



# 3DD13009N

## 主要参数 MAIN CHARACTERISTICS

$I_C$	12A
$V_{CEO}$	400V
$P_C(TO-220C)$	100W
$P_C(TO-3PN(B))$	120W

### 用途

- 节能灯
- 电子镇流器
- 高频开关电源
- 高频功率变换
- 一般功率放大电路

### APPLICATIONS

- Energy-saving light
- Electronic ballasts
- High frequency switching power supply
- High frequency power transform
- Commonly power amplifier

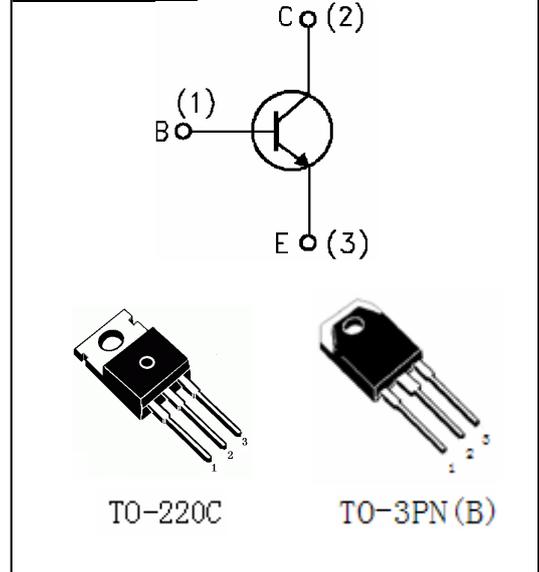
### 产品特性

- 高耐压
- 高电流容量
- 高开关速度
- 高可靠性
- 环保 (RoHS) 产品

### FEATURES

- High breakdown voltage
- High current capability
- High switching speed
- High reliability
- RoHS product

## 封装 Package



## 订货信息 ORDER MESSAGE

订货型号 Order codes	印记 Marking	无卤素 Halogen Free	封装 Package	包装 Packaging
3DD13009N-O-C-N-B	D13009N	否 NO	TO-220C	条管 Tube
3DD13009N-O-AN-N-B	D13009N	否 NO	TO-3PN	条管 Tube
3DD13009N-O-AB-N-B	D13009N	否 NO	TO-3PB	条管 Tube





## 绝对最大额定值 ABSOLUTE RATINGS (Tc=25°C)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
集电极—发射极直流电压 Collector- Emitter Voltage (V <sub>BE</sub> =0)	V <sub>CES</sub>	700	V
集电极—发射极直流电压 Collector- Emitter Voltage (I <sub>B</sub> =0)	V <sub>CEO</sub>	400	V
发射极—基极直流电压 Emitter-Base Voltage	V <sub>EBO</sub>	9	V
最大集电极直流电流 Collector Current (DC)	I <sub>C</sub>	12	A
最大集电极脉冲电流 Collector Current (pulse)	I <sub>CP</sub>	24	A
最大基极直流电流 Base Current (DC)	I <sub>B</sub>	6	A
最大基极脉冲电流 Base Current (pulse)	I <sub>BP</sub>	12	A
最大集电极耗散功率 Total Dissipation (TO-220C)	P <sub>C</sub>	100	W
最大集电极耗散功率 Total Dissipation (TO-3PN(B))	P <sub>C</sub>	120	W
最高结温 Junction Temperature	T <sub>J</sub>	150	°C
贮存温度 Storage Temperature	T <sub>stg</sub>	-55~+150	°C

注: pulse电流宽度为小于5ms的非重复单脉冲。 Pulse Test: Pulse Width = 5.0 ms, Duty Cycle < 10%.

## 电特性 ELECTRICAL CHARACTERISTIC

项 目 Parameter	测试条件 Tests conditions	最小值 Value(min)	典型值 Value(typ)	最大值 Value(max)	单 位 Unit
V(BR) <sub>CEO</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0	400	-	-	V
V(BR) <sub>CBO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	700	-	-	V
V(BR) <sub>EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	9	-	-	V
I <sub>CBO</sub>	V <sub>CB</sub> =700V, I <sub>E</sub> =0	-	-	100	μA
I <sub>CEO</sub>	V <sub>CE</sub> =400V, I <sub>B</sub> =0	-	-	50	μA
I <sub>EBO</sub>	V <sub>EB</sub> =9V, I <sub>C</sub> =0	-	-	10	μA
Hfe(1)	V <sub>CE</sub> =5V, I <sub>C</sub> =5A	8	-	40	
Hfe(2)	V <sub>CE</sub> =5V, I <sub>C</sub> =8A	8	-	-	
V <sub>CE(sat)</sub>	I <sub>C</sub> =8A, I <sub>B</sub> =1.6A	-	-	1.5	V
V <sub>BE(sat)</sub>	I <sub>C</sub> =8A, I <sub>B</sub> =1.6A	-	-	1.6	V
t <sub>f</sub>	V <sub>CC</sub> =24V I <sub>C</sub> =5A, I <sub>B1</sub> =-I <sub>B2</sub> =1A	-	-	0.7	μS
t <sub>s</sub>		-	-	5	μS
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A	4	-	-	MHz

