



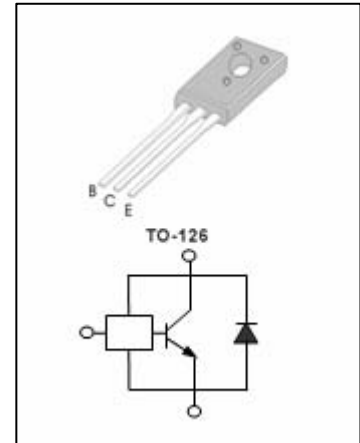
# HK13003

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	$V_{CBO}$	600	V
Collector-Emitter Voltage	$V_{CEO}$	400	V
Emitter- Base Voltage	$V_{EBO}$	9	V
Collector Current	$I_C$	1.2	A
Total Power Dissipation	$P_C$	25	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)

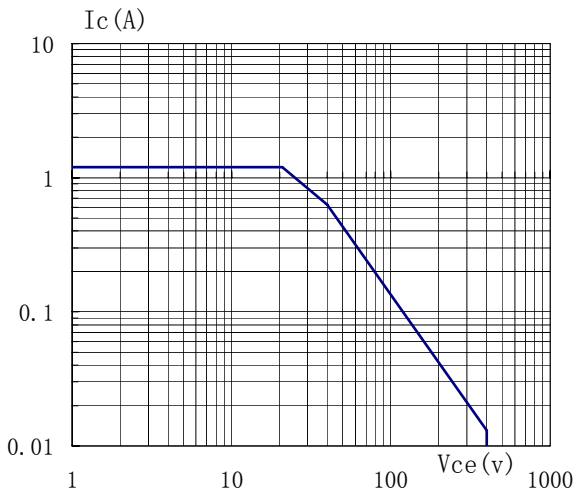
Parameter	Symbol	Test Conditons	Min	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=1mA, I_E=0$	600		V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10mA, I_B=0$	400		V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=1mA, I_C=0$	9		V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=600V, I_E=0$		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	$h_{FE(1)}$	$V_{CE}=10V, I_C=100mA$	15	30	
DC Current Gain	$h_{FE(2)}$	$V_{CE}=5V, I_C=1mA$	9		
Collector-Emitter Saturation Voltage	$V_{CESAT}$	$I_C=1.2A, I_B=0.3A$		1.2	V
Base-Emitter Saturation Voltage	$V_{BESAT}$	$I_C=1.2A, I_B=0.3A$		1.3	V
Storage Time	$t_s$	UI9600	1.5	3.0	μs
Falling Time	$t_f$	$I_C=0.25A$		1.0	μs



