

BRCS400P03SC

Rev.B Dec.-2023

描述 / Descriptions

SOP-8 塑封封装 P 沟道 MOS 场效应管。

P-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

特征 / Features

$V_{DS} (V) = -30V$ $I_D = -6.9A (V_{GS} = \pm 20V)$

$R_{DS(ON)}@-10V \leq 30m\Omega (Typ. 28.5m\Omega)$

$R_{DS(ON)}@-4.5V \leq 55m\Omega (Typ. 40m\Omega)$

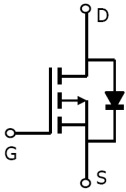
无卤产品。HF Product.

用途 / Applications

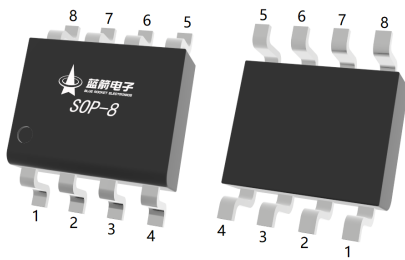
用于电源管理，便携式设备和电池供电系统。

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : S PIN 2 : S PIN 3 : S PIN 4 : G

PIN 5 : D PIN 6 : D PIN 7 : D PIN 8 : D

印章代码 / Marking

见印章说明。

See Marking Instructions.

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}	-30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_a=25^\circ\text{C})$	-6.9	A
Continuous Drain Current	$I_D (T_a=100^\circ\text{C})$	-3.5	A
Pulsed Drain Current	I_{DM}	-28	A
Power Dissipation for Single Operation	$P_D (T_a=25^\circ\text{C})$	3.1	W
Maximum Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	40	$^\circ\text{C}/\text{W}$

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}	$I_D=-250\mu A$ $V_{GS}=0V$	-30	-34		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-30V$ $V_{GS}=0V$			-1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1.0	-1.5	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V$ $I_D=-5A$		28.5	30	m Ω
		$V_{GS}=-4.5V$ $I_D=-3A$		40	55	
Diode Forward Voltage	V_{SD}	$I_S=-1A$ $V_{GS}=0V$			-1.2	V
Gate Resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		7		Ω
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=-15V$ $f=1MHz$		850		pF
Output Capacitance	C_{oss}			100		
Reverse Transfer Capacitance	C_{rss}			65		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-5A$		14.2		nC
Total Gate Charge	$Q_{g(4.5V)}$			7.4		
Gate-Source Charge	Q_{gs}			3.3		
Gate-Drain Charge	Q_{gd}			3.8		
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_L=1.8\Omega$ $R_{GEN}=3\Omega$		8.3		ns
Turn-on Rise Time	t_r			6.5		
Turn-off Delay Time	$t_{d(OFF)}$			22		
Turn-off Fall Time	t_f			5.5		

