描述 / Descriptions

SOP-8 塑封封装互补增强模式 MOS 场效应管。
Complementary Enhancement MOSFET in a SOP-8 Plastic Package.

特征 / Features

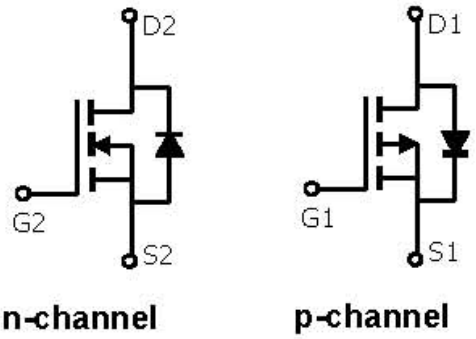
N-channel	P-channel
V_{DS}(V)=40V	V_{DS}(V)=-40V
I_D=6A	I_D=-5A
$R_{DS(ON)}$<31mΩ (V_{GS}=10V)	$R_{DS(ON)}$<45mΩ (V_{GS}=-10V)
$R_{DS(ON)}$<45mΩ (V_{GS}=4.5V)	$R_{DS(ON)}$<63mΩ (V_{GS}=-4.5V)

无卤产品。HF Product.

用途 / Applications

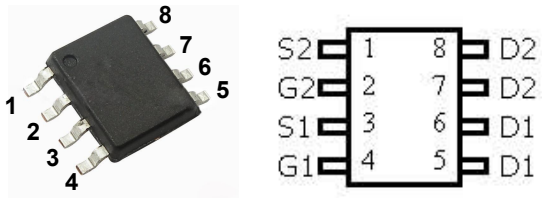
用于高功率 DC/DC 转换和功率开关。适用于作负载开关或脉宽调制应用。
These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies. And suitable for use as a load switch or in PWM applications.

内部等效电路 / Equivalent Circuit



n-channel **p-channel**

引脚排列 / Pinning



放大及印章代码 / h_{FE} Classifications & Marking

见印章说明。See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25℃)

参数 Parameter		符号 Symbol	数值 Rating		单位 Unit
			N-channel	P-channel	
Drain-Source Voltage		V_{DSS}	40	-40	V
Gate-Source Voltage		V_{GSS}	±20		V
Continuous Drain Current	T_A=25℃	I_D	6	-5	A
	T_A=70℃	I_D	5	-4	A
Pulsed Drain Current		I_{DM}	20	-20	A
Power Dissipation	T_A=25℃	P_D	2	2	W
	T_A=70℃	P_D	1.28	1.28	W
Maximum Junction-to-Ambient	t≤10s	$R_{\theta JA}$	62.5	62.5	℃/W
	Steady-State	$R_{\theta JA}$	110	110	℃/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	50	50	℃/W
Junction and Storage Temperature Range		T_J,T_{STG}	-55 to +150		℃

N-沟道电性能参数/N-CHANNEL Electrical Characteristics(Ta=25℃)

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	44		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V V_{GS}=0V			1.0	μA
		V_{DS}=40V V_{GS}=0V T_J=55℃			5.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1	1.6	3	V
On state drain current	$I_{D(on)}$	V_{DS}=10VV_{GS}=5.0V	20			A
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=6A		17.5	31	mΩ
		V_{GS}=4.5V I_D=5.0A		22.8	45	mΩ
Forward Transconductance	g_{FS}	V_{DS}=5.0V I_D=6.0A		14		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1.0A		0.73	1.0	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		1200		pF
Output Capacitance	C_{oss}			310		pF
Reverse Transfer Capacitance	C_{rss}			65		pF
Gate resistance	R_g	V_{DS}=0V V_{GS}=0V f=1.0MHz		9.5		Ω
Total Gate Charge(10V)	Q_g	V_{GS}=10V V_{DS}=20V I_D=6A		8.3		nC
Total Gate Charge(4.5V)				4.2		nC
Gate-Source Charge	Q_{gs}			1.3		nC
Gate-Drain Charge	Q_{gd}			2.3		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=20 V V_{GS}=10V R_L=3.3Ω R_{GEN}=3Ω		4.2		ns
Turn-On Rise Time	t_r			3.3		ns
Turn-Off Delay Time	$t_{d(off)}$			15.6		ns
Turn-Off Fall Time	t_f			3		ns

