Suntac ELECTRONIC CORP

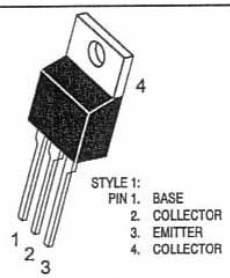
STC13009

NPN POWER TRANSISTORS

- **FEATURES:** ■HIGH SPEED SWITCHING ■WIDE SOA ■HIGH VOLTAGE CAPABILITY
- **APPLICATION:** ■FLUORESCENT LAMP ■ELECTRONIC BALLAST ■ELECTRONIC TRANSFORMER ■SWITCH MODE POWER SUPPLY

● Absolute Maximum Ratings（Tc=25°C） TO-220

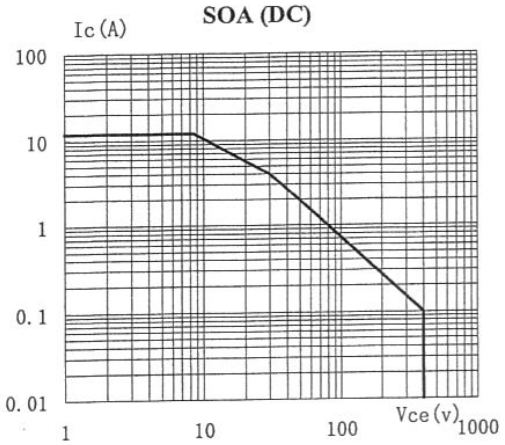
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter- Base Voltage	V_{EBO}	9	V
Collector Current	I_C	12	A
Total Power Dissipation	P_C	100	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-65-150	°C

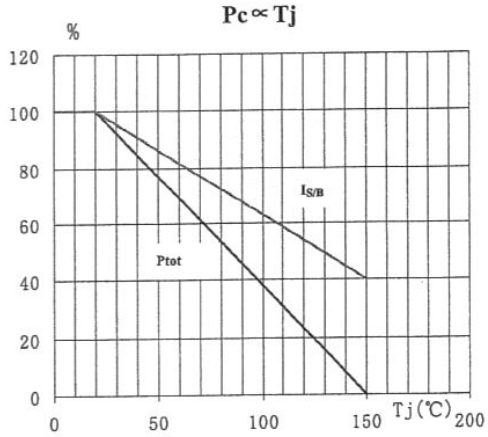


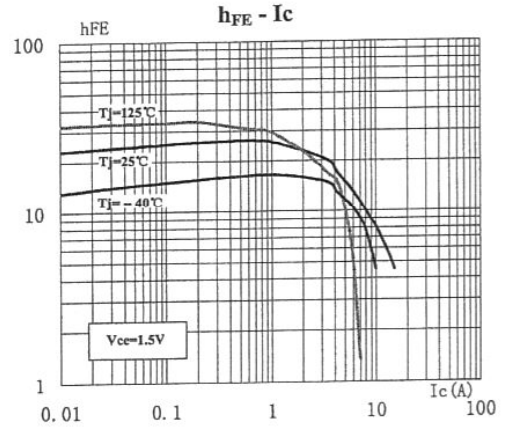
TO-220

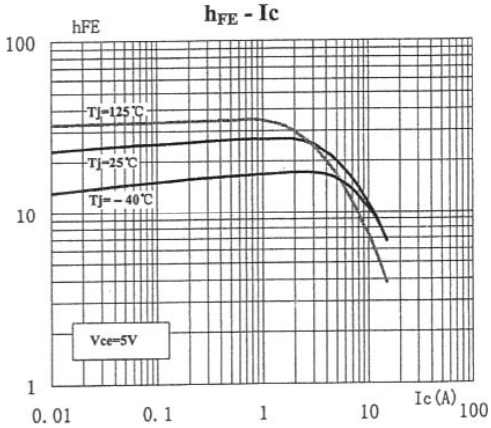
● Electronic Characteristics（Tc=25°C）

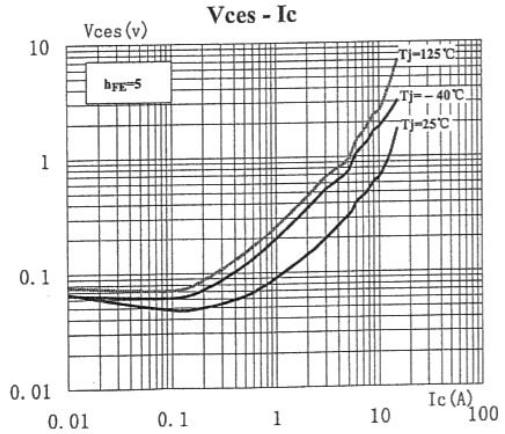
CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector-Base Cutoff Current	I_{CBO}	V_{CB}=700V		100	μA
Collector-Emitter Cutoff Current	I_{CEO}	V_{CE}=400V,I_B=0		250	μA
Collector-Emitter Voltage	V_{CEO}	I_C=10mA,I_B=0	400		V
Emitter -Base Voltage	V_{EBO}	I_E=1mA,I_C=0	9		V
Collector-Emitter Saturation Voltage	Vces	I_C=5.0A,I_B=1.0A		1.0	V
		I_C=8.0A,I_B=1.6A		1.5	
		I_C=12A,I_B=3.0A		3.0	
Base-Emitter Saturation Voltage	Vbes	I_C=5.0A,I_B=1.0A		1.5	V
DC Current Gain	h_{FE}	V_{CE}=5V,I_C=10A	8		
		V_{CE}=5V,I_C=5.0A	10	40	
		V_{CE}=5V,I_C=8.0A	8		
Storage Time	t_s	V_{CC}=250V, I_C=5I_B I_{B1}=I_{B2}=1A		3.5	μS
Falling Time	t_f			0.8	

