



SOP-8 N

N-Channel Enhancement Mode Field Effect Transistor in a SOP-

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

Parameter		Symbol	Rating		Unit
			10Sec	Steady State	
Drain-Source Voltage		V _{DSS}	40		V
Gate-Source Voltage		V _{GS}	±20		V
Drain Current –Continuous ^A	T _A =25℃	I _D	13.5	10	A
	T _A =70℃		10.8	8.0	A
Pulsed Drain Current ^B		I _{DM}	120		A
Avalanche Current ^G		I _{AR}	23		A
Repetitive avalanche energy L=0.3mH ^G		E _{AR}	79		mJ
Power Dissipation for Single Operation ^A	T _A =25℃	P _D	3.1	1.7	W
	T _A =70℃		2.0	1.1	
Thermal Resistance, Junction-to-Ambient ^A	t≤10S	R _{θJA}	40		℃/ W
	Steady State	R _{θJA}	75		℃/ W
Thermal Resistance, Junction-to Lead ^A (Steady State)		R _{θJL}	24		℃/ W
Operating and Junction Temperature Range		T _j T _{stg}	-55~150		℃

电性能参数 / Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V} \quad I_D=250\mu\text{A}$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40\text{V} \quad V_{GS}=0\text{V}$			1.0	μA
		$V_{DS}=40\text{V} \quad V_{GS}=0\text{V} \quad T_J=55^\circ\text{C}$			5.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V} \quad V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS} \quad I_D=250\mu\text{A}$	1.0	1.4	2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V} \quad I_D=10\text{A}$		8.2	10	m Ω
		$V_{GS}=10\text{V} \quad I_D=10\text{A} \quad T_J=125^\circ\text{C}$		12.5	16	
		$V_{GS}=4.5\text{V} \quad I_D=8.0\text{A}$		10	12.5	
Diode Forward Voltage	V_{SD}	$I_S=1\text{A} \quad V_{GS}=0\text{V}$		0.72	1.0	V
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V} \quad I_D=5\text{A}$		10		S

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}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$		1500	1950	pF
Output Capacitance	C_{oss}			215		
Reverse Transfer Capacitance	C_{rss}			135		
Total Gate Charge(10V)	Q_g	$V_{DS}=20V$ $I_D=10A$ $V_{GS}=10V$		27.2	37	nC
Total Gate Charge(4.5V)				13.6	18	
Gate-Source Charge	Q_{gs}			4.5		
Gate-Drain Charge	Q_{gd}			6.4		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$	2.0	3.5	5.0	Ω
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=20V$ $R_L=2\Omega$ $V_{GS}=10V$ $R_{GEN}=3\Omega$		6.4		ns
Turn-On Rise Time	t_r			17.2		
Turn-Off Delay Time	$t_{d(off)}$			29.6		
Turn-Off Fall Time	t_f			16.8		
Continuous Drain-Source Diode Forward Current	I_S				2.5	A
Body Diode Reverse Recovery Time	t_{rr}	$I_F=10A$ $di/dt=100A/\mu s$		30	40	ns
Body Diode Reverse Recovery Charge	Q_{rr}			19		nC

Notes:

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The value in any given application depends on the user's specific board design.

