

描述 / Descriptions

SOP-8 塑封封装 N 沟道 MOS 场效应管。

N-Channel MOSFET in a SOP-8 Plastic Package.

特征 / Features

$V_{DS}=30V$ $I_D=23A(V_{GS}=\pm 20V)$

$R_{DS(ON)}@10V \leq 5.5m\Omega$ (Typ. 4.3m Ω)

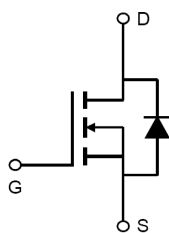
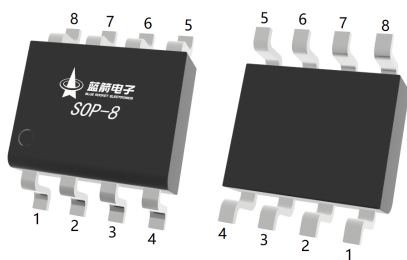
$R_{DS(ON)}@4.5V \leq 7.0m\Omega$ (Typ. 5.5m Ω)

无卤产品。HF Product.

用途 / Applications

DC/DC 和 AC/DC 转换器的同步整流，隔离直流/直流转换器在电信和工业。。

Synchronous Rectification in DC/DC and AC/DC Converters, Isolated DC/DC Converters in Telecom and Industrial.

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_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	23	A
Pulsed Drain Current ^①		I_{DM}	120	A
Avalanche Current		I_{AS}	30	A
Avalanche energy		E_{AS}	70	mJ
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	5	W
Operating and Junction Temperature Range		T_j T_{stg}	-55~+150	$^\circ\text{C}$
Thermal resistance, junction - ambient		$R_{\theta JA}$	75	$^\circ\text{C/W}$
Thermal resistance, junction - case		$R_{\theta JC}$	25	$^\circ\text{C/W}$

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}	$V_{GS}=0V$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.2	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		4.3	5.5	m Ω
		$V_{GS}=4.5V$ $I_D=12A$		5.5	7	
Forward Transconductance	g_{FS}	$V_{DS}=25V$ $I_D=10A$		30		S
Diode Forward Voltage	V_{SD}	$I_S=1A$ $V_{GS}=0V$		0.7	1.2	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
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		4000		pF
Output Capacitance	C_{oss}			420		
Reverse Transfer Capacitance	C_{rss}			280		
Gate resistance	R_g	$f=1.0MHz$		0.55		Ω
Total Gate Charge(10V)	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=20A$ $V_{DS}=15V$		36	49	nC
Total Gate Charge(4.5V)	$Q_{g(4.5V)}$			17	23	
Gate-Source Charge	Q_{gs}			6		
Gate-Drain Charge	Q_{gd}			8		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\Omega$ $R_{GEN}=3.0\Omega$		7.5		ns
Turn-On Rise Time	t_r			4.0		
Turn-Off Delay Time	$t_{d(off)}$			37.0		
Turn-Off Fall Time	t_f			7.5		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=20A$ $di/dt=500A/\mu s$		14		ns
Body Diode Reverse Recovery Charge	Q_{rr}			20.3		nC

Note: ① Pulse Test : Pulse width $\leq 300 \mu s$, Duty cycle $\leq 2\%$;

