

描述 / Descriptions

TO-263-7LA 塑封封装 N 沟道场效应管。

N-CHANNEL MOSFET in a TO-263-7LA Plastic Package.

特征 / Features

$V_{DS}=100V$ $I_D=300A$

$R_{DS(on)}@10V \leq 1.1m\Omega$ (Type. $0.95m\Omega$)

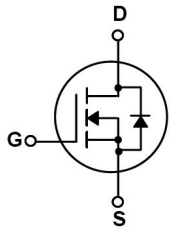
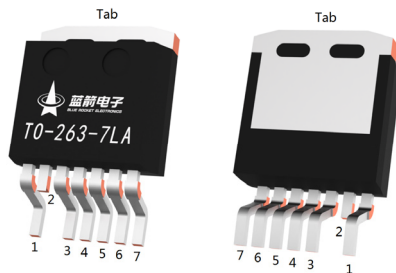
$R_{DS(on)}@6V \leq 2.5m\Omega$ (Type. $1.9m\Omega$)

无卤产品。HF Product.

用途 / Applications

BMS, 大功率逆变系统, 无人机, 轻型电动车。

BMS, High power inverter system, Drones, Light electric vehicles.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN1 : G PIN 2、3、4、5、6、7 : S Tab : 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}	100	V
Drain Current (DC)	$I_D(T_C=25^{\circ}C)$	300	A
	$I_D(T_C=100^{\circ}C)$	300	A
Pulsed Drain Current ^{*,**}	I_{DM}	1200	A
Gate-Source Voltage	V_{GS}	±20	V
Continuous-Source Current	$I_S(T_C=25^{\circ}C)$	300	A
Single Pulsed Avalanche Energy L=1.0mH	E_{AS}	2592	mJ
Total Power Dissipation	$P_D(T_C=25^{\circ}C)$	750	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 175	°C
Thermal Resistance-Junction to Ambient ^{**}	Steady-State $R_{\theta JA}$	44	°C/W
Thermal Resistance-Junction to Case ^{**}	Steady-State $R_{\theta JC}$	0.2	

Notes:

* : Pulse width ≤ 300 μs, duty cycle ≤ 2 %

** : Surface Mounted on minimum footprint pad area

*** : Limited by bonding wire

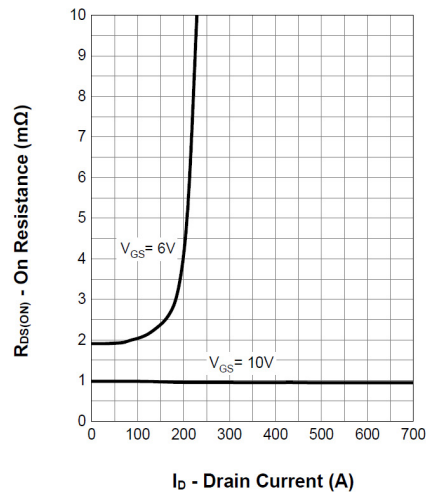
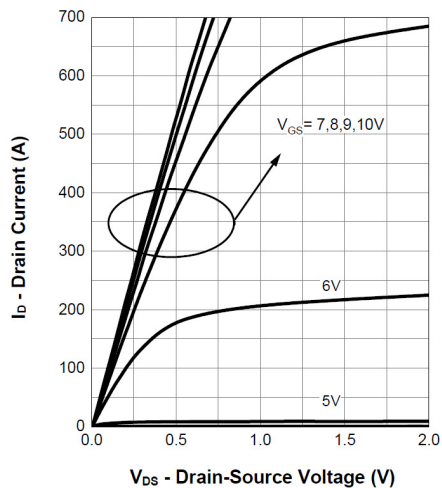
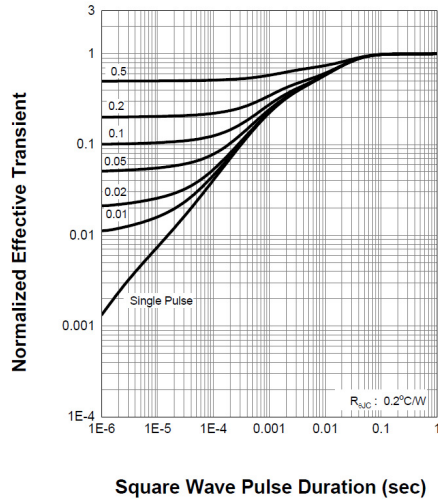
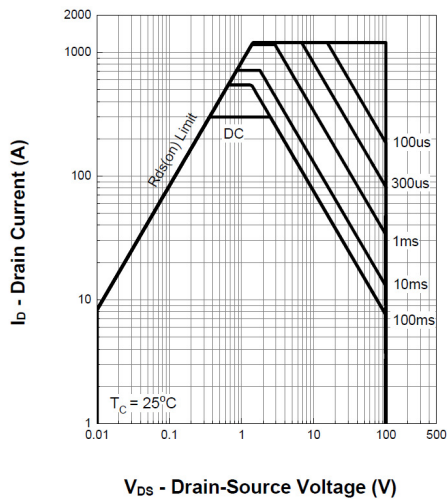
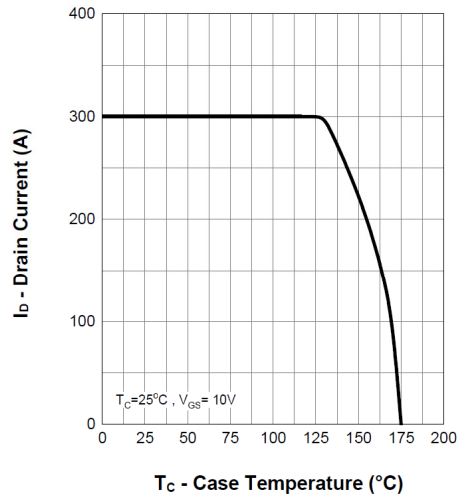
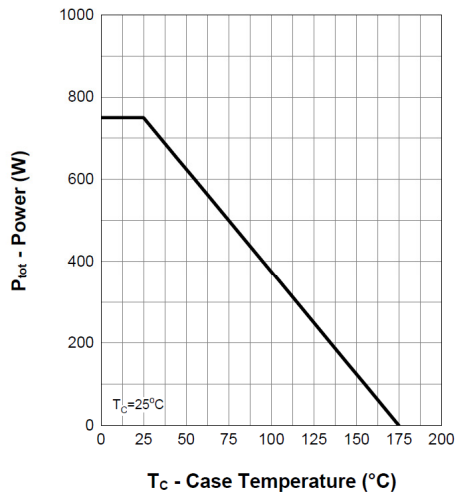
电性能参数 / Electrical Characteristics(Ta=25°C)