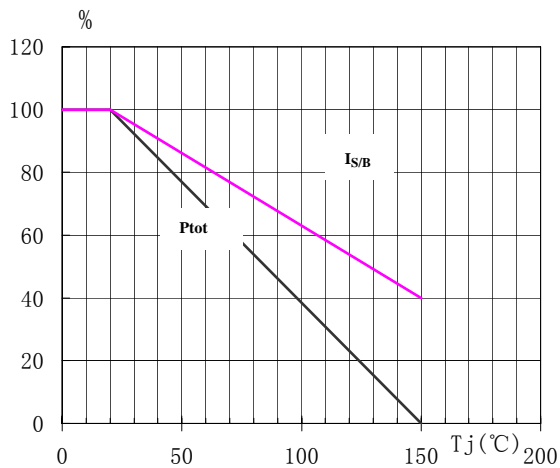
**HK13003**

**HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR**

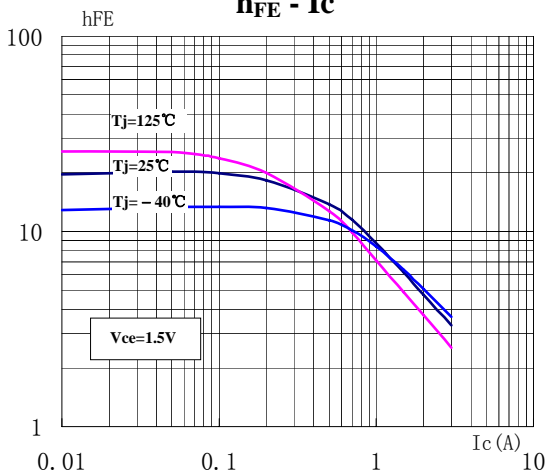
**SOA (DC)**



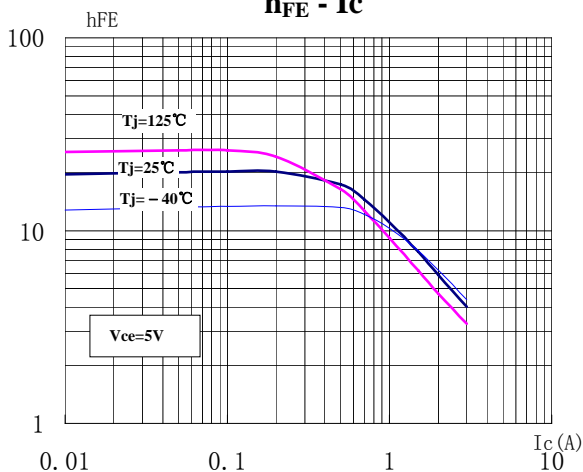
**Pc ∝ Tj**



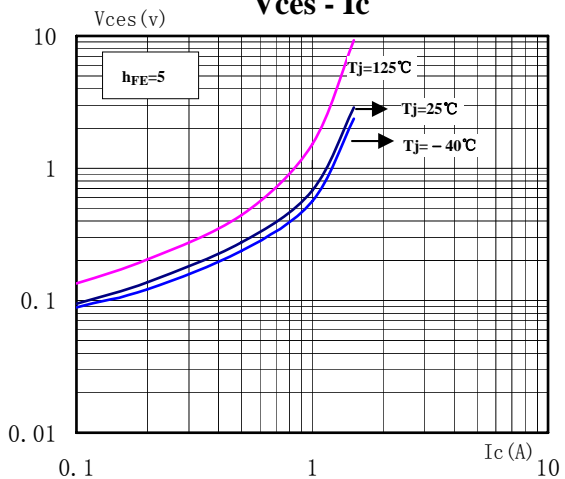
**hFE - Ic**



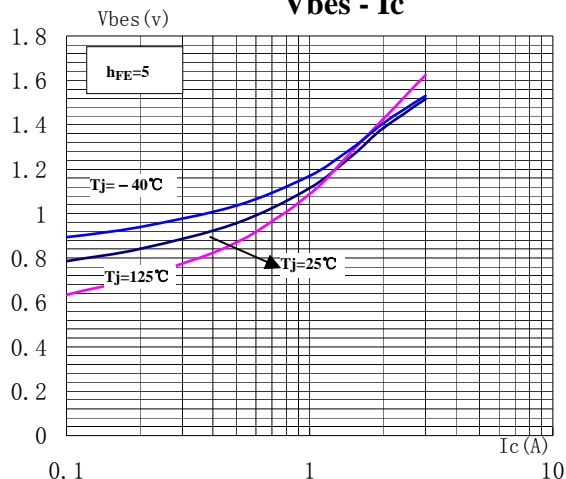
**hFE - Ic**



**Vces - Ic**



**Vbes - Ic**



### TO-126 MECHANICAL DATA

UNIT: mm

SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	2.3		2.8	L	15.3		16.5
B	1.0		1.2	L1			2.54
B1	0.8		1.0	$\phi P$	3.0		3.2
b	0.65		0.88	$\phi P1$		5.0	
c	0.36		0.60	Q	3.6		4.4
D	10.5		11.1	Q1	0.9		1.5
E	7.2		7.8	R		0.5*	
e		2.29					