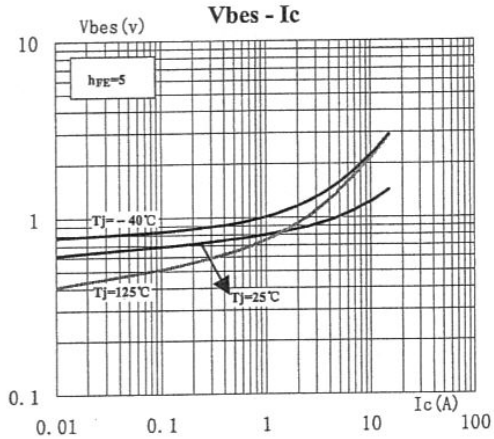

SOA (DC)
Ic (A)
100
10
1
0. 1
0. 01
1
10
100
Vce (v)
1000


Pc ∝ Tj
%
120
100
80
60
40
20
0
IS/B
Ptot
0
50
100
150
Tj (℃)
200

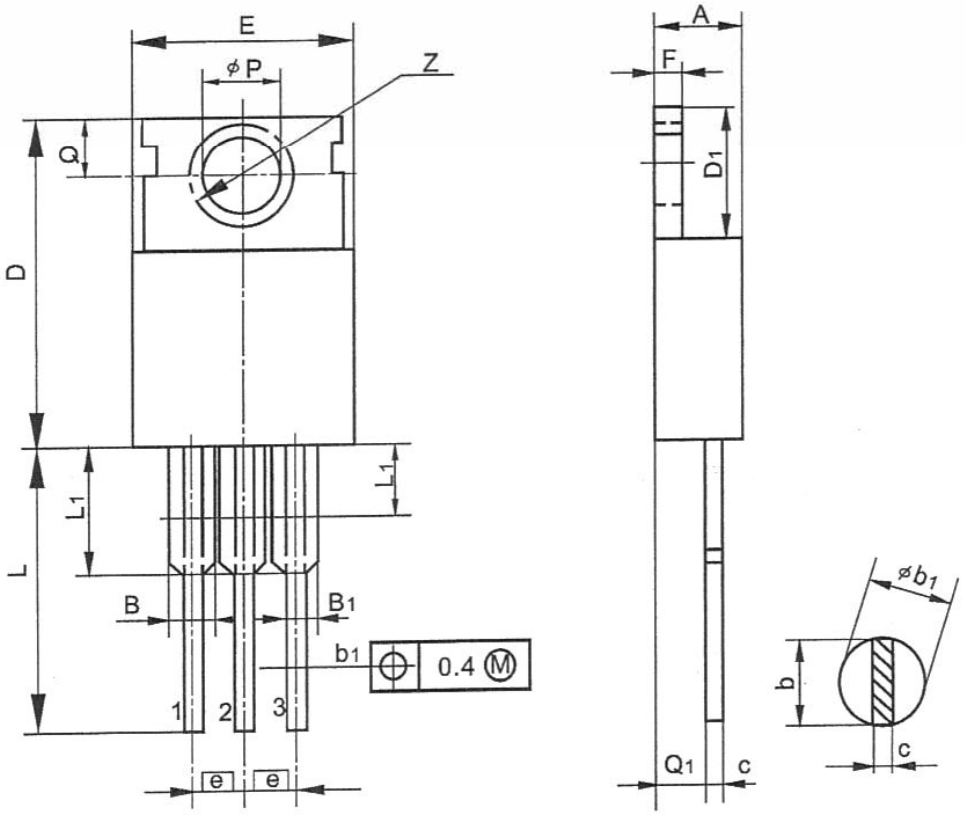

hFE - Ic
hFE
100
10
1
Tj=125℃
Tj=25℃
Tj= - 40℃
Vce=1.5V
0. 01
0. 1
1
10
Ic (A)
100


hFE - Ic
hFE
100
10
1
Tj=125℃
Tj=25℃
Tj= - 40℃
Vce=5V
0. 01
0. 1
1
10
Ic (A)
100


Vces - Ic
Vces (v)
10
1
0. 1
0. 01
hFE=5
Tj=125℃
Tj= - 40℃
Tj=25℃
0. 01
0. 1
1
10
Ic (A)
100


Vbes - Ic
Vbes (v)
10
1
0. 1
hFE=5
Tj= - 40℃
Tj=125℃
Tj=25℃
0. 01
0. 1
1
10
Ic (A)
100

TO-220 MECHANICAL DATA

UNIT：mm

SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	3.5		4.8	e		2.54	
B			2.4	F	1.1		1.4
B1			1.8	L	12.5		14.5
b	0.6			L1			3.5
ϕb1			1.2	L2			6.3
c	0.4			ϕP			
D			16.5	Q	2.5		3.1
D1	5.9		6.9	Q1	2.0		2.8
E			10.7	Z	3.0