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}	$V_{GS}=0V$ $I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.5		4.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=50A$		0.95	1.1	mΩ
		$V_{GS}=6V$ $I_D=30A$		1.9	2.5	
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=50A$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 50 A, V_{GS} = 0 V$ $dI_{SD}/dt = 100 A/\mu s$		158		nS
Reverse Recovery Charge	Q_{rr}			444		nC
Input Capacitance	C_{iss}	$V_{DS}=50V$ $V_{GS}=0V$ $f=1MHz$		11829		pF
Output Capacitance	C_{oss}			4894		
Reverse Transfer Capacitance	C_{rss}			32		

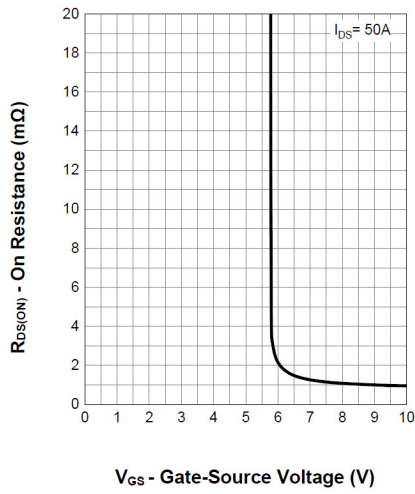
电性能参数 / Electrical Characteristics(Ta=25°C)

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
Total Gate Charge	Q_g	$V_{GS}=10V$ $V_{DS}=50V$ $I_D=50A$		176		nC
Gate Source Charge	Q_{gs}			75		
Gate Drain Charge	Q_{gd}			32		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=1\Omega$ $R_{GEN}=3.9\Omega$ $I_{DS}=50A$		46		nS
Turn-On Rise Time	t_r			94		
Turn-Off Delay Time	$t_{d(off)}$			69		
Turn-Off Fall Time	t_f			70		

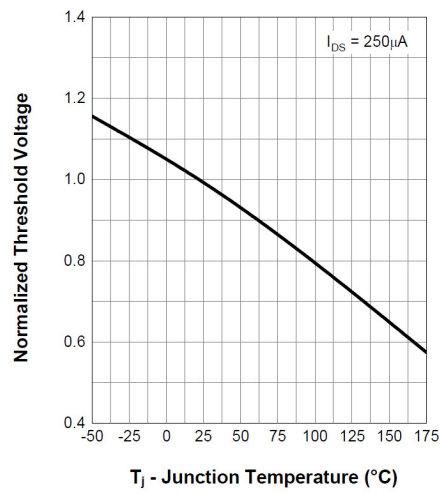
电参数曲线图 / Electrical Characteristic Curve



