

■ 描述 DESCRIPTIONS

SOT-23 塑封封装 N 沟道场效应管。N-Channel Mosfet in SOT-23 Plastic Package .

■ 特点 FEATURES

$V_{DS}=30V$ $I_D=5.8A$ $R_{DS(ON)}=20m\Omega(typ.)$ @ $V_{GS}=10V,I_D=4.2A$

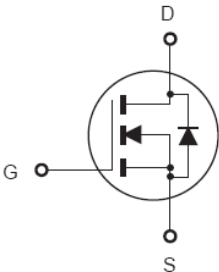
$R_{DS(ON)}=25m\Omega(typ.)$ @ $V_{GS}=4.5V,I_D=4.0A$

■ 引脚说明 PIN ASSIGNMENT



- 1 Gate
- 2 Source
- 3 Drain

■ 内部等效电路 Equivalent Circuit



■ 型号构成 Name rule

基本名称 Name			辅助识别代码 Additional code			
第一部分 Part 1	第二部分 Part 2	第三部分 Part 3	第四部分 Part 4	第五部分 Part 5	第六部分 Part 6	第七部分 Part 7
品牌 Brand	产品类别 Type	产品型号 Model	分档 Value	分隔号 Separatrix	封装代码 Package	附加码（备用） Extra-code
D	K : MOS	3400		"—"	B: SOT-23	

■ 额定值ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

特性参数 CHARACTERISTIC		符号 Symbol	额定值 Rating	单位 Unit
漏极 - 源极电压 Drain-Source Voltage		V_{DS}	30	V
栅极-源极电压 Gate-Source Voltage		V_{GS}	± 12	V
漏极电流-连续 Drain Current—Continuous	$T_A=25^{\circ}\text{C}$	I_D	5.8	A
	$T_A=70^{\circ}\text{C}$		4.9	A
脉冲漏极电流 Pulsed Drain Current		I_{DM}^a	30	A
耗散功率 Power Dissipation	$T_A=25^{\circ}\text{C}$	P_D^a	1.4	W
	$T_A=70^{\circ}\text{C}$		0.9	W
结温和存储温度范围 Junction and Storage temperature range		T_J, T_{STG}	$-55 \sim 150$	$^{\circ}\text{C}$

■ THERMAL CHARACTERISTICS 热特性

特性参数 CHARACTERISTIC		符号 Symbol	额定值 Rating	单位 Unit
热阻-结至环境 Thermal Resistance-Junction to Ambient		$R_{\theta JA}^a$	125	$^{\circ}\text{C/W}$

Note a: Surface Mounted on FR4 Board, $t \leq 10\text{sec}$.

■ 电特性 ELECTRICAL CHARACTERISTICS

(如无特殊说明, 温度为 25°C $T_A=25^{\circ}\text{C}$ unless otherwise noted)

特性参数 CHARACTERISTIC	符号 SYMBOL	测试条件 TEST CONDITIONS	最小值 MIN.	典型值 TYP.	最大值 MAX.	单位 UNIT
漏源击穿电压 Drain-Source Voltage	$V_{(BR)DSS}$	$I_D=250\mu\text{A}, V_{GS}=0$	30	—	—	V

开启电压 Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	0.95	1.4	V
截止栅极电流 Gate-Source Leakage Current	$I_{GSS/F}$	$V_{GS} = +12V, V_{DS} = 0$	—	—	0.1	μA
截止栅极电流 Gate-Source Leakage Current	$I_{GSS/R}$	$V_{GS} = -12V, V_{DS} = 0$	—	—	-0.1	μA
饱和漏源电流 Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0$	—	—	-1.0	μA
通态漏源电阻 Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4.2A$	—	20	30	m Ω
		$V_{GS} = 4.5V, I_D = 4.0A$	—	25	40	m Ω
		$V_{GS} = 2.5V, I_D = 2.0A$	—	35	60	m Ω
源漏正向电压 Drain-Source Diode Forward Voltage	V_{SD}	$I_S = 1.0A, V_{GS} = 0$	—	—	1.0	V
栅极电量 Total Gate Charge(4.5V)	Q_g	$V_{DS} = 15V, V_{GS} = 4.5V,$ $I_D = 5.8A$	—	7	—	nC
栅源极电量 Gate to source charge	Q_{gs}		—	1.5	—	nC
栅漏极电量 Gate to drain charge	Q_{gd}		—	2.0	—	nC
共源极短路输入电容 Input Capacitance	C_{iss}	$V_{DS} = 15V, V_{GS} = 0V,$ $f = 1MHz$	—	635	—	pF
共源极短路输出电容 Output Capacitance	C_{oss}		—	80	—	pF
共源极短路反馈电容 Reverse Transfer Capacitance	C_{rss}		—	55	—	pF
开启延迟时间 Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = 15V; R_L = 2.6\Omega$ $V_{GS} = 10V; R_G = 3\Omega$	—	5	—	ns
上升时间 Rise Time	t_r		—	3	—	ns
关断延迟时间 Turn-Off Delay Time	$t_{d(off)}$		—	30	—	ns
下降时间 Turn-Off Fall Time	t_f		—	5	—	ns