N-沟道电参数曲线图 / N-CHANNEL Electrical Characteristic Curve

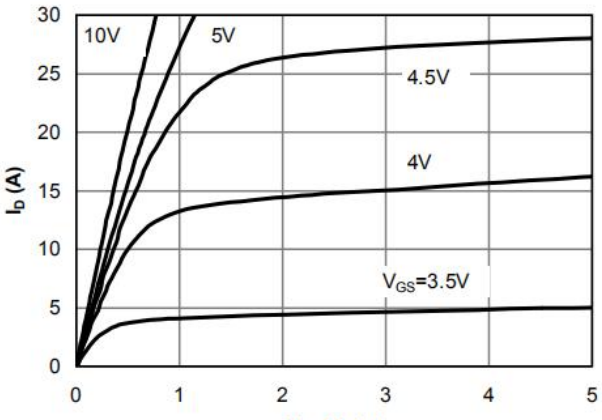


Fig 1: On-Region Characteristics

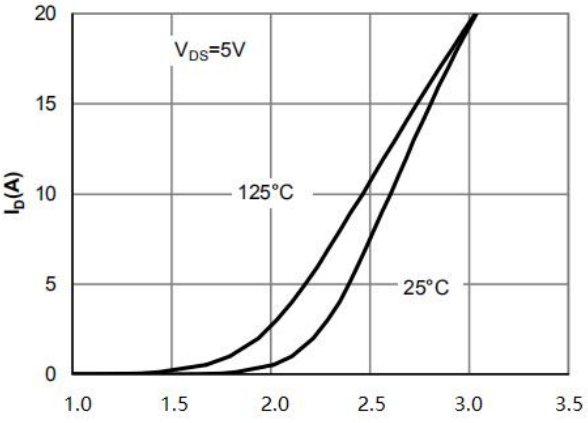


Figure 2: Transfer Characteristics

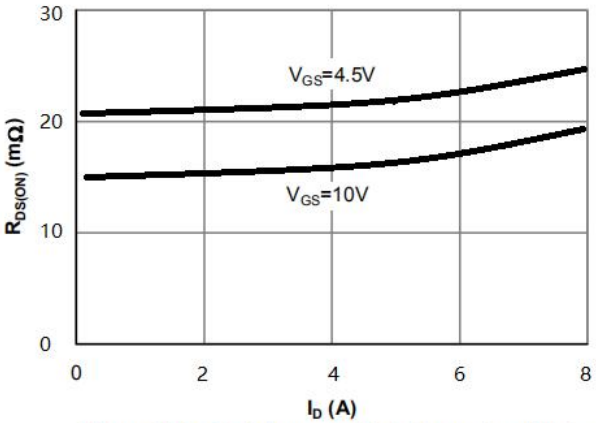


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

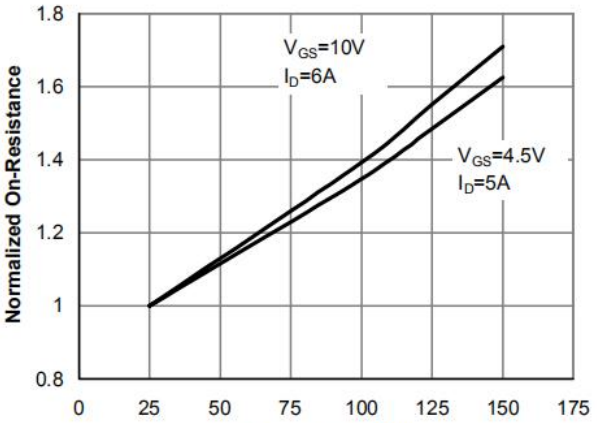


Figure 4: On-Resistance vs. Junction Temperature

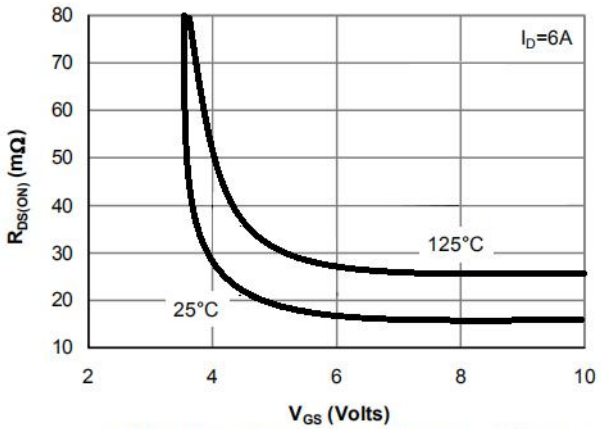


Figure 5: On-Resistance vs. Gate-Source Voltage

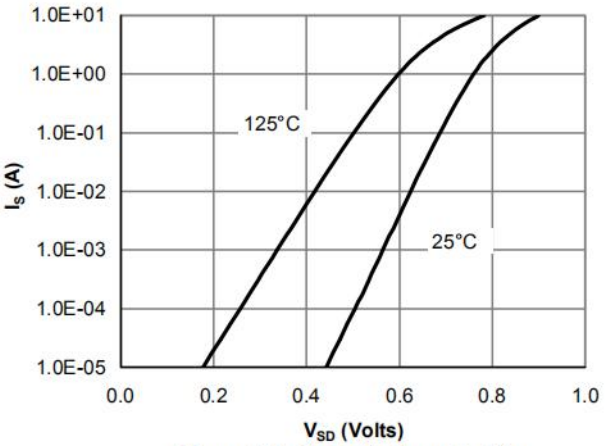


Figure 6: Body-Diode Characteristics

N-沟道电参数曲线图 / N-CHANNEL Electrical Characteristic Curve

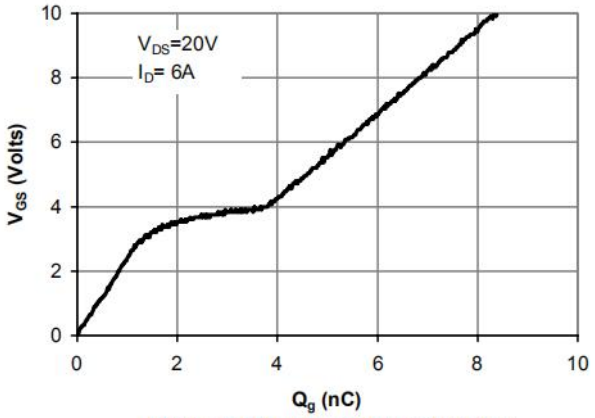


Figure 7: Gate-Charge Characteristics