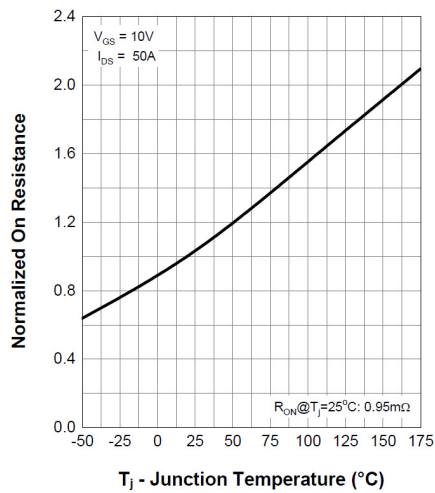
电参数曲线图 / Electrical Characteristic Curve



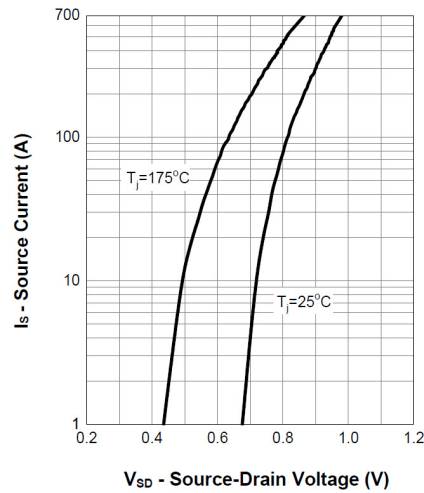
7. Transfer Characteristics



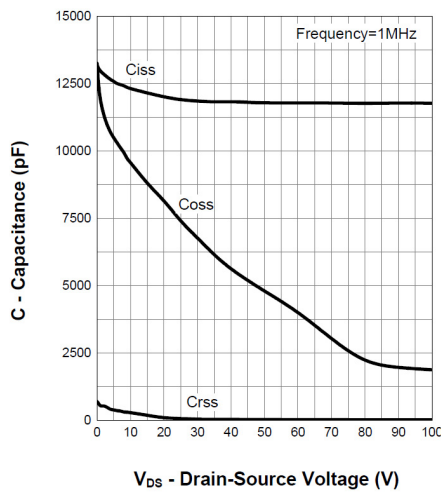
8. Normalized Threshold Voltage



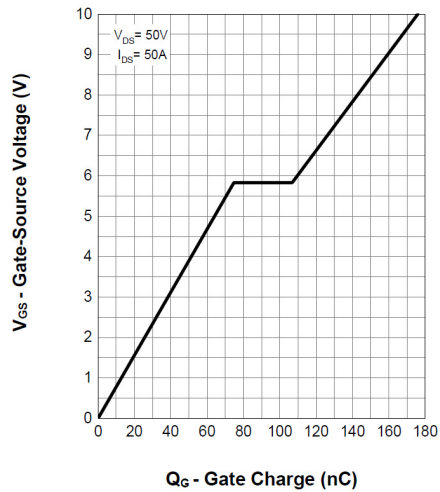
9. Normalized On Resistance



10. Diode Forward Current

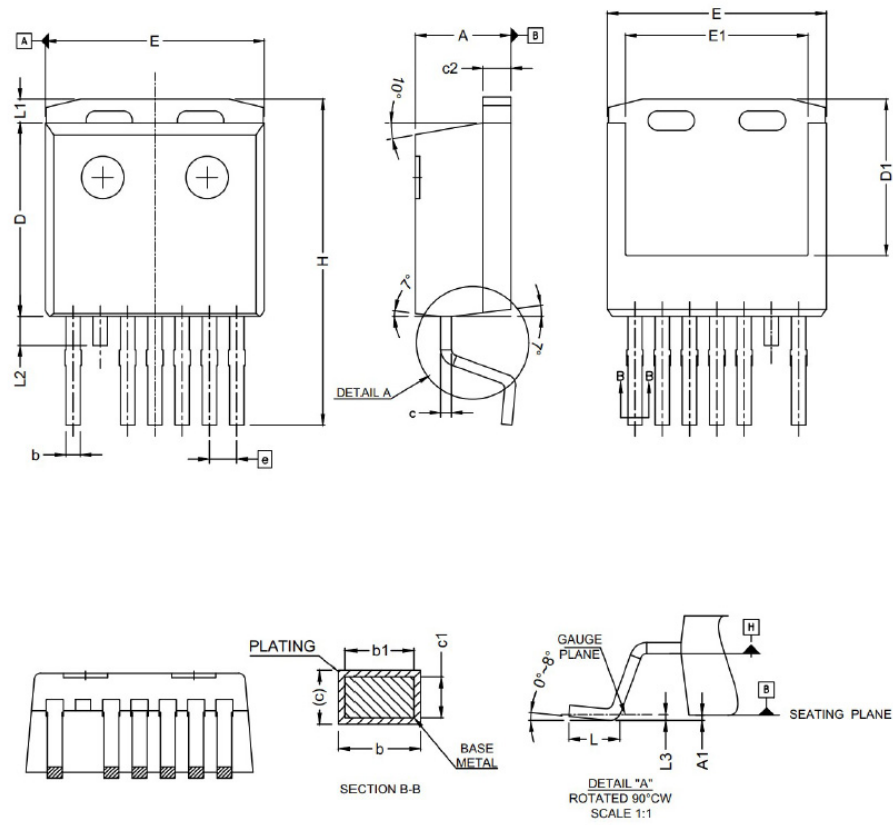


11. Capacitance



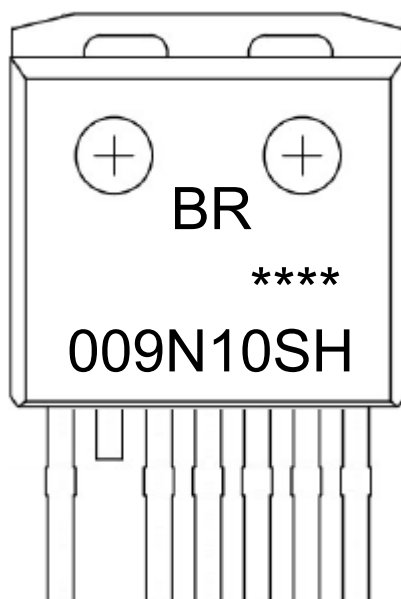
12. Gate Charge

外形尺寸图 / Package Dimensions



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	MIN.	MAX.		MIN.	MAX.