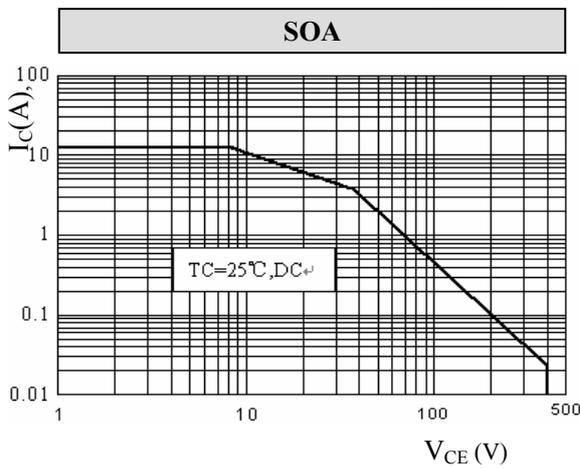
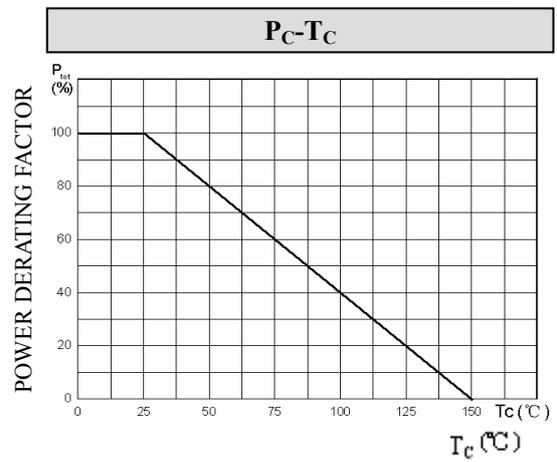
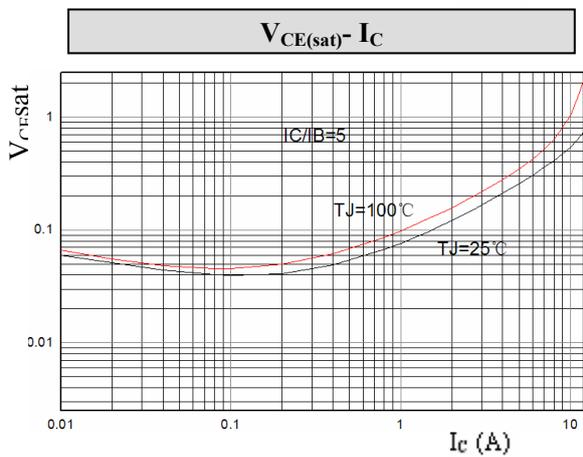
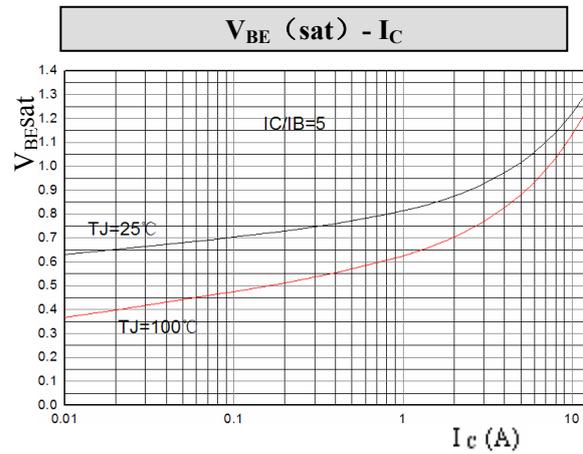
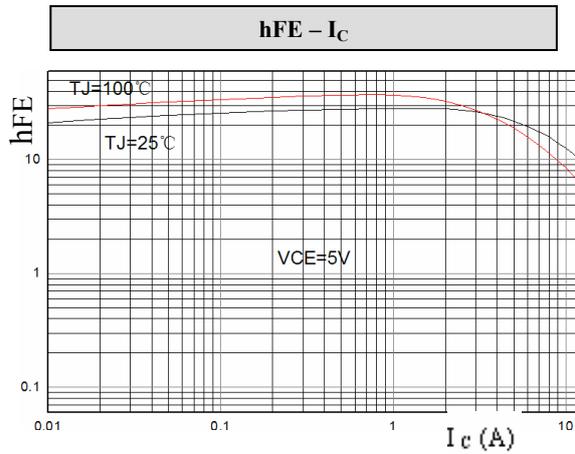
## 热特性 THERMAL CHARACTERISTIC

