



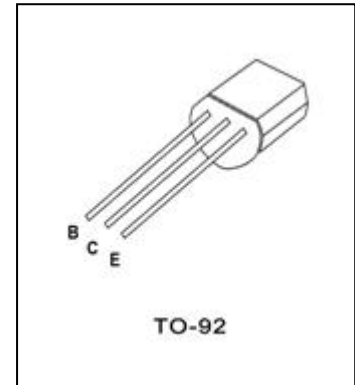
# HE13001S

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

- **FEATURES:** ■ HIGH VOLTAGE CAPABILITY ■ HIGH SPEED SWITCHING ■ WIDE SOA  
 ● **APPLICATION:** ■ FLUORESCENT LAMP ■ ELECTRONIC BALLAST

## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	600	V
Collector-Emitter Voltage	$V_{CE0}$	400	V
Emitter- Base Voltage	$V_{EB0}$	9	V
Collector Current	$I_C$	0.18	A
Total Power Dissipation	$P_C$	5	W
Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-65-150	°C



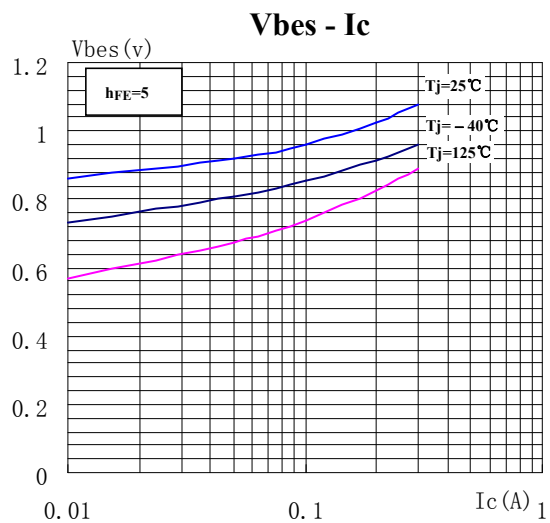
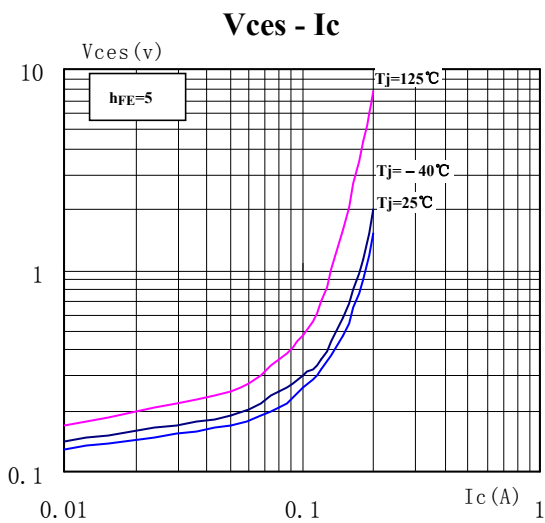
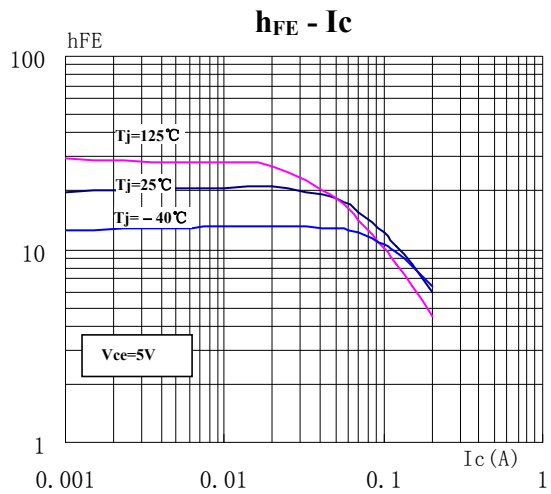
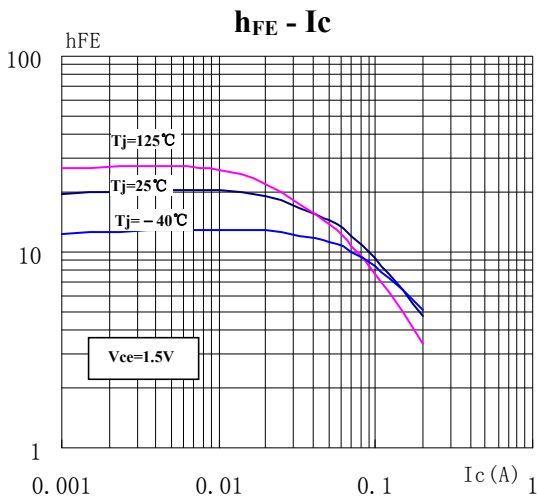
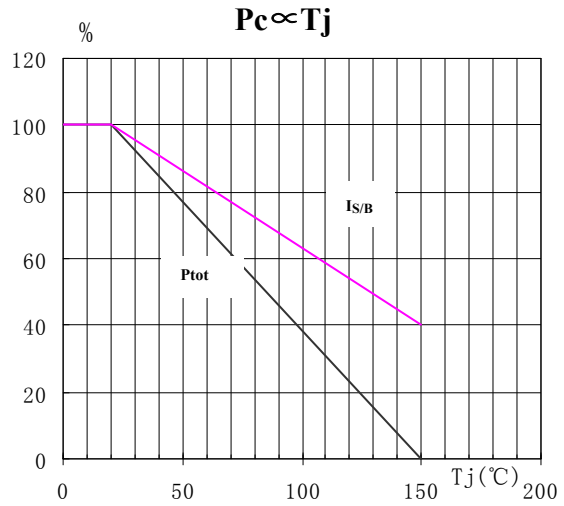
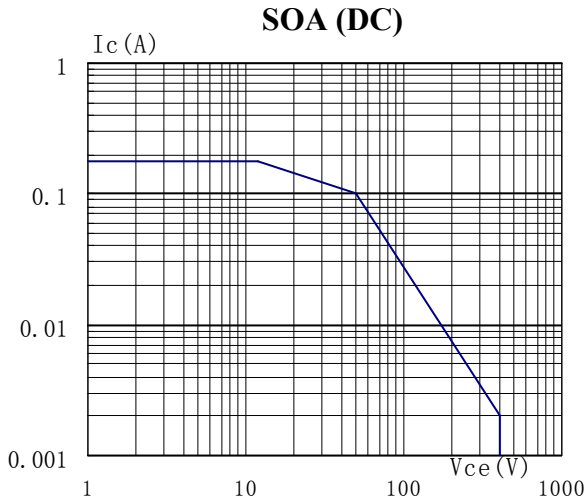
## Electronic Characteristics (T<sub>j</sub>=25°C Unless Otherwise Specified)

