

BRCS350P04SC

Rev.A Sep.-2024

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

$V_{DS} (V) = -40V$ $I_D = -6.8A (V_{GS} = \pm 20V)$

$R_{DS(ON)}@-10V \leq 35m\Omega (Typ. 33m\Omega)$

$R_{DS(ON)}@-4.5V \leq 60m\Omega (Typ. 40m\Omega)$

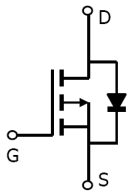
无卤产品。HF Product.

用途 / Applications

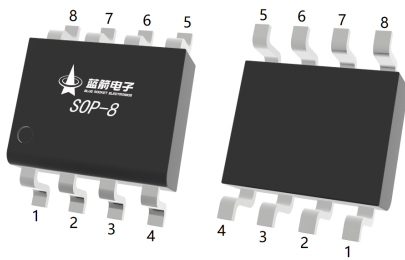
用于电源管理，便携式设备和电池供电系统。

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}	-40	V
Drain Current	I _D	-6.8	A
Drain Current - Pulsed	I _{DM}	-30	A
Gate-Source Voltage	V _{GS}	±20	V
Avalanche Current	I _{AS}	13	A
Single Pulsed Avalanche Energy (L=0.5mH)	E _{AS}	54	mJ
Power Dissipation	P _D	2.7	W
Storage Temperature Range	T _{stg}	-55~150	°C
Thermal Resistance-Junction to Ambient	t ≤ 10s	46	°C/W
	Steady-State	80	

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} =0V I _D =-250μA	-40	-46		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V V _{GS} =0V			1.0	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	-1.0	-1.4	-2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V I _D =-20A		33	35	mΩ
		V _{GS} =-4.5V I _D =-10A		40	60	
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =-1A			-1.2	V
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V, f=1MHz		9.5		Ω
Input Capacitance	C _{iss}	V _{DS} =-25V V _{GS} =0V f=1.0MHz		1500		pF
Output Capacitance	C _{oss}			620		
Reverse Transfer Capacitance	C _{rss}			440		
Total Gate Charge	Q _{g(-10V)}	V _{GS} =-10V V _{DS} =-20V I _D =-12A		16.5		nC
Total Gate Charge	Q _{g(-4.5V)}			7.8		
Gate Source Charge	Q _{gs}			4.2		
Gate Drain Charge	Q _{gd}			3.8		

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
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-20V$ $R_L=1.6\Omega$ $R_{GEN}=3\Omega$		6.5		ns
Turn-On Rise Time	t_r			9.2		
Turn-Off Delay Time	$t_{d(off)}$			52		
Turn-Off Fall Time	t_f			50.8		