电参数曲线图 / Electrical Characteristic Curve

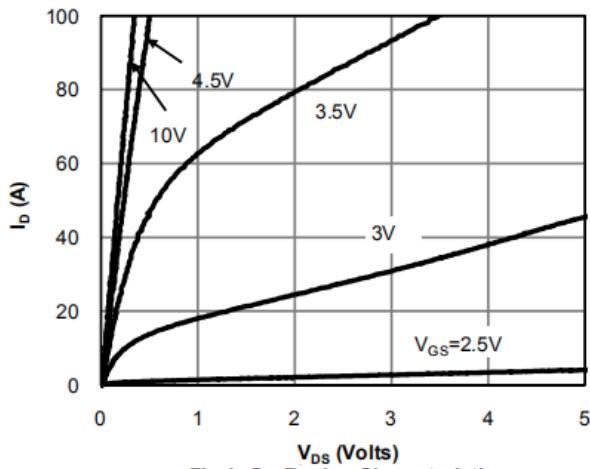


Fig 1: On-Region Characteristics

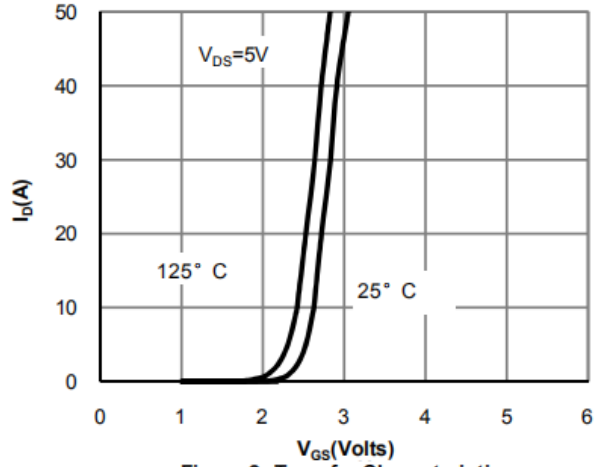


Figure 2: Transfer Characteristics

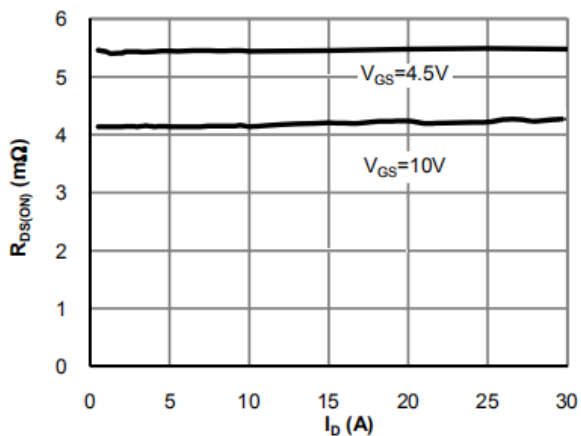


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

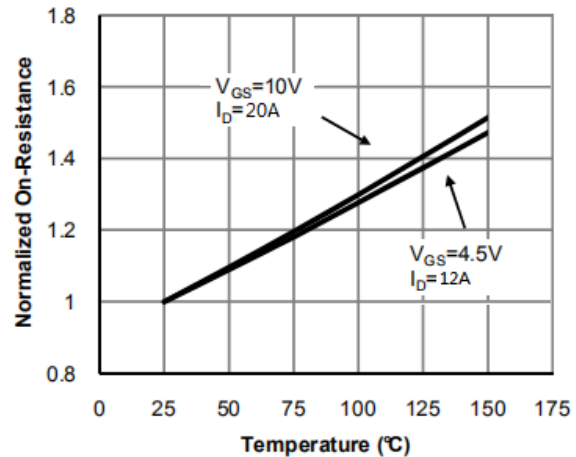