电参数曲线图 / Electrical Characteristic Curve

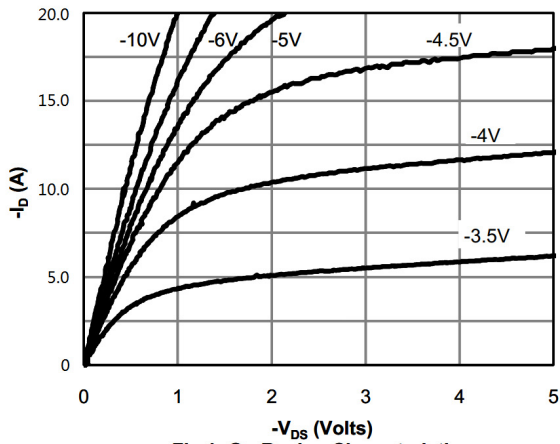


Fig 1: On-Region Characteristics

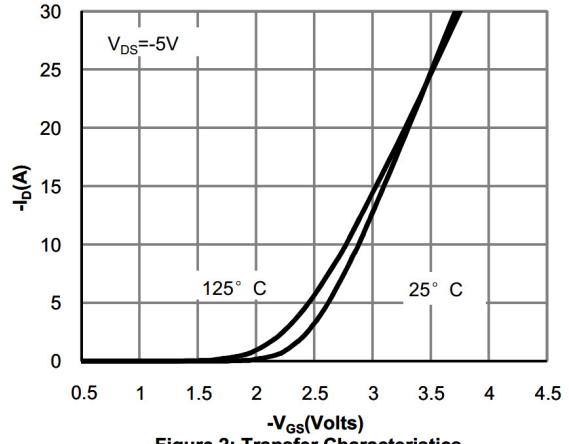


Figure 2: Transfer Characteristics

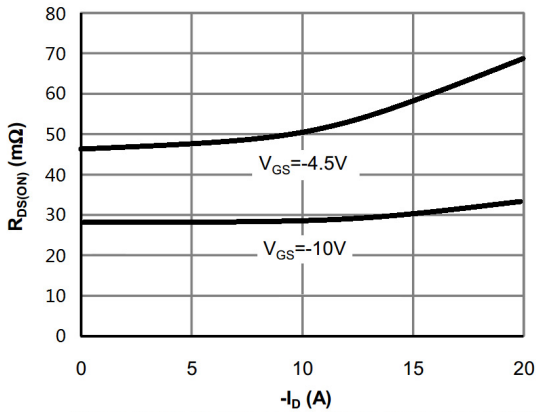


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

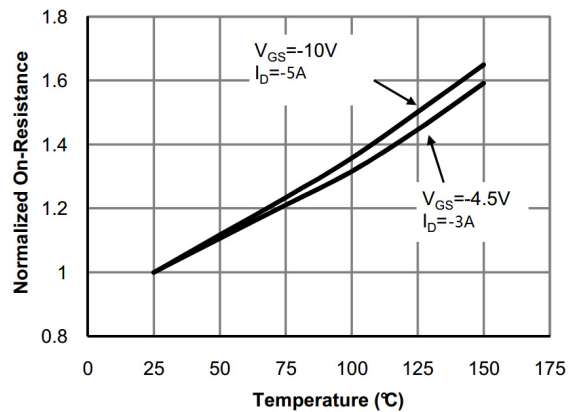


Figure 4: On-Resistance vs. Junction Temperature

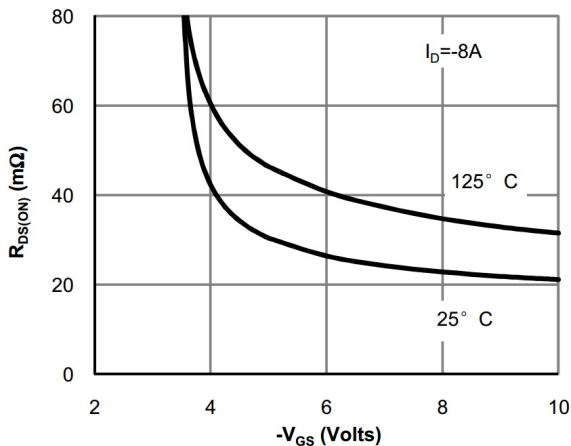


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

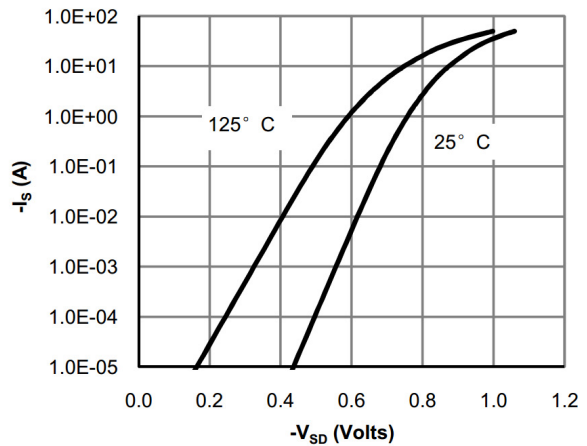


Figure 6: Body-Diode Characteristics (Note E)