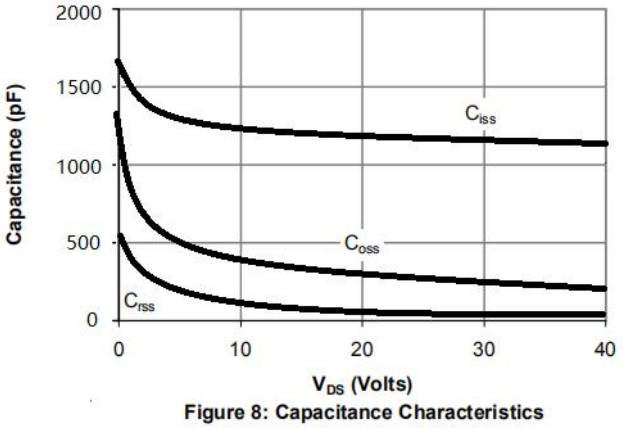


Figure 8: Capacitance Characteristics

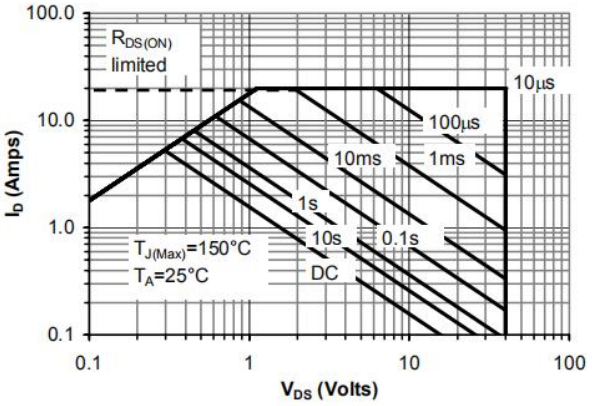


Figure 9: Maximum Forward Biased Safe Operating Area

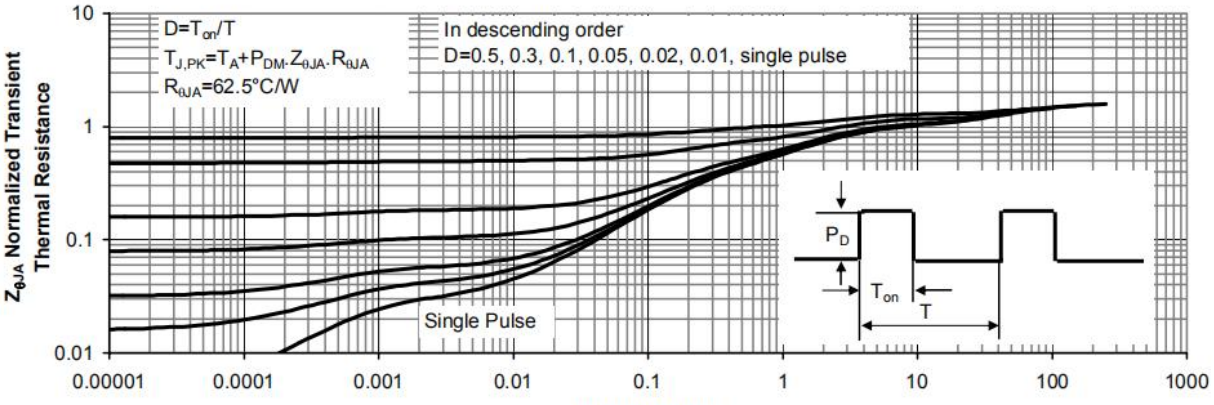


Figure 10 : Normalized Maximum Transient Thermal Impedance

P-沟道电性能参数/P-CHANNEL Electrical Characteristics(Ta=25℃)

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
		V_{DS}=-40V V_{GS}=0V T_J=55℃			-5.0	μA
Gate-Body leakage current	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1.0	-1.6	-3.0	V
On state drain current	$I_{D(on)}$	V_{DS}=-5V V_{GS}=-10V	6			A
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=-10V I_D=-5.0A		38	45	mΩ
		V_{GS}=-4.5V I_D=-2.0A		49	63	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-5.0V I_D=-4.8A		13		S
Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=-1.0A		-0.76	-1.0	V
Input Capacitance	C_{iss}	V_{DS}=-25V V_{GS}=0V f=1.0MHz		710		pF
Output Capacitance	C_{oss}			61		pF
Reverse Transfer Capacitance	C_{rss}			14		pF
Gate resistance	R_g	V_{DS}=0V V_{GS}=0V f=1.0MHz		2.1		Ω
Total Gate Charge(10V)	Q_g	V_{GS}=-10V V_{DS}=-20V I_D=-5.0A		13.6		nC
Total Gate Charge(4.5V)				6.8		nC
Gate-Source Charge	Q_{gs}			1.8		nC
Gate-Drain Charge	Q_{gd}			3.9		nC
Turn-On Delay Time	$t_{d(on)}$	V_{DS}=-20V V_{GS}=-10V R_L=4Ω R_{GEN}=3Ω		7.5		ns
Turn-On Rise Time	t_r			6.7		ns
Turn-Off Delay Time	$t_{d(off)}$			26		ns
Turn-Off Fall Time	t_f			11.2		ns