Figure 4: On-Resistance vs. Junction Temperature

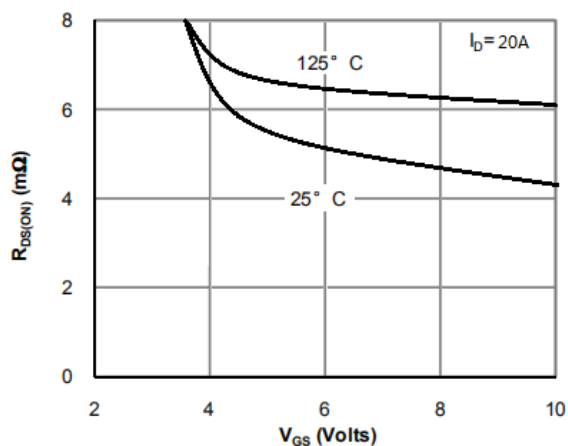


Figure 5: On-Resistance vs. Gate-Source Voltage

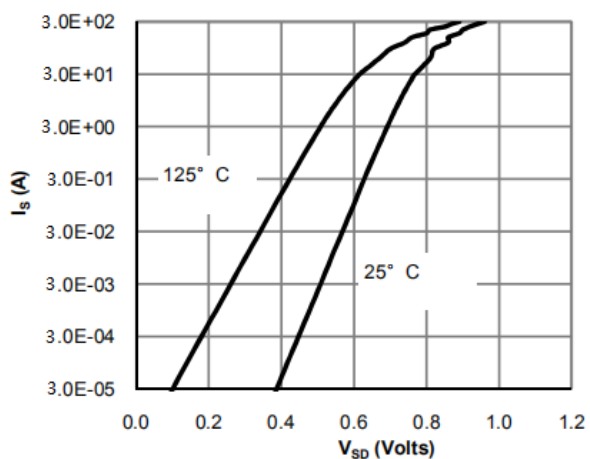
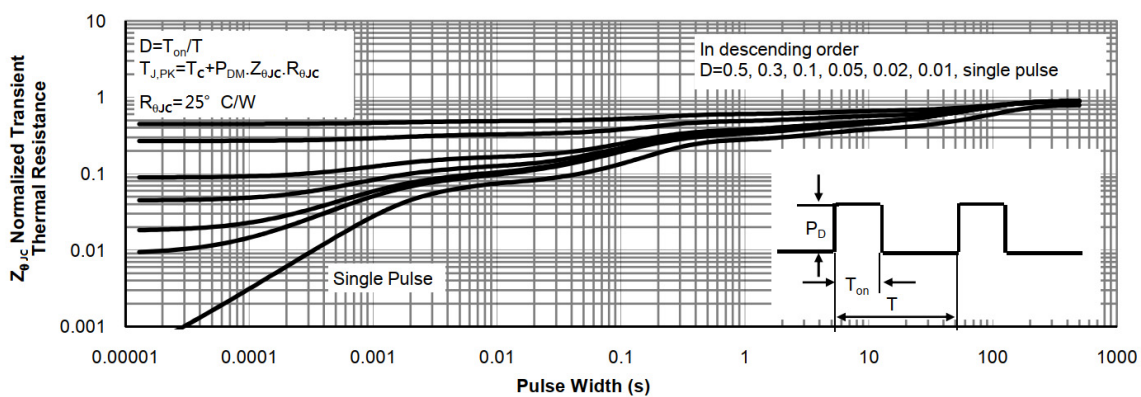
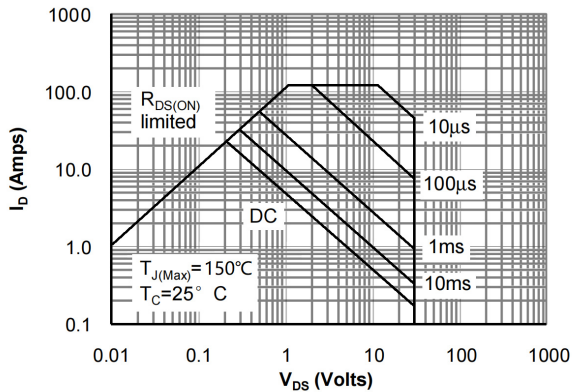
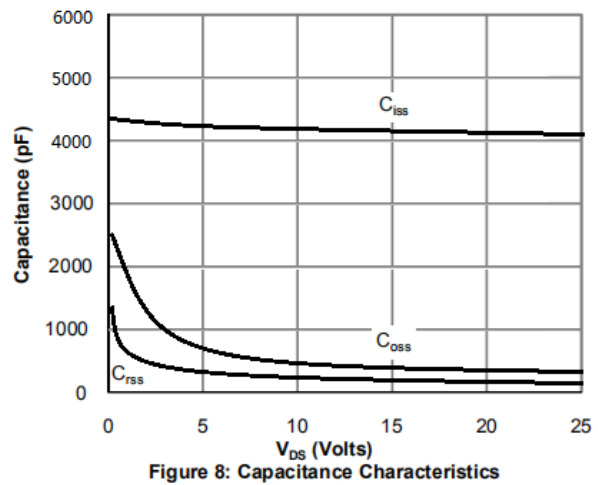
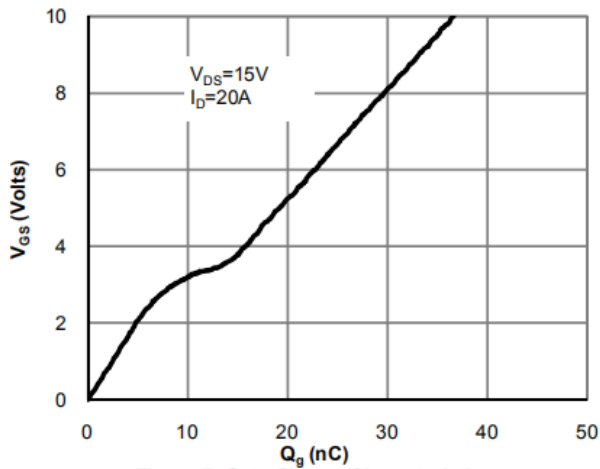