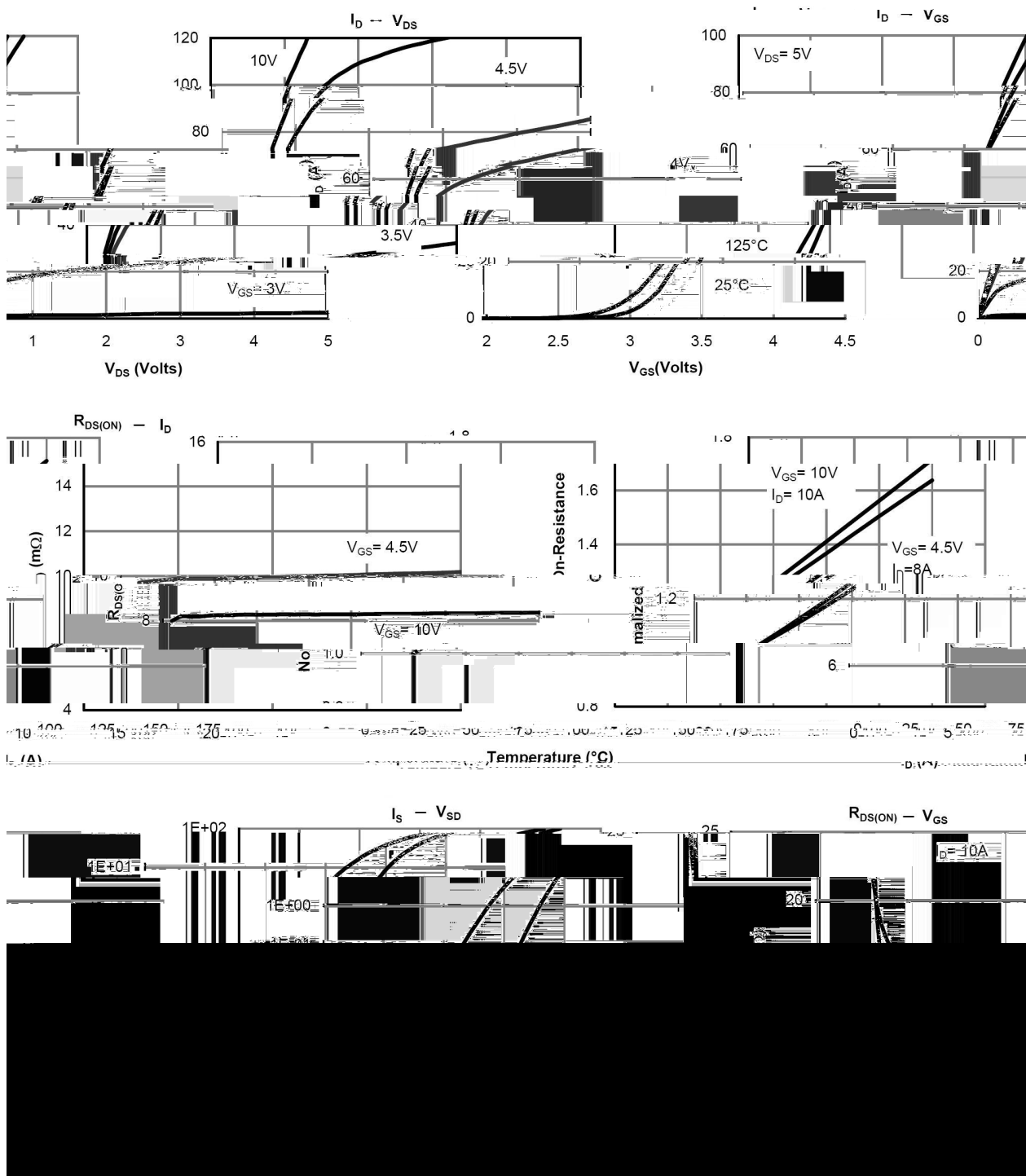
B: Repetitive rating, pulse width limited by junction temperature.

C. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

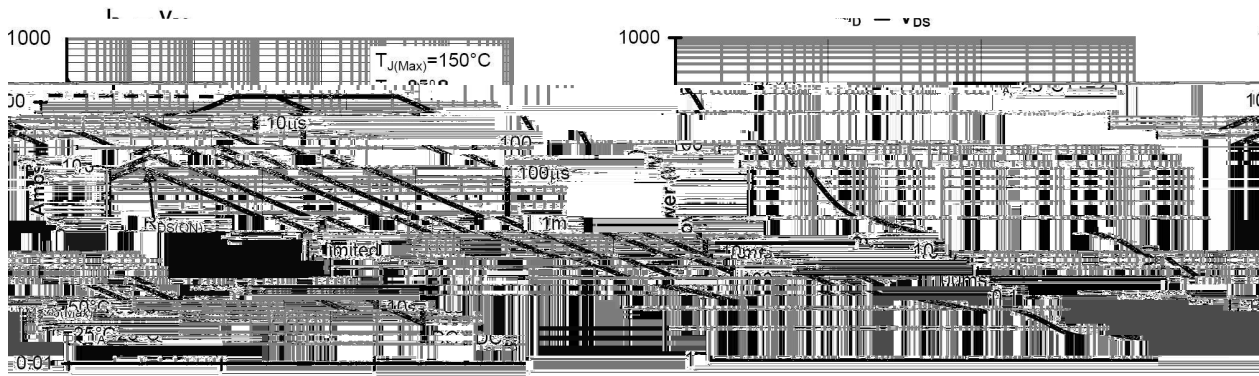
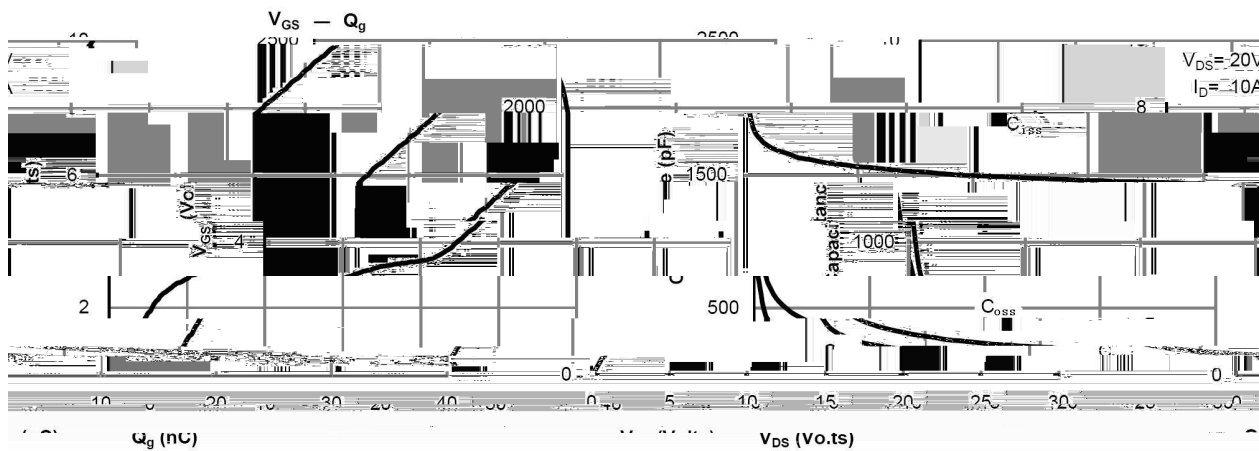
D. The static characteristics in Figures 1 to 6 are obtained using $t \leq 300\mu s$ pulses, duty cycle 0.5% max.