电参数曲线图 / Electrical Characteristic Curve

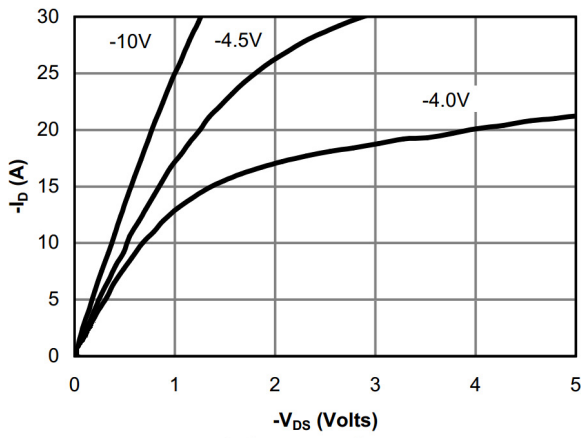


Figure 1: On-Region Characteristics

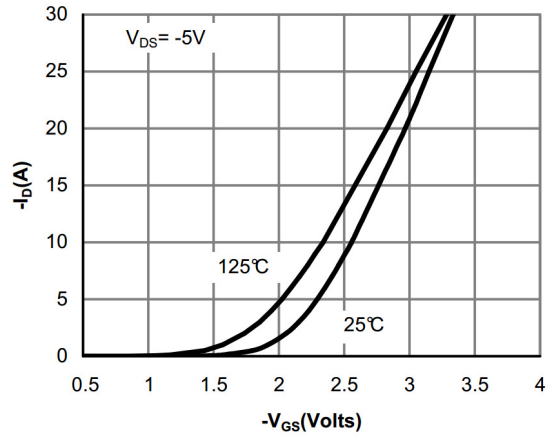


Figure 2: Transfer Characteristics

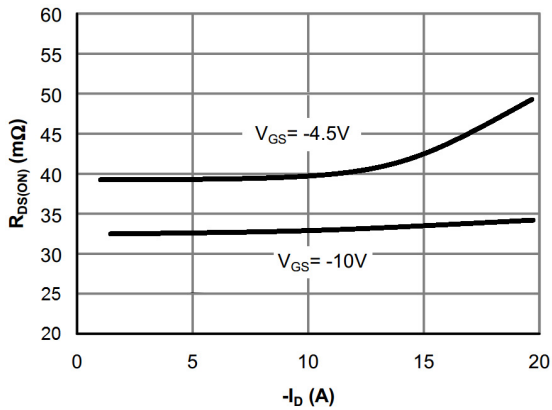


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

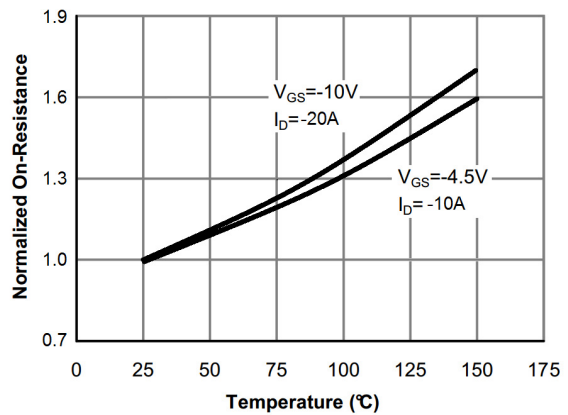


Figure 4: On-Resistance vs. Junction Temperature

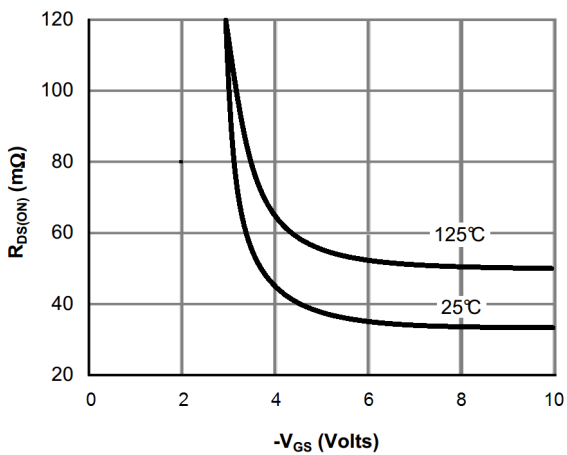


Figure 5: On-Resistance vs. Gate-Source Voltage