■ 典型特性 TYPICAL CHARACTERISTICS

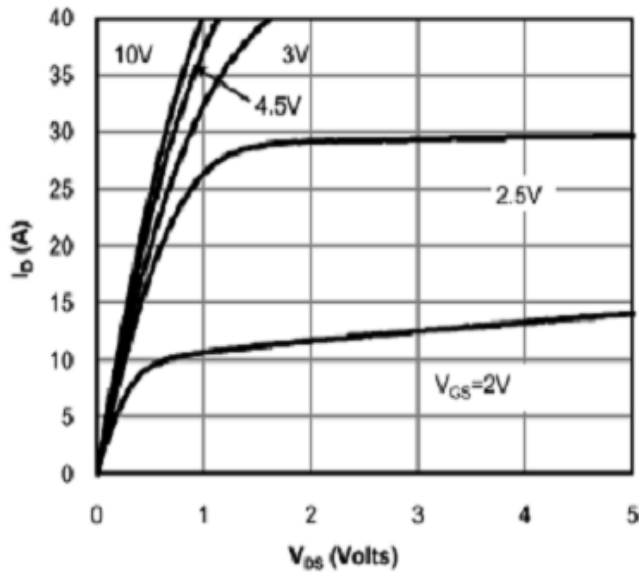


Fig 1: On-Region Characteristics (Note E)

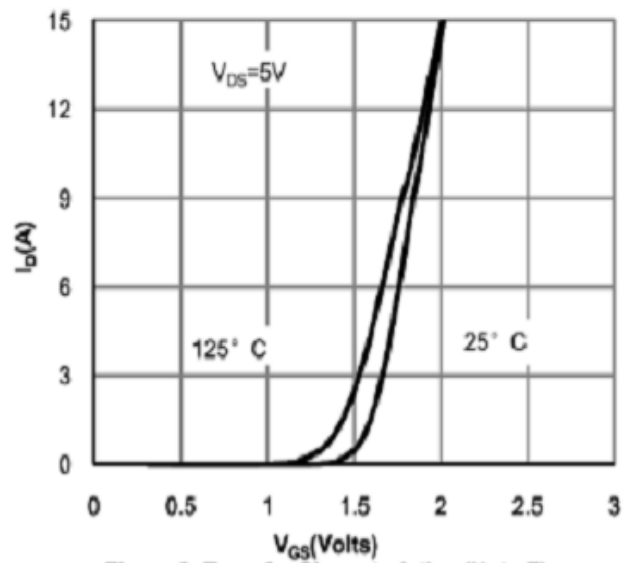


Figure 2: Transfer Characteristics (Note E)