Figure 6: Body-Diode Characteristics

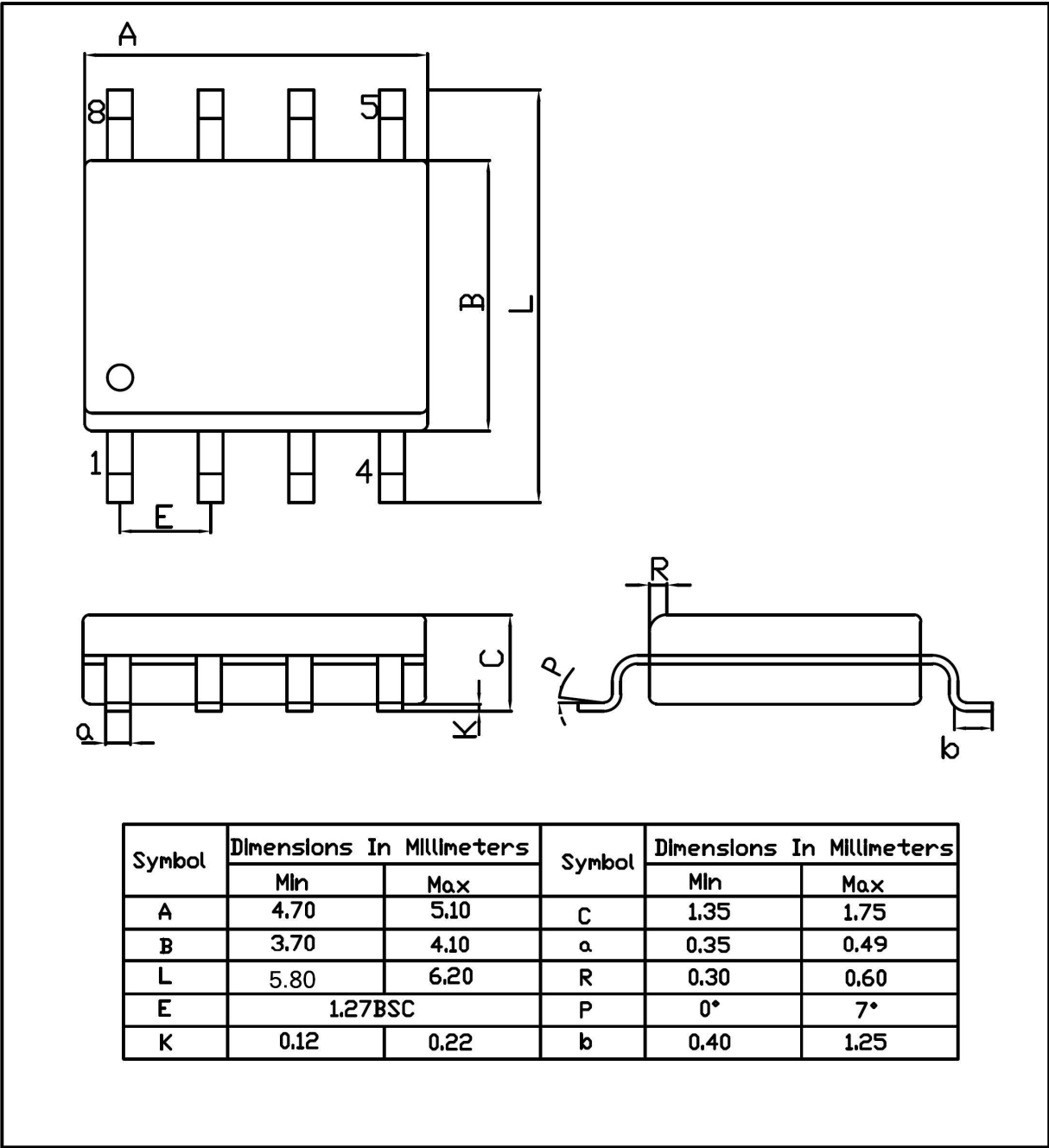
电参数曲线图 / Electrical Characteristic Curve