电参数曲线图 / Electrical Characteristic Curve

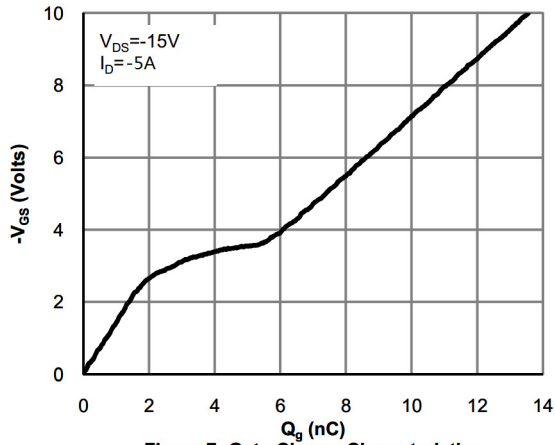


Figure 7: Gate-Charge Characteristics

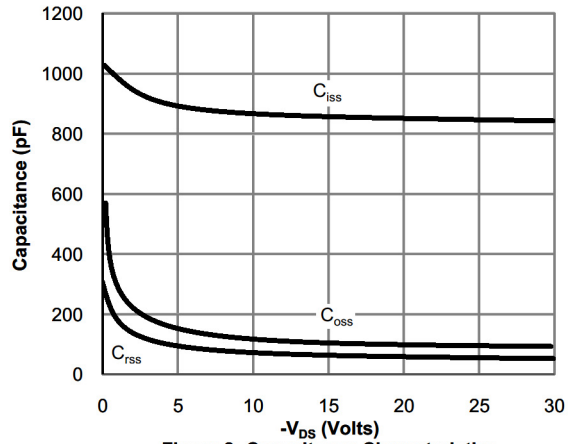


Figure 8: Capacitance Characteristics

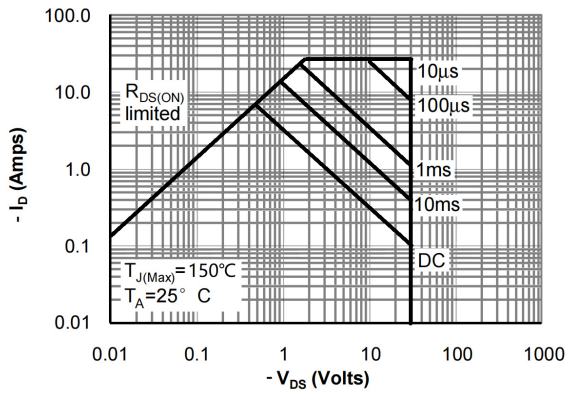


Figure 9: Maximum Forward Biased Safe Operating Area

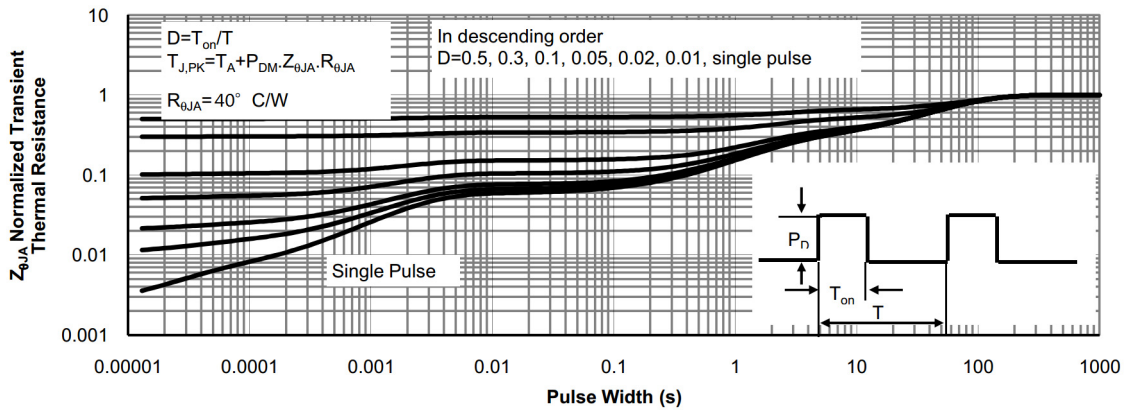
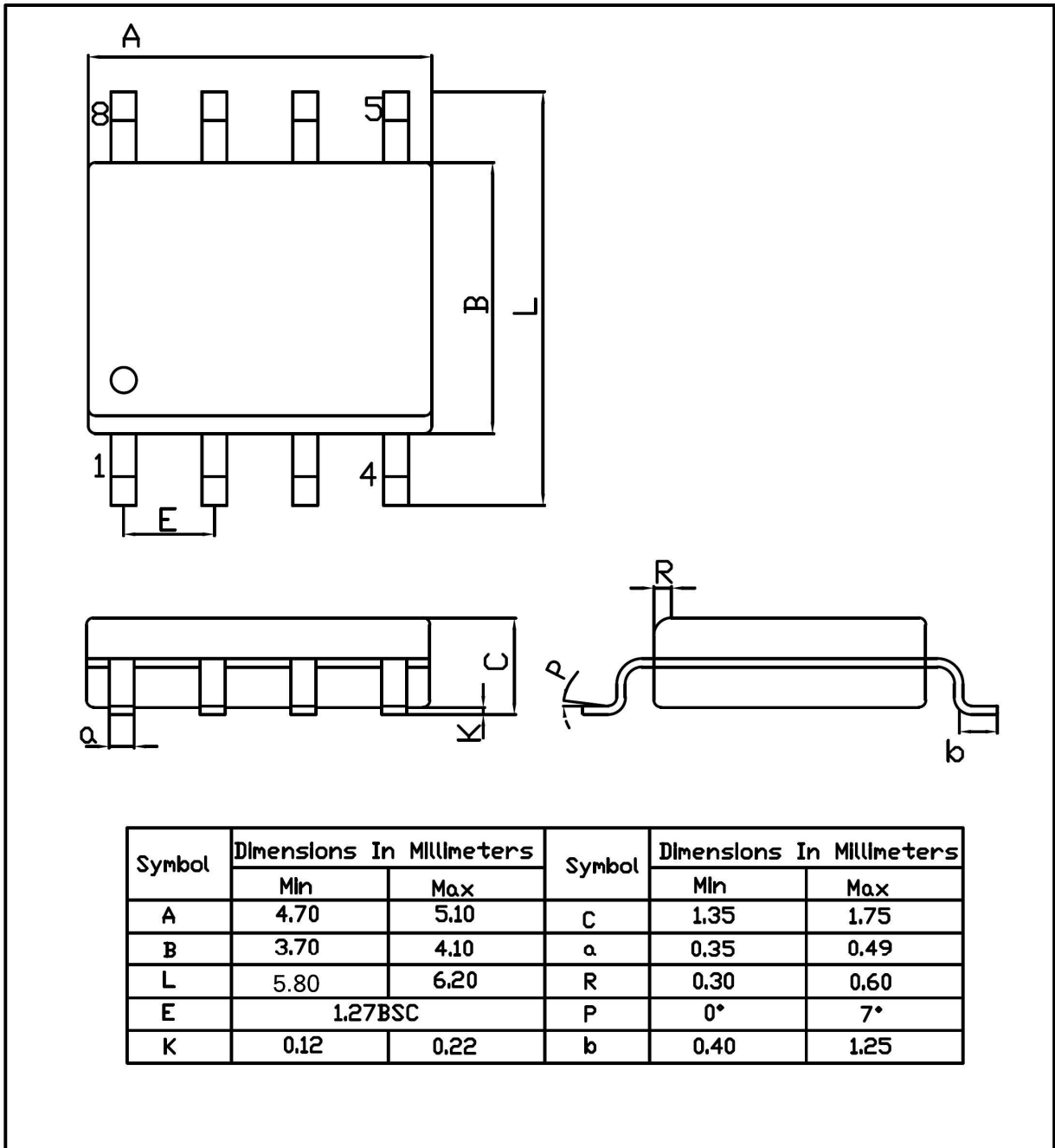