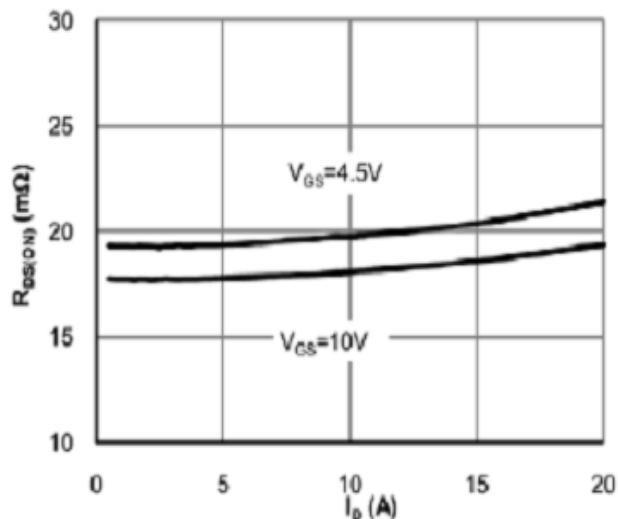


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

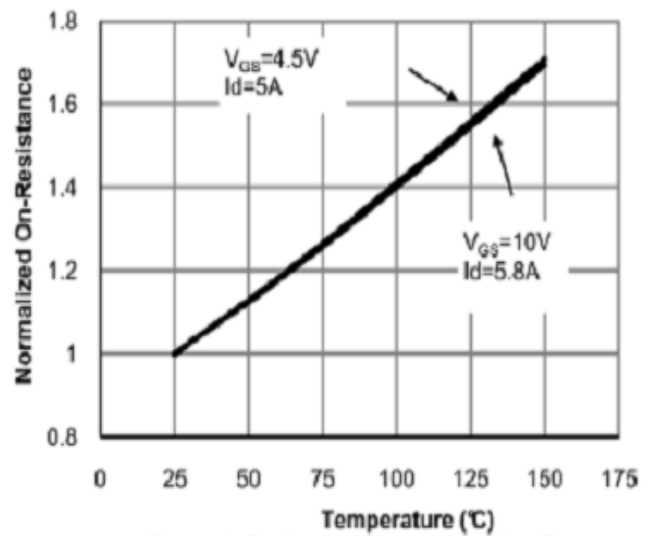


Figure 4: On-Resistance vs. Junction Temperature (Note E)

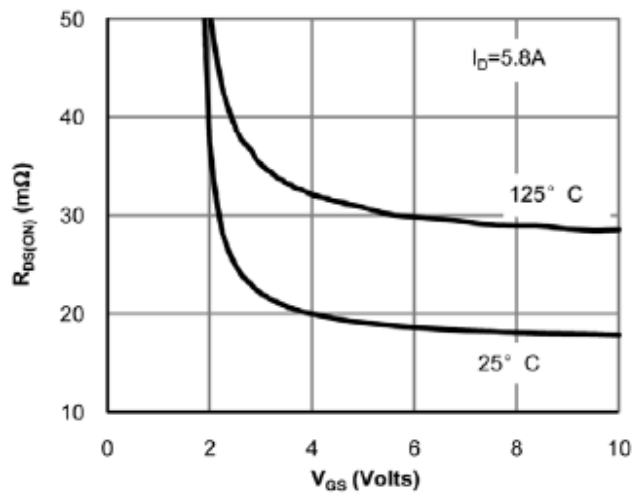


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

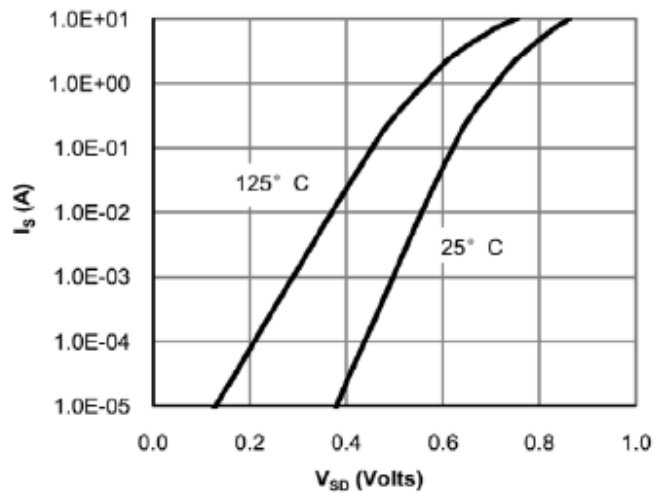


Figure 6: Body-Diode Characteristics (Note E)