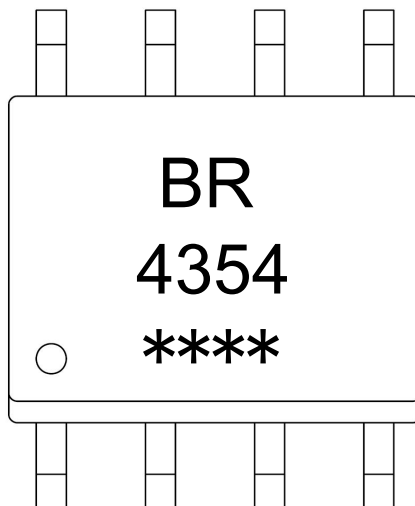


外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



**印章说明 / Marking Instructions**

说明：

BR： 为公司代码

4354： 为型号代码

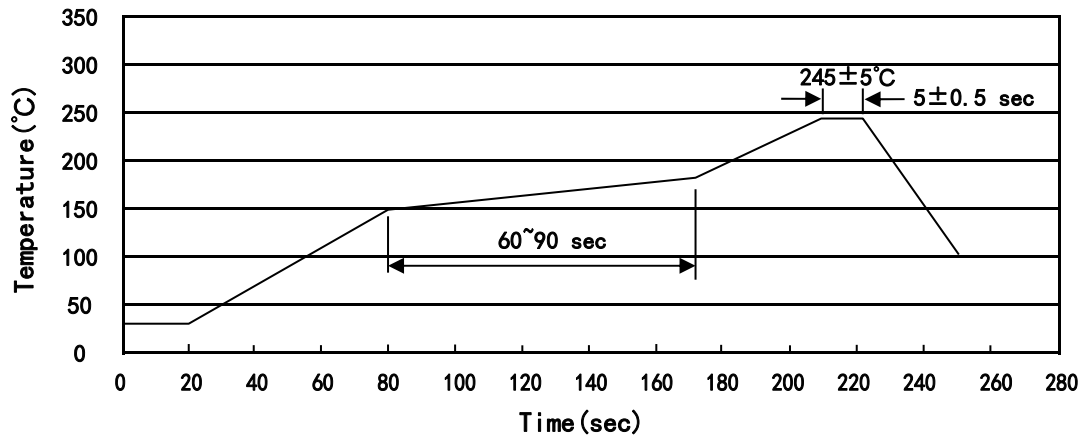
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code.

4354： Product Type.

****: 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