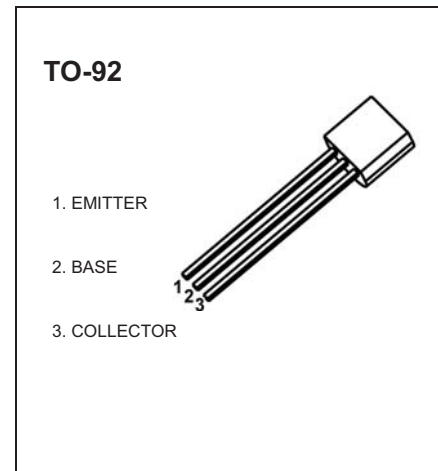


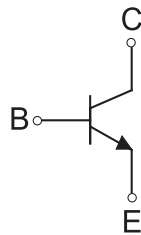
## TRANSISTOR (NPN)

### FEATURES

- Complementary to S9012
- Excellent  $h_{FE}$  linearity



### Equivalent Circuit



### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CB0}$	Collector-Base Voltage	40	V
$V_{CE0}$	Collector-Emitter Voltage	25	V
$V_{EB0}$	Emitter-Base Voltage	5	V
$I_c$	Collector Current -Continuous	0.5	A
$P_D$	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	$^{\circ}\text{C} / \text{W}$
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55 ~ +150	$^{\circ}\text{C}$

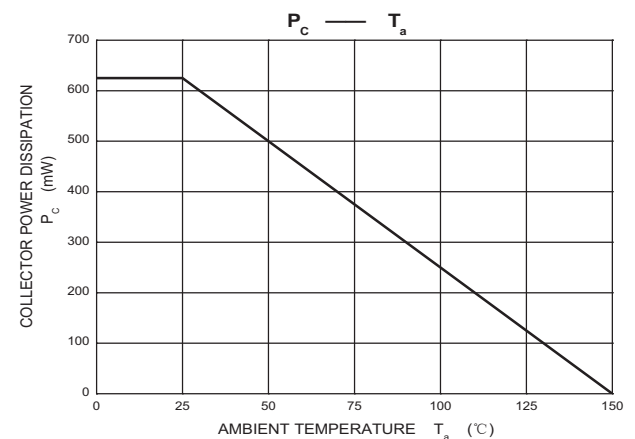
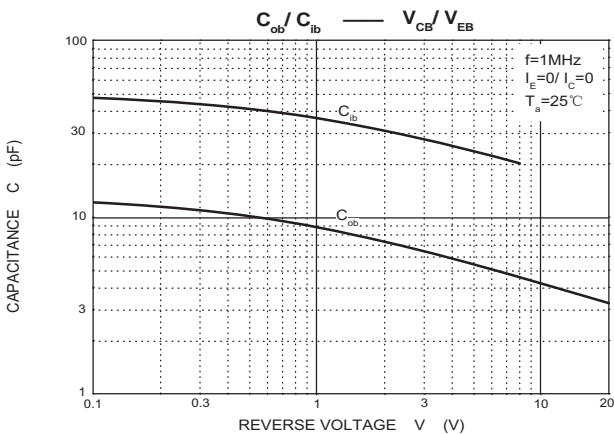
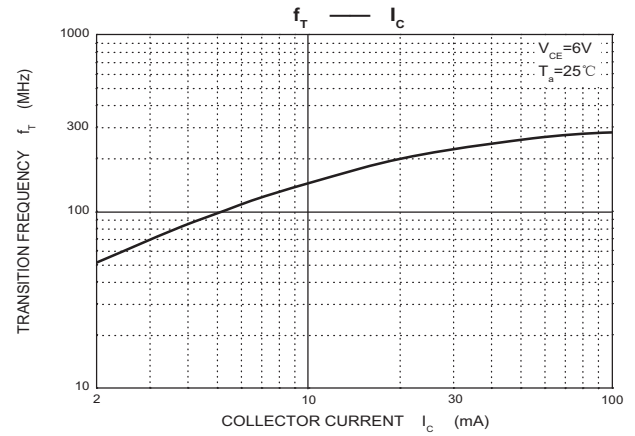
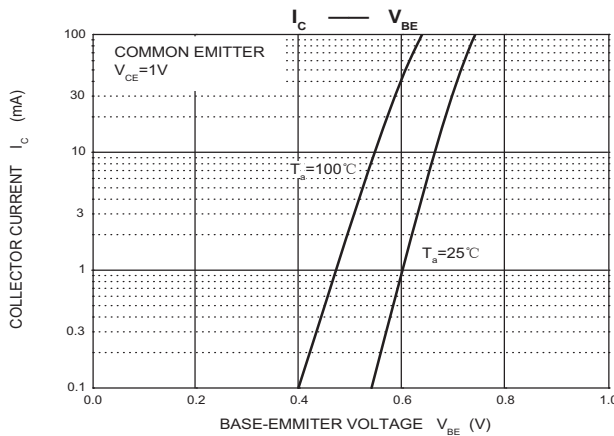
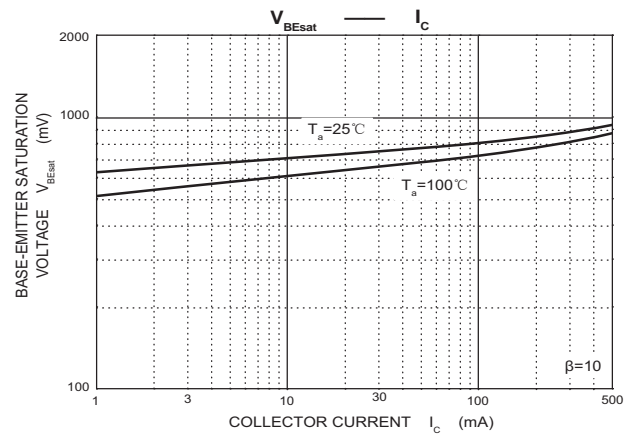
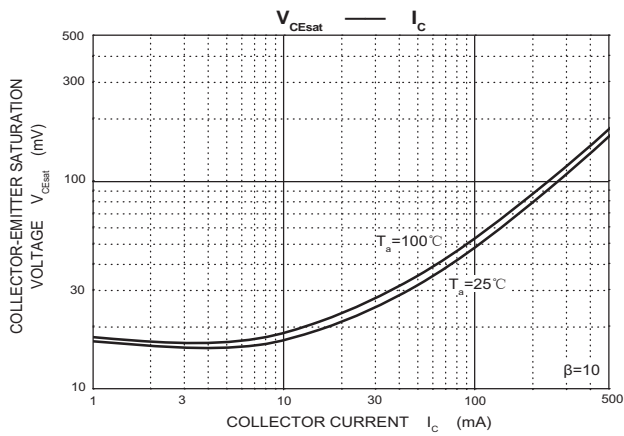
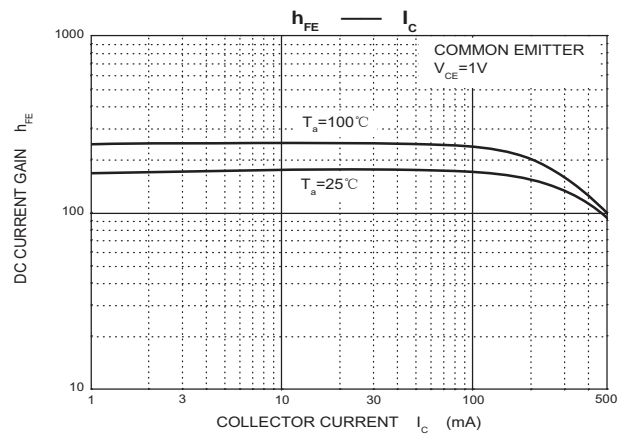
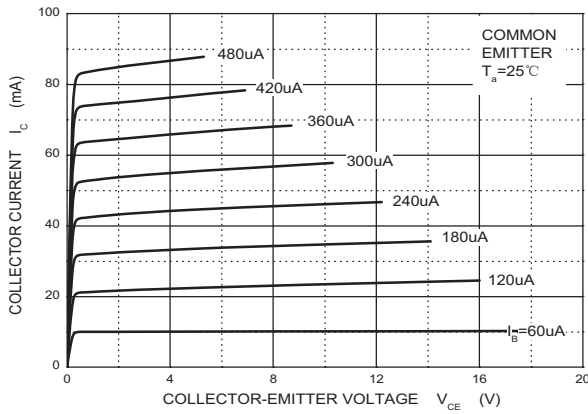
$T_a=25^\circ\text{C}$  unless otherwise specified