P-沟道电参数曲线图 / P-CHANNEL Electrical Characteristic Curve

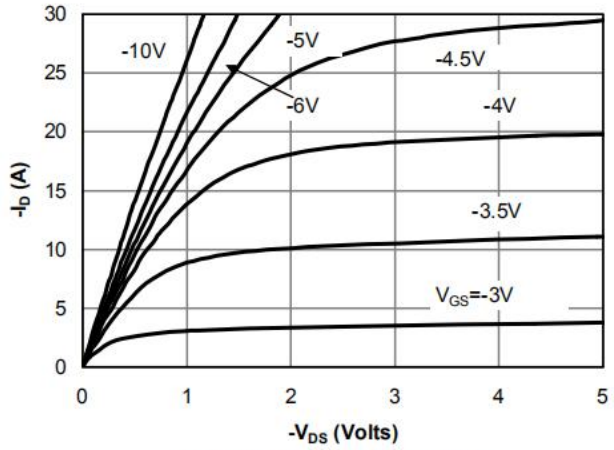


Fig 1: On-Region Characteristics

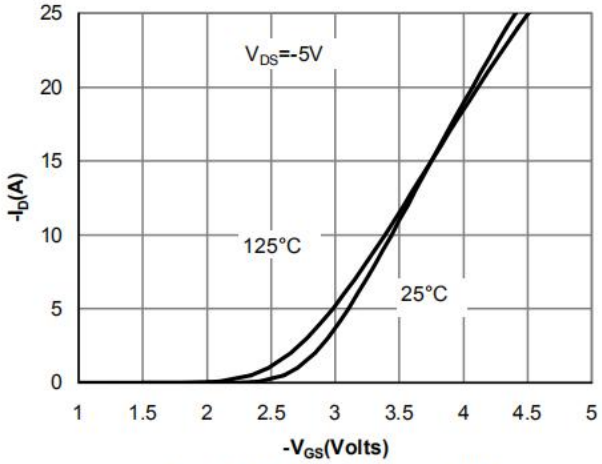


Figure 2: Transfer Characteristics

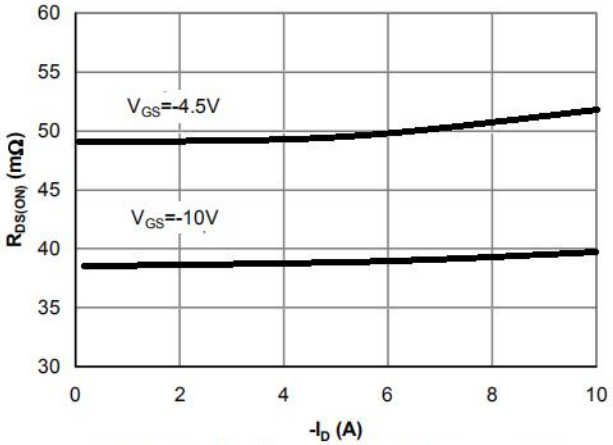


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