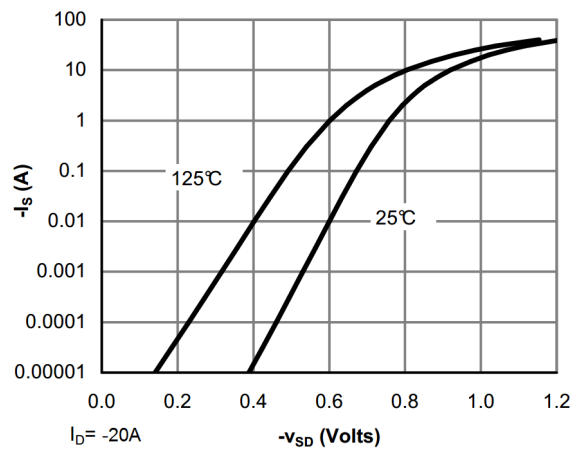


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

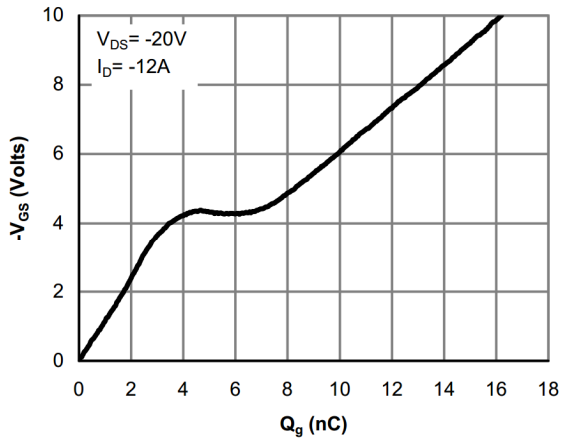


Figure 7: Gate-Charge Characteristics

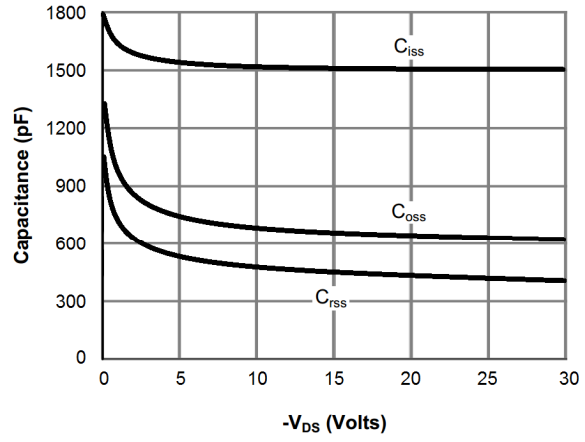


Figure 8: Capacitance Characteristics

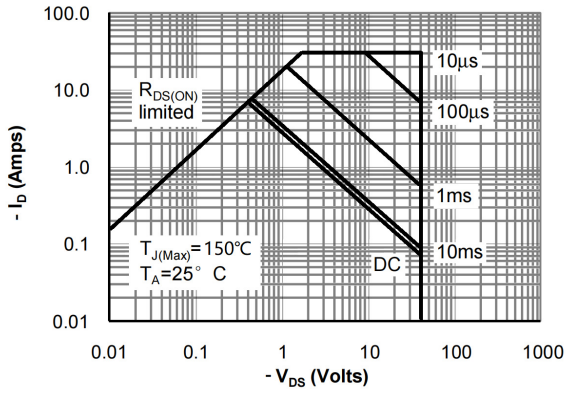


Figure 9: Maximum Forward Biased Safe Operating Area

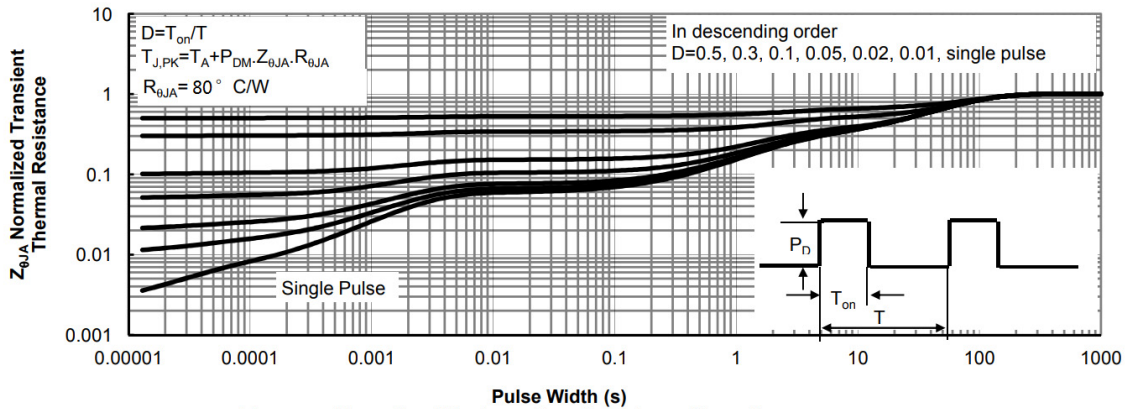
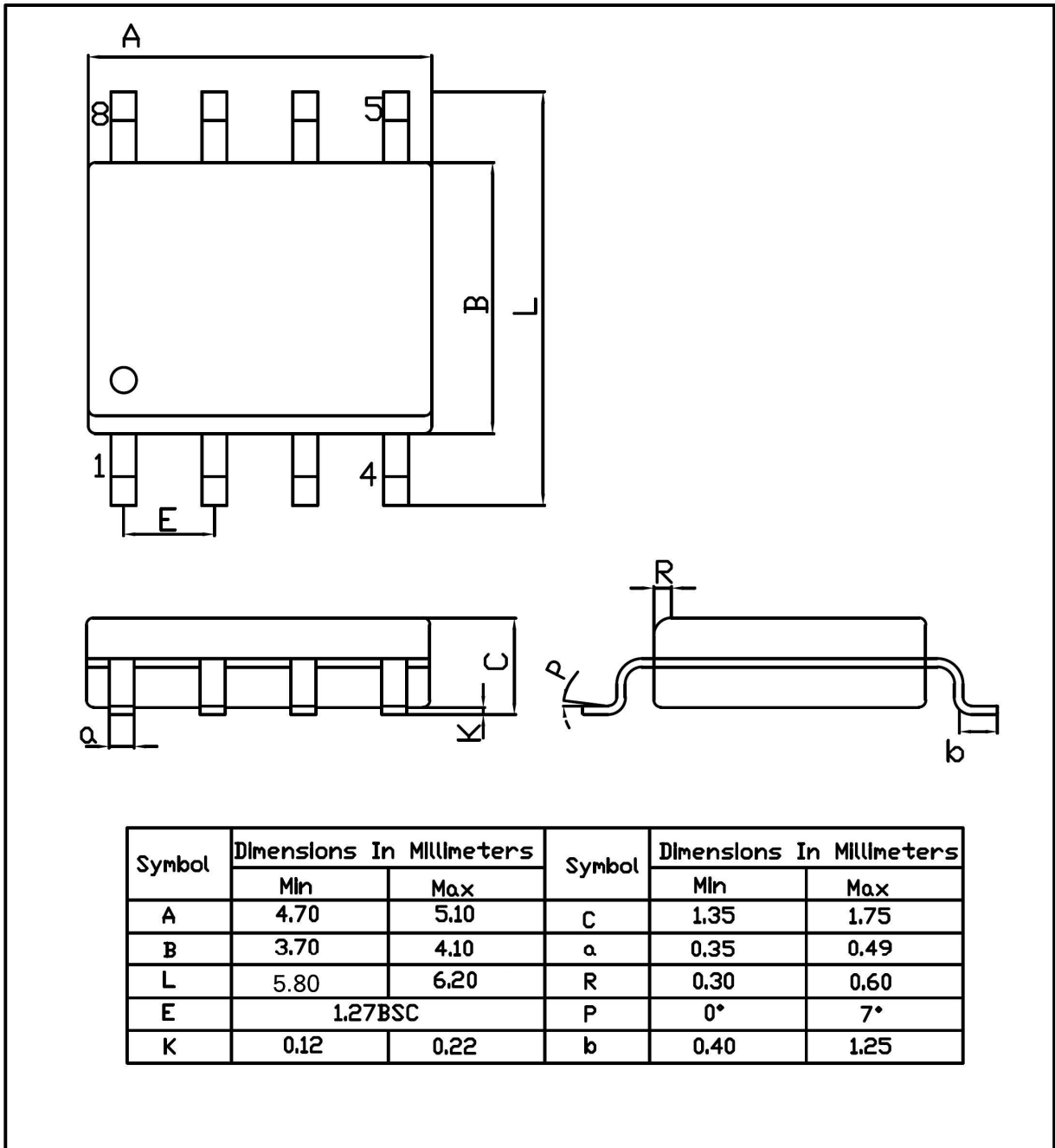