项 目 Parameter	符 号 Symbol	最小值 Value(min)	最大值 Value(max)	单 位 Unit
结到管壳的热阻 TO-220C Thermal Resistance Junction Case TO-220C	R <sub>th(j-c)</sub>	-	1.25	°C/W
结到管壳的热阻 TO-3PN(B) Thermal Resistance Junction Case TO-3PN(B)	R <sub>th(j-c)</sub>	-	1.05	°C/W



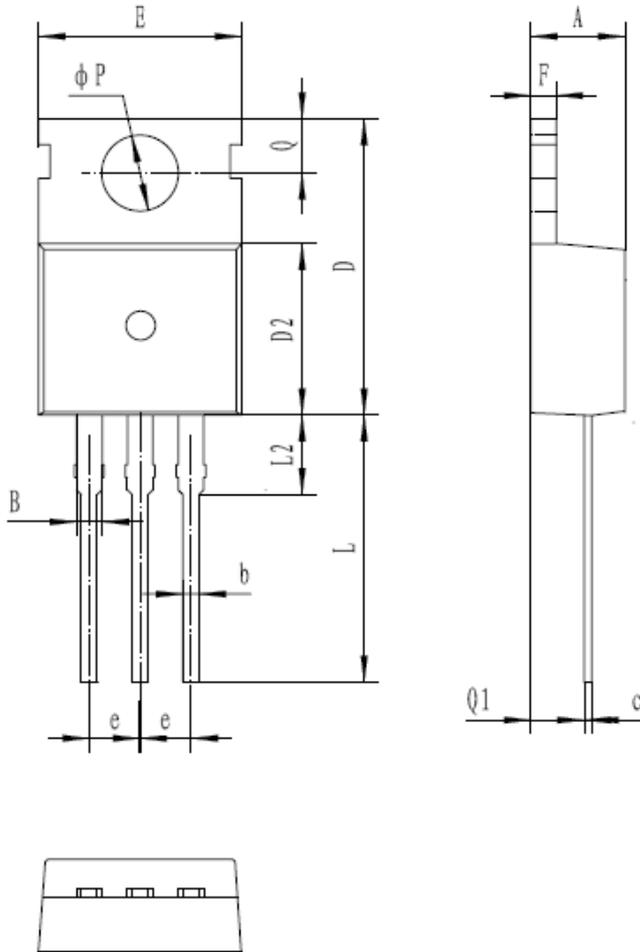


特征曲线 ELECTRICAL CHARACTERISTICS (curves)