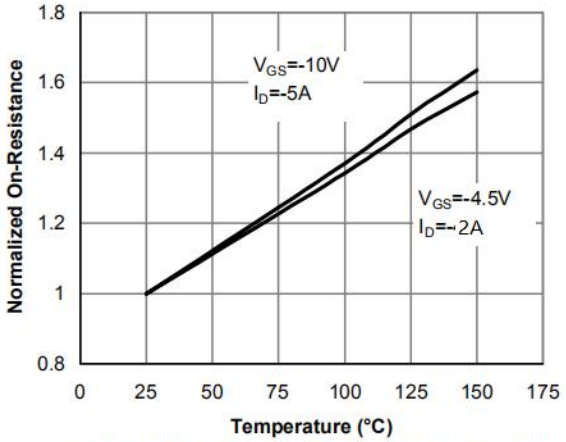


Figure 4: On-Resistance vs. Junction Temperature

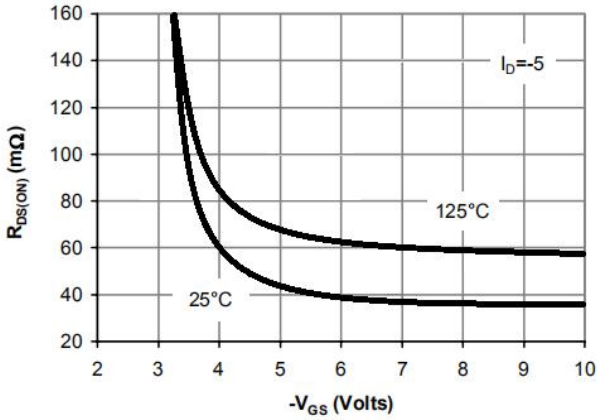


Figure 5: On-Resistance vs. Gate-Source Voltage

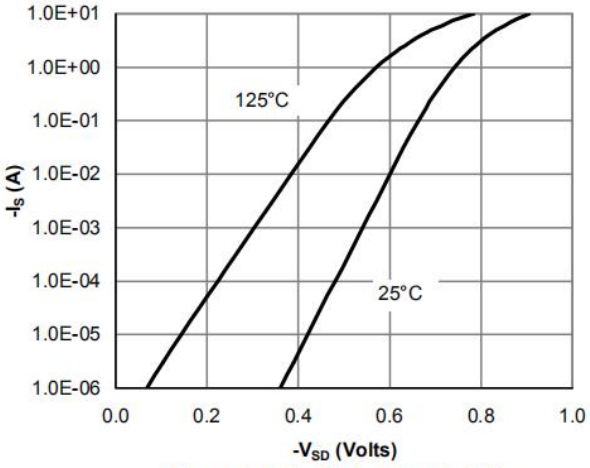


Figure 6: Body-Diode Characteristics

P-沟道电参数曲线图 / P-CHANNEL Electrical Characteristic Curve