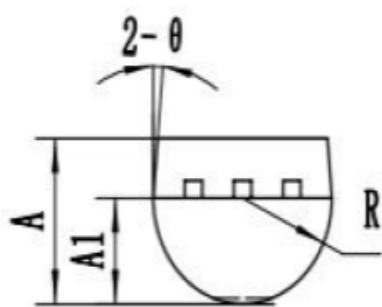
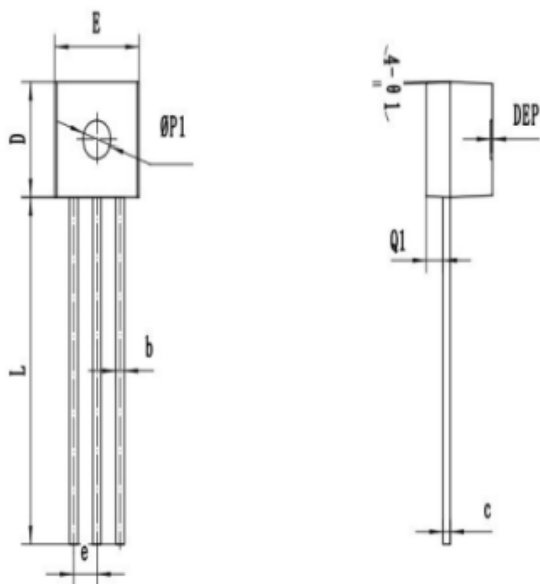
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$ , $I_B=0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=20\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}$ , $I_C=50\text{mA}$	64		400	
	$h_{FE(2)}$	$V_{CE}=1\text{V}$ , $I_C=500\text{mA}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$			0.6	V
Base-emitter voltage	$V_{BE(sat)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE}=6\text{V}$ , $I_C=20\text{mA}$ , $f=30\text{MHz}$	150			MHz

**CLASSIFICATION OF  $h_{FE(1)}$**

Rank	D	E	F	G	H	I	J
Range	64-91	78-112	96-135	112-166	144-202	190-300	300-400

**Static Characteristic**





SYMBOL	MM		
	MIN	NOM	MAX
*A	3.00	3.25	3.50
A1	2.20	2.30	2.40
*b	0.40	0.45	0.50
*c	0.25	0.30	0.35
*D	4.50	4.60	4.70
*E	4.50	4.60	4.70
*e	1.22	1.27	1.32
*L	14.00	14.30	14.60
R	2.20	2.30	2.40
Q1	0.85	0.90	0.95
$\theta$	3°	5°	7°
$\text{Ø1}$	1°	3°	5°
$\text{ØP1}$	1.40	1.50	1.60
DEP	0.05	0.10	0.20
带*为检验尺寸			