A	4.06	4.83	E	9.65	10.54
A1	-	0.25	E1	8.00	9.00
b	0.51	0.91	e	1.27 BSC	
b1	0.51	0.81	L	1.78	2.79
c	0.38	0.74	L1	-	1.68
c1	0.38	0.58	L2	-	1.78
c2	1.14	1.65	L3	0.25BSC	
D	8.38	9.65	H	14.61	15.88
D1	6.86	7.42			

印章说明 / Marking Instructions



说明：

BR： 为公司代码

009N10SH： 为型号代码

****： 为生产批号代码，随生产批号变化

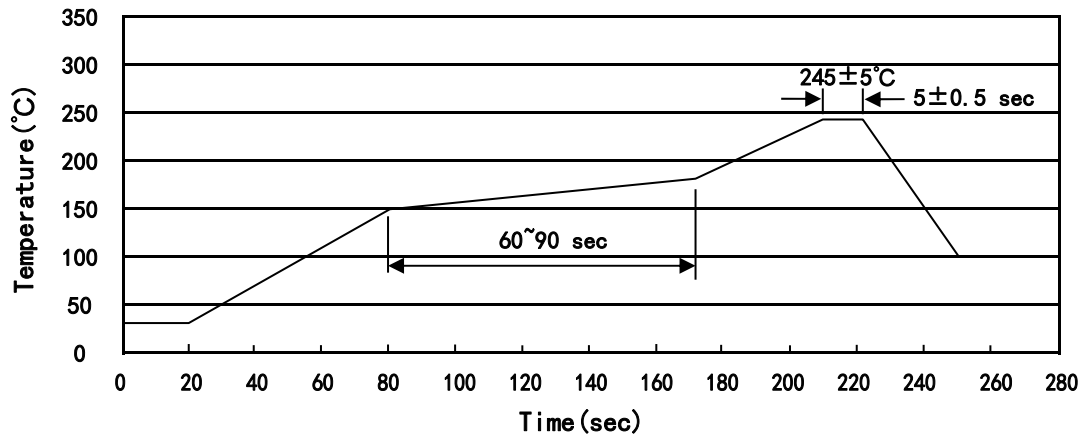
Note:

BR: Company Code

009N10SH: 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
TO-263-7LA	800	1	800	6	4,800	13" ×24	360×360×50	380×335×366

使用说明 / Notices

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