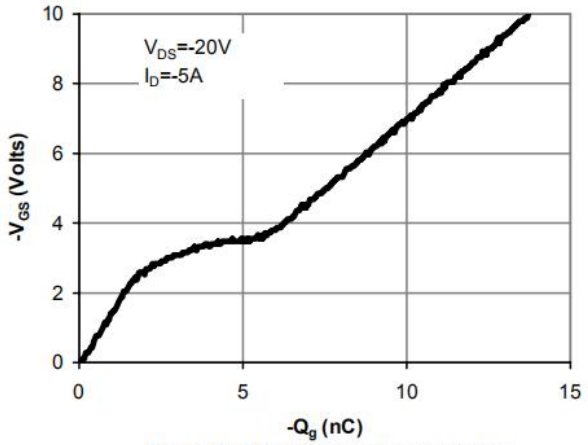


Figure 7: Gate-Charge Characteristics

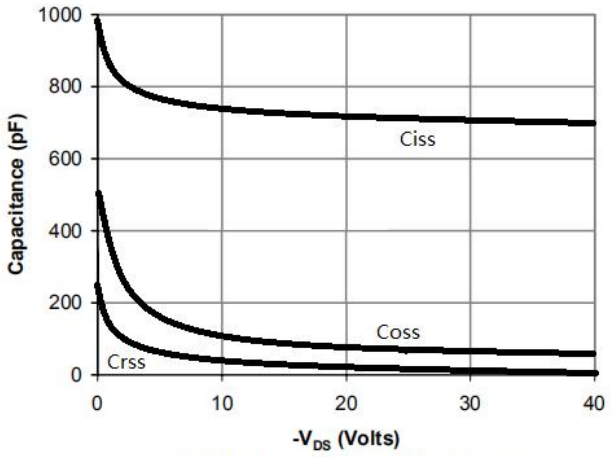


Figure 8: Capacitance Characteristics

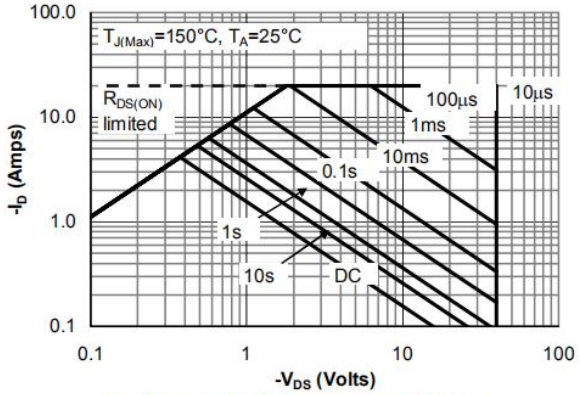


Figure 9: Maximum Forward Biased Safe Operating Area

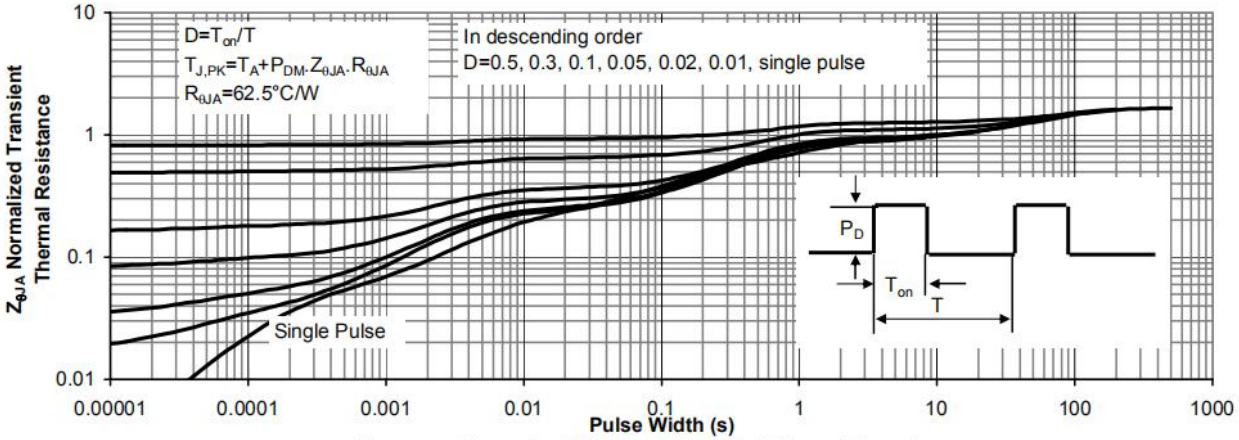
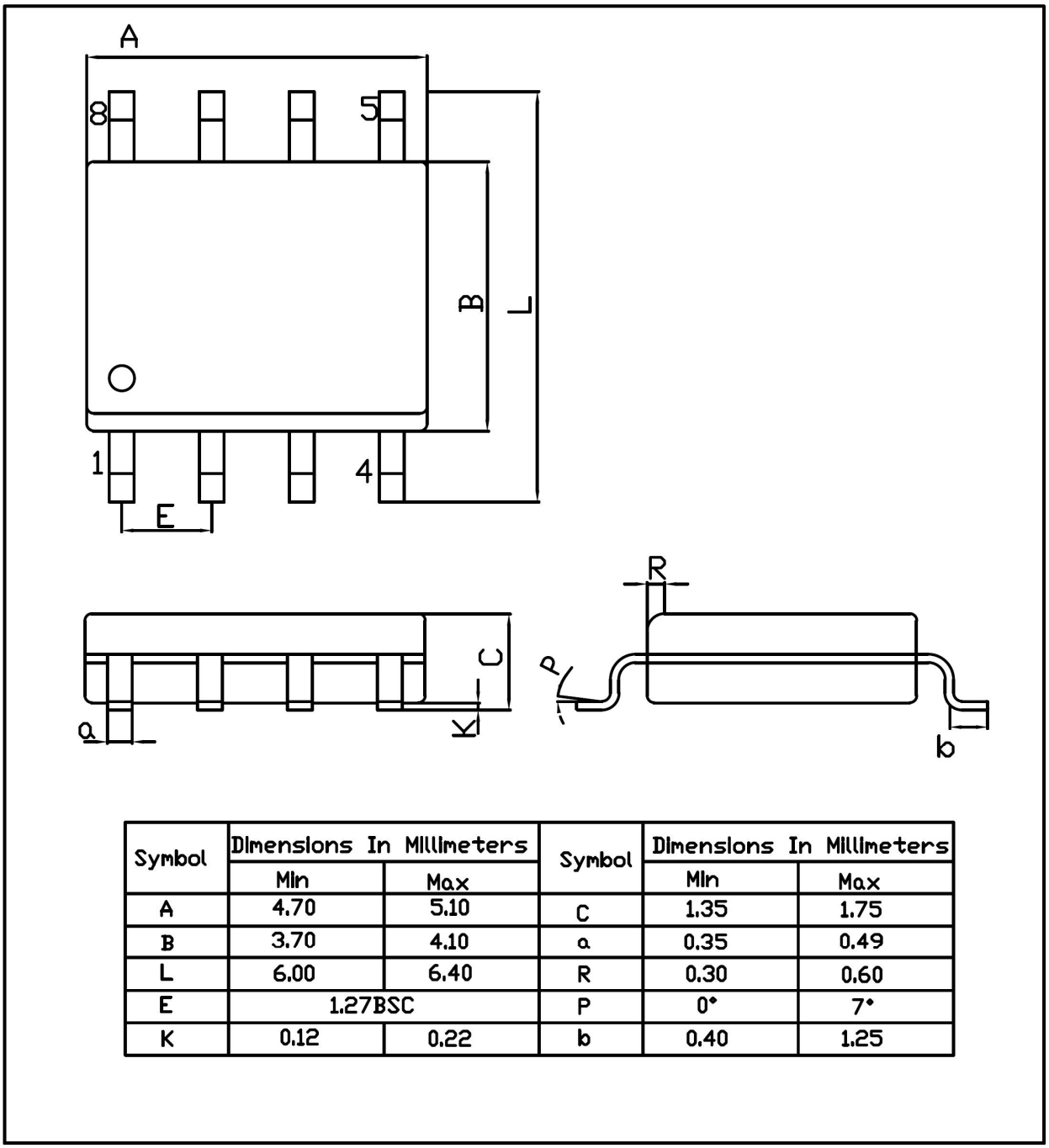