E. These tests are performed with the device mounted on 1 in2 FR-

电参数曲线图 / Electrical Characteristic Curve

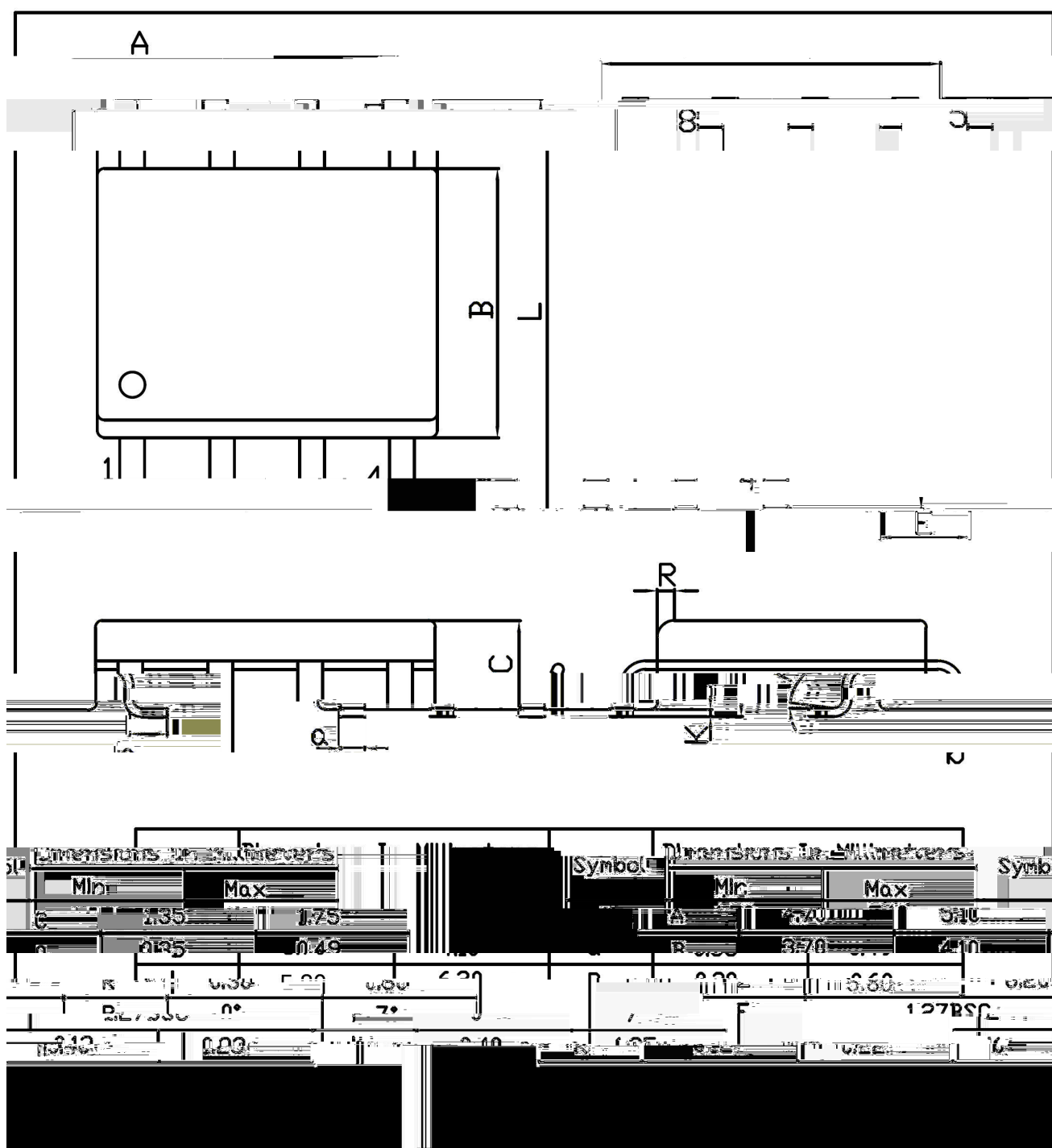


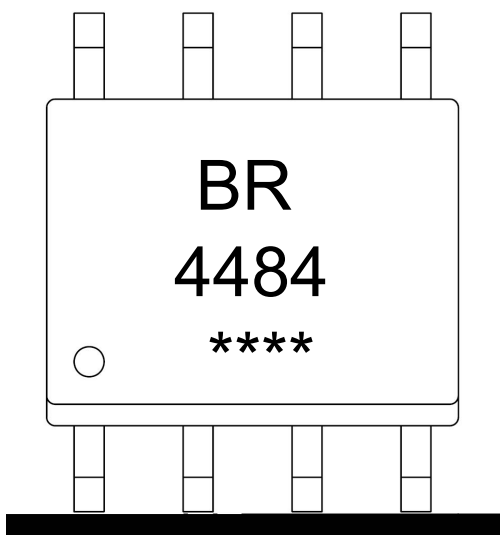
电参数曲线图 / Electrical Characteristic Curve



SOP-8

Unit:mm



印章说明 / Marking Instructions

说明：

BR： 为公司代码

4484： 为型号代码

****： 为生产批号代码，随生产批号变化

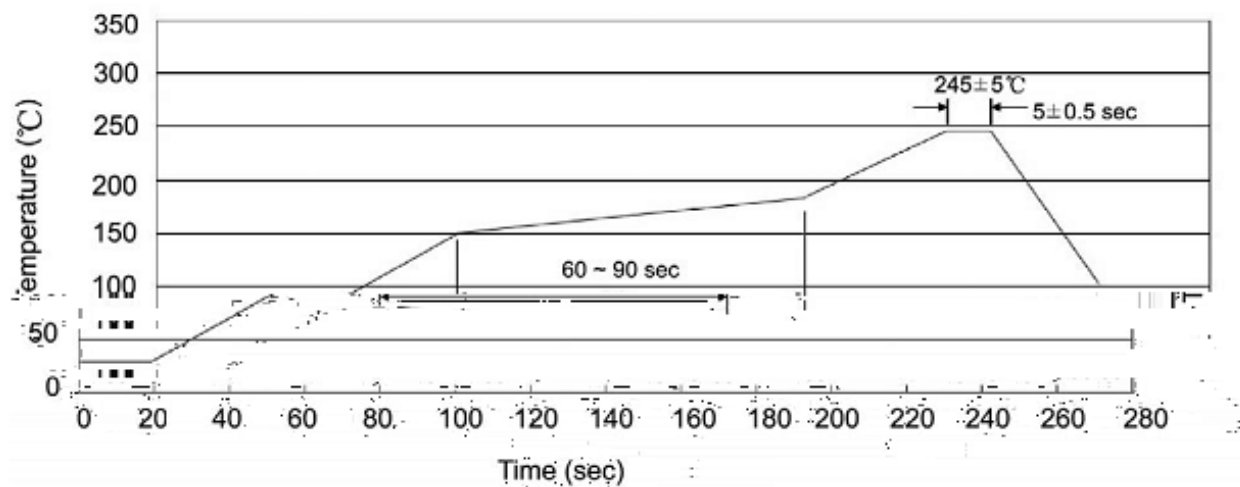
Note:

BR: Company Code.

4484: 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 $150 \sim 180^\circ\text{C}$ ，时间 $60 \sim 90\text{sec}$;
- 2、峰值温度 $245 \pm 5^\circ\text{C}$ ，时间持续为 $5 \pm 0.5\text{sec}$;
- 3、焊接制程冷却速度为

Note:

- 1.Preheating: $150 \sim 180^\circ\text{C}$, Time: $60 \sim 90\text{sec}$.
- 2.Peak Temp.: $245 \pm 5^\circ\text{C}$, Duration: $5 \pm 0.5\text{sec}$.