## TO-220C

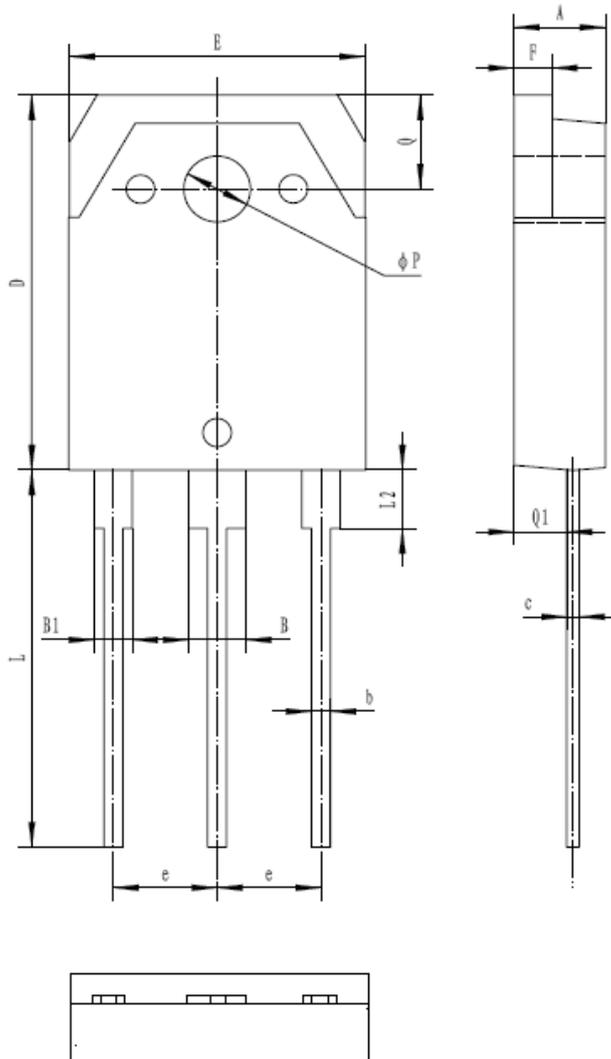


符号 symbol	MIN	MAX
A	4.30	4.70
B	1.10	1.40
b	0.70	0.95
c	0.40	0.65
D	15.20	16.20
D2	9.00	9.40
E	9.70	10.10
e	2.39	2.69
F	1.25	1.40
L	12.60	13.60
L2	2.80	3.20
Q	2.60	3.00
Q1	2.20	2.60
P	3.50	3.80





## TO-3PN

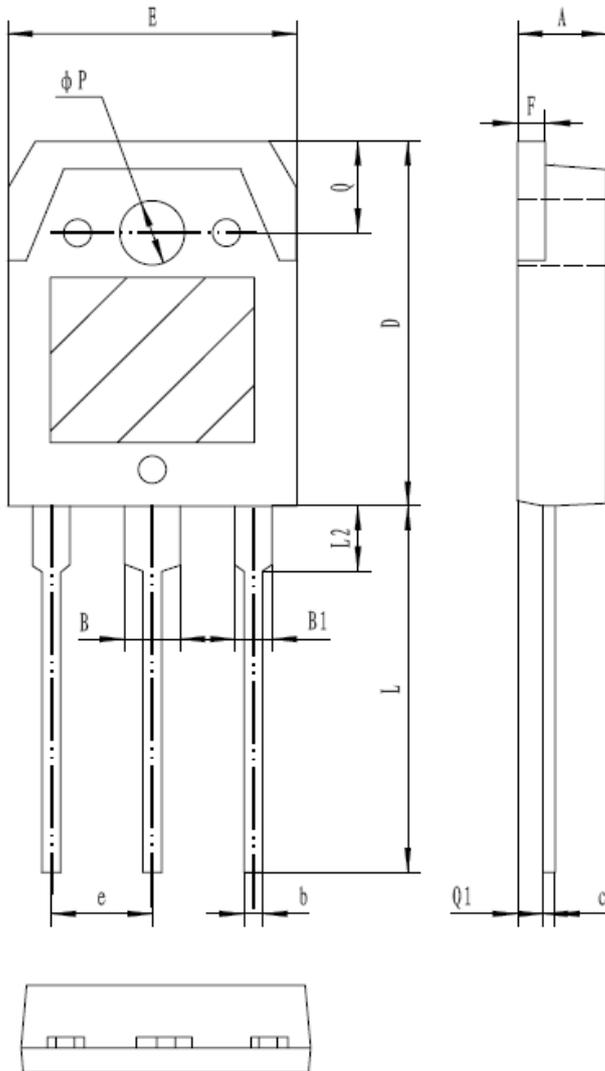


符号 symbol	MIN	MAX
A	4.55	4.95
B	2.90	3.20
B1	1.90	2.20
b	0.90	1.10
c	0.40	0.80
D	19.70	20.10
E	15.30	15.70
e	5.45(TYP)	
F	1.90	2.10
L	19.50	20.50
L2	3.05	3.25
Q	4.90	5.10
Q1	2.60	3.00
P	3.30	3.70





## TO-3PB



符号 symbol	MIN	MAX
A	4.60	5.00
B	2.90	3.20
B1	1.90	2.20
b	0.90	1.10
c	0.50	0.70
D	19.40	20.40
E	15.40	15.80
e	5.45(TYP)	
F	1.40	1.60
L	19.50	20.50
L2	3.30	3.70
Q	4.90	5.10
Q1	1.30	1.50
P	3.10	3.50



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**附录 (Appendix) : 修订记录 (Revision History)**

日期 Date	旧版本 Last Rev.	新版本 New Rev.	修订内容 Description of Changes
2010-7-8		201007A	新版本