Figure 10: Normalized Maximum Transient Thermal Impedance

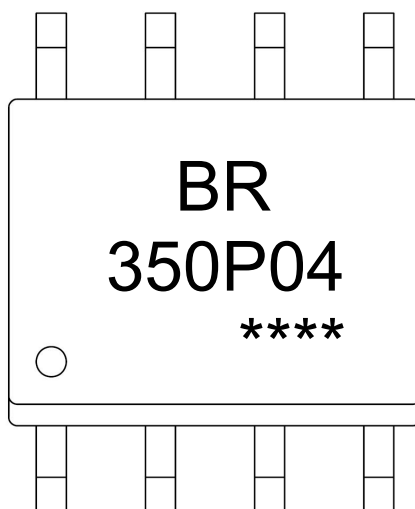
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

350P04： 为型号代码

****： 为生产批号代码，随生产批号变化

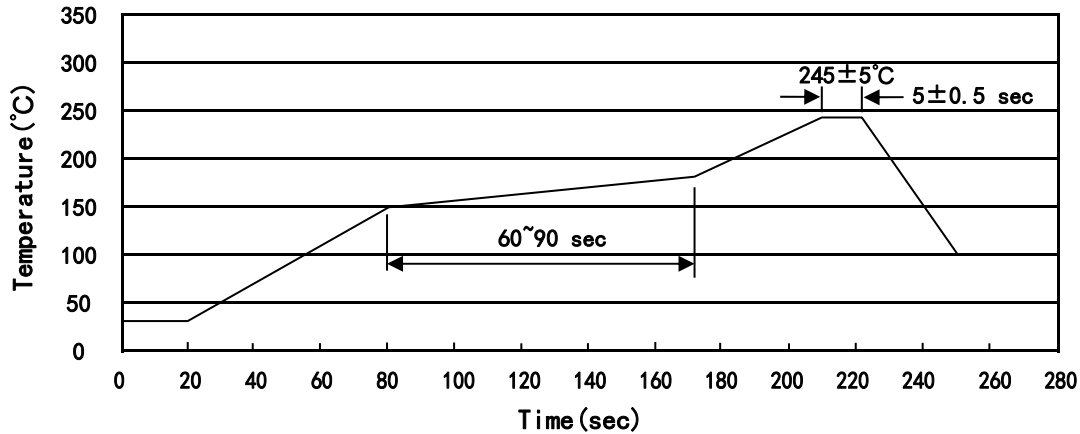
Note:

BR: Company Code

350P04: 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