Figure 10 : Normalized Maximum Transient Thermal Impedance

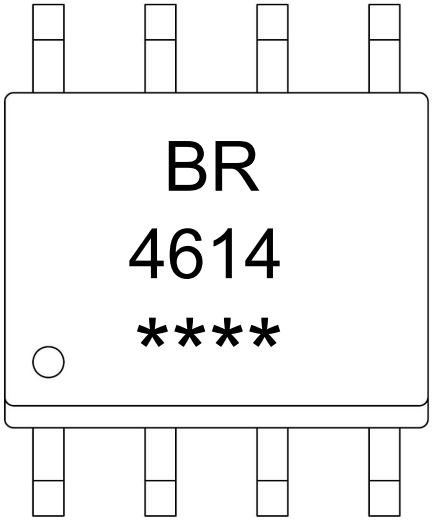
外形尺寸图 / Package Dimensions

SOP-8 Unit:mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	α	0.35	0.49
L	6.00	6.40	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25

印章说明 / Marking Instructions



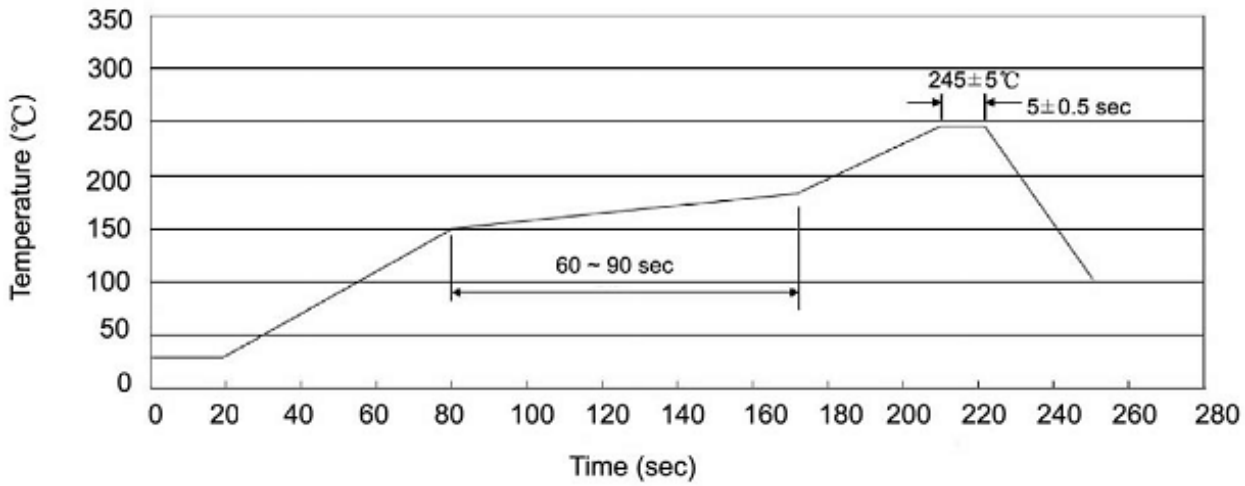
说明：

BR：	为公司代码
4614：	为型号代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code.
4614:	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℃，时间 60～90sec;

2、峰值温度 245±5℃，时间持续为 5±0.5sec;

3、焊接制程冷却速度为 2～10℃/sec.

Note:

1.Preheating:150~180℃, Time:60~90sec.

2.Peak Temp.:245±5℃, Duration:5±0.5sec.

3. Cooling Speed: 2~10℃/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5℃ 时间：10±1 sec. Temp.:260±5℃ 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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by Blue Rocket ***manufacturer:***

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E FDPF9N50NZ NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A 751625C IPS70R2K0CEAKMA1 BSF024N03LT3 G PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 IPSA70R950CEAKMA1 IPSA70R2K0CEAKMA1 STU5N65M6 C3M0021120D DMN6022SSD-13