Parameter	Symbol	Test Conditons	Min	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CB0}$	$I_C=1mA, I_E=0$	600		V
Collector-Emitter Breakdown Voltage	$BV_{CE0}$	$I_C=1mA, I_B=0$	400		V
Emitter-Base Breakdown Voltage	$BV_{EB0}$	$I_E=1mA, I_C=0$	9		V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=600V, I_E=0$		10	μA
Collector-Emitter Cutoff Current	$I_{CEO}$	$V_{CE}=400V, I_B=0$		20	μA
Emitter –Base Cutoff Current	$I_{EBO}$	$V_{EB}=9V, I_C=0$		20	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=20V, I_C=20mA$	15	30	
DC Current Gain	$h_{FE(2)}$	$V_{CE}=5V, I_C=1mA$	9		
Collector-Emitter Saturation Voltage	$V_{CESAT}$	$I_C=200mA, I_B=100mA$		0.8	V
Base-Emitter Saturation Voltage	$V_{BESAT}$	$I_C=200mA, I_B=100mA$		1.3	V
Storage Time	$t_s$	UI9600 $I_C=0.1A$	0.6	2.5	μs
Falling Time	$t_f$				1.0



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## TO-92 MECHANICAL DATA

UNIT: mm

SYMBOL	min	nom	max
A	4.3		5.3
b	0.3		
c	0.3		
$\phi D$	4.3		5.2
D			
d	1.0		1.7
E	3.2		4.2
e		2.54	
e1		1.27	
L	12.7		
L1			2.0