Figure 10: Normalized Maximum Transient Thermal Impedance

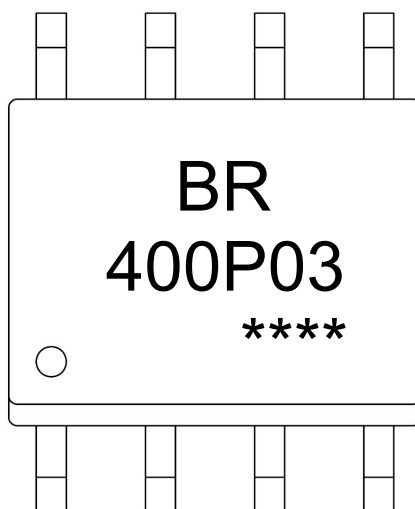
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

400P03： 为型号代码

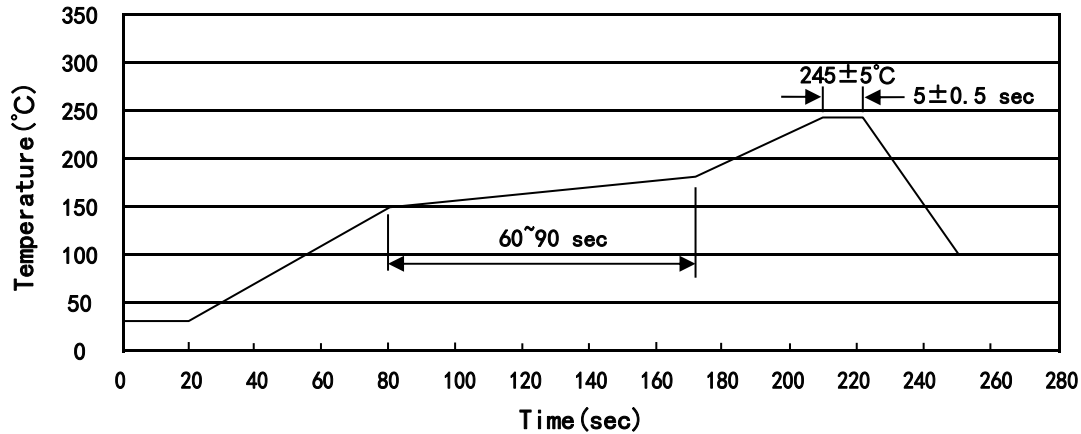
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

400P03: Product Type Code

****: Lot No. Code, code change with Lot No

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
SOP/ESOP-8	4,000	2	8,000	6	48,000	13" ×12	360×360×50	380×335×366

使用说明 / Notices