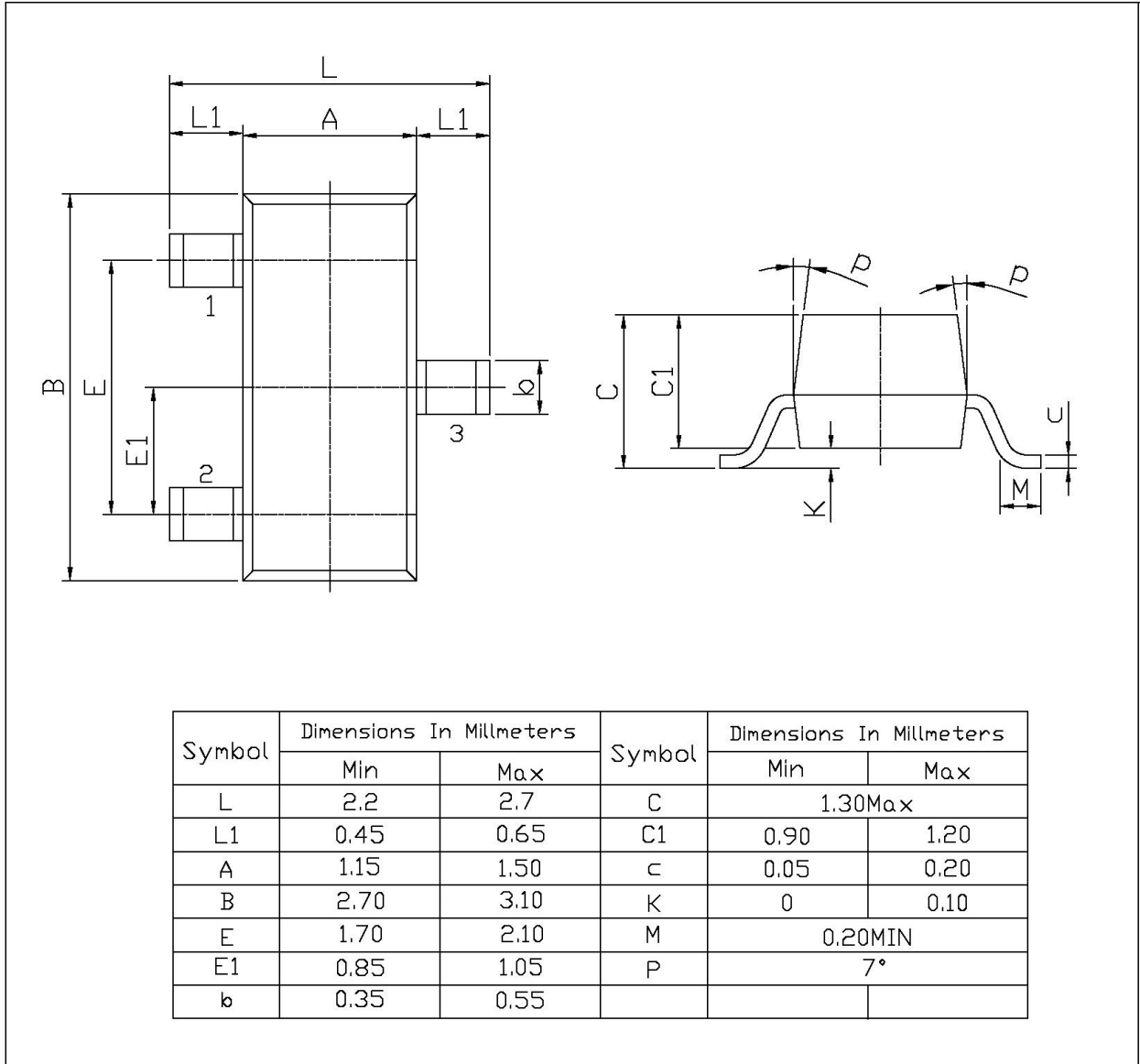
电参数曲线图 / Electrical Characteristic Curve



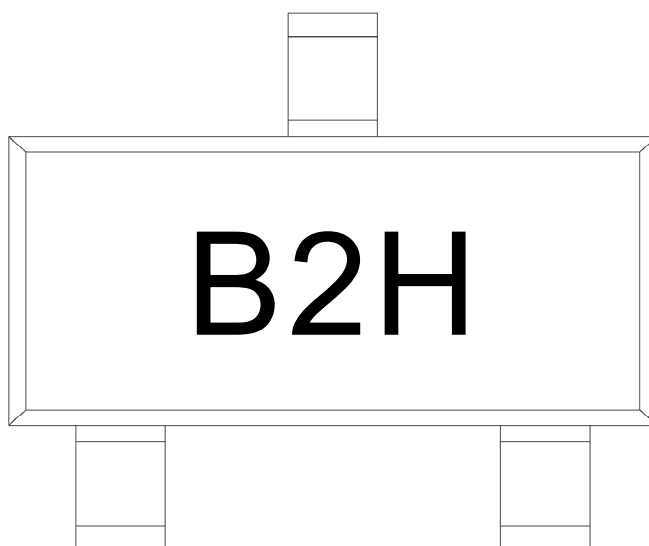
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

B2： 为型号代码

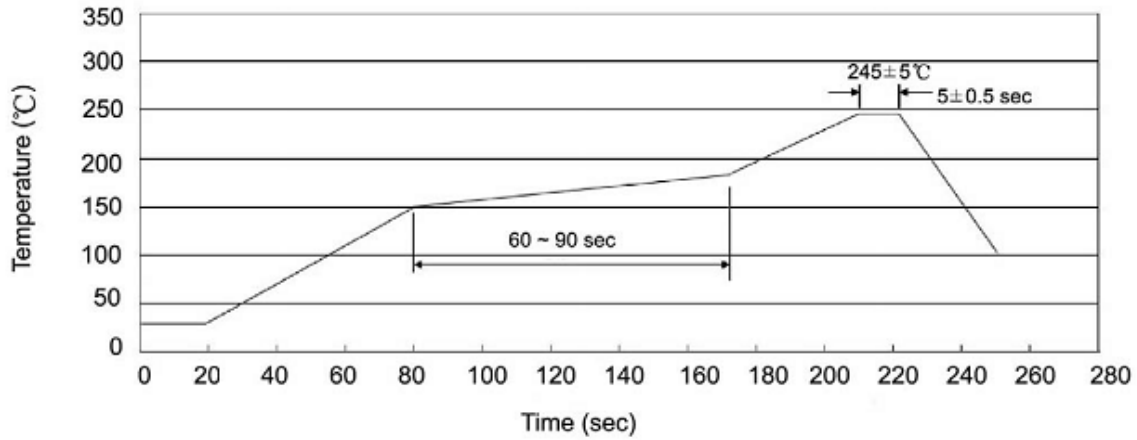
H： 为公司代码

Note:

B2: Product Type Code.

H: Company 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 150~180°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:150~180°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