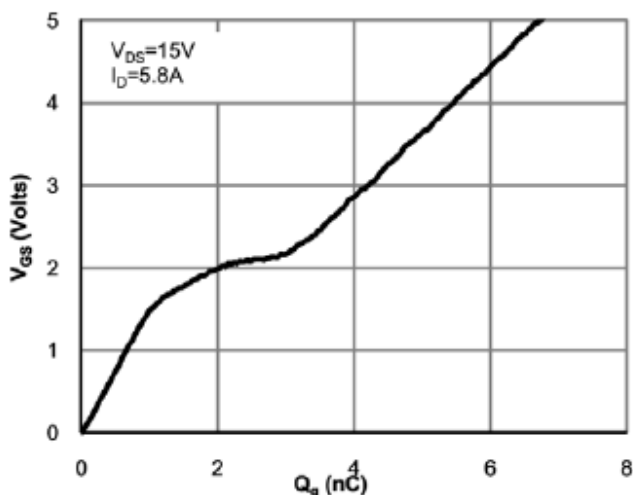


Figure 7: Gate-Charge Characteristics

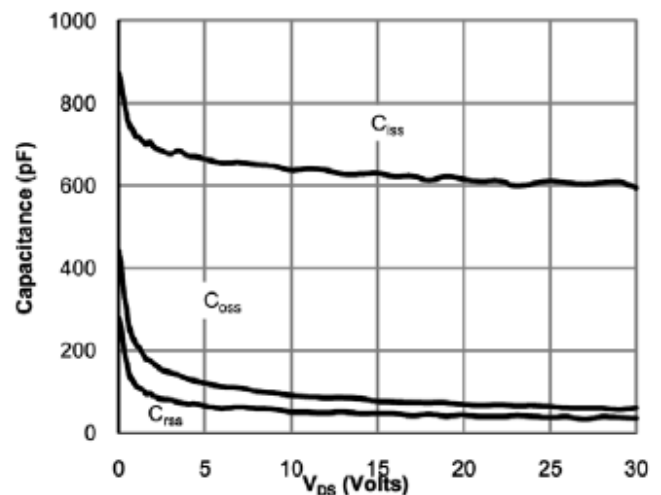


Figure 8: Capacitance Characteristics

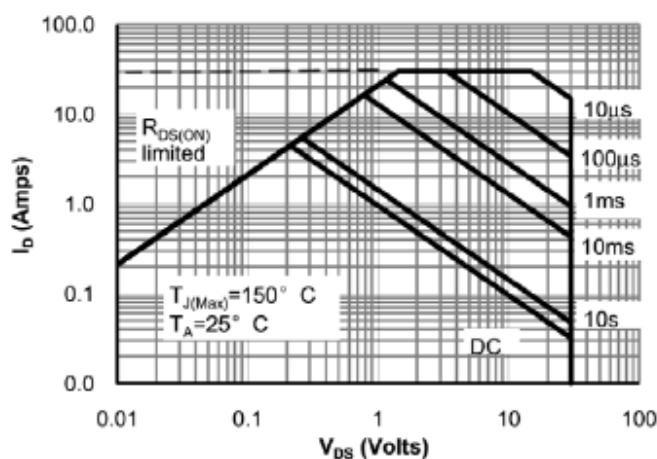


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

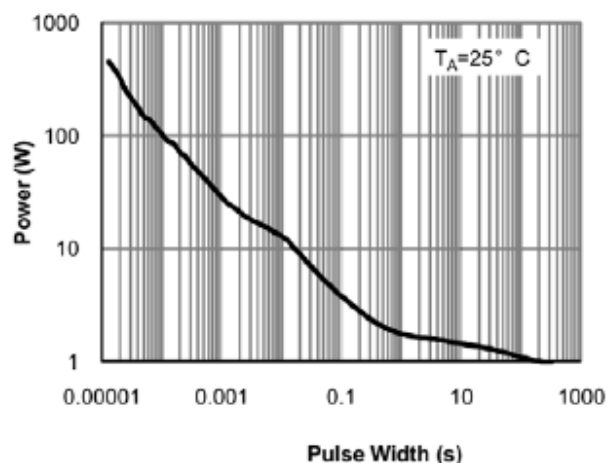
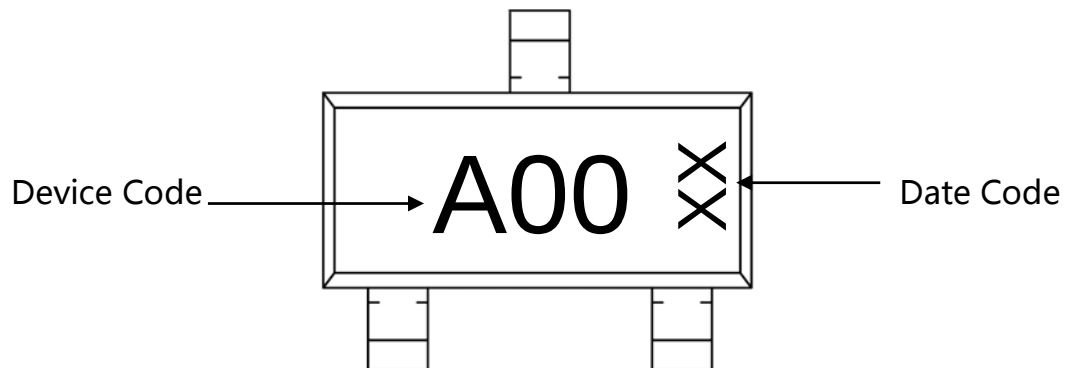
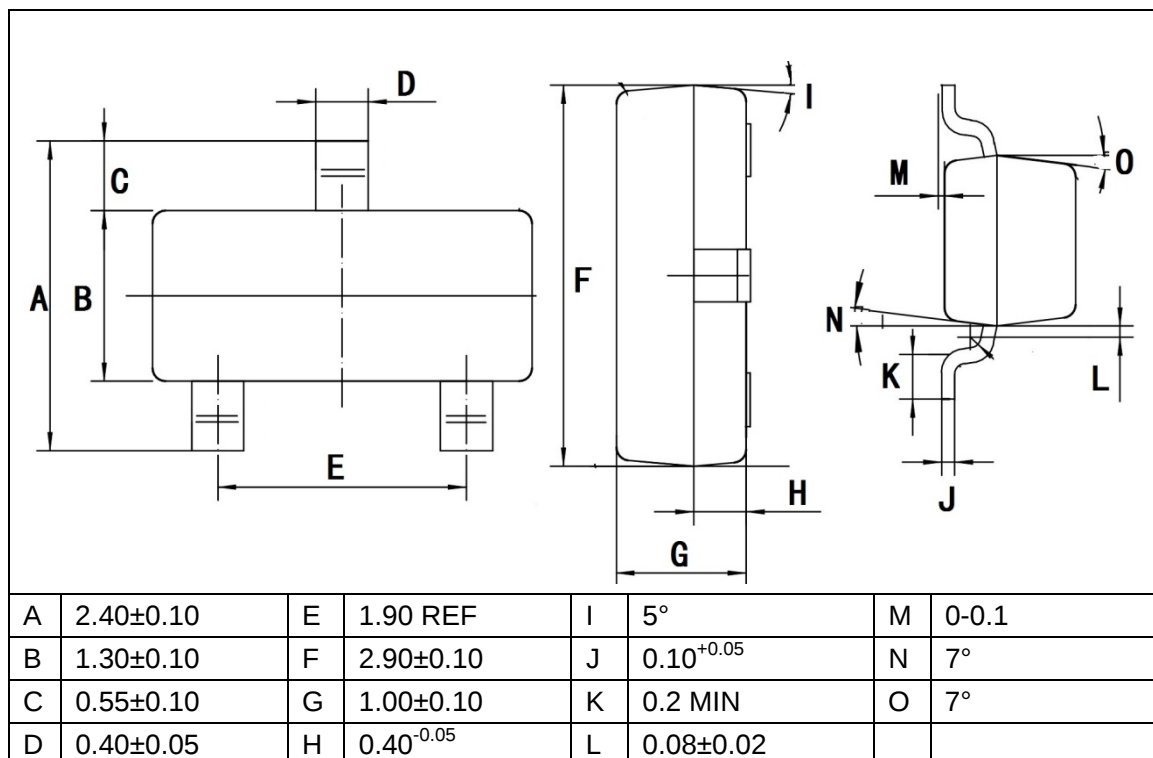


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

■ 打标 DEVICE MARKING



■ 外形尺寸 DIMENSION



■ 包装信息 PACKING INFORMATION

材料名称 Material Name	颜色 Color	尺寸 Size	数量 Quantity	备注 Note
卷盘 Reel	蓝色 Blue	7 " *8mm	3K/Reel	
内盒 Inner Case	黄色 Yellow	185*185*140mm	30K/盒 (10 盘/盒) 30K/Case (10 Reel/ Case)	
外箱 Outer Box	黄色 Yellow	460*400*210mm	180K/箱 (6 盒/箱) 180K/Box (6 Case/Box)	
标签 Label	白色 White	68*40mm	—	贴卷盘、内盒、外箱 Label on reel、inner case、 outer box