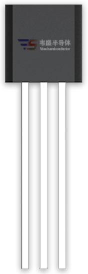
S9012 TRANSISTOR (PNP)



TO-92

FEATURES

- **Complementary to S9013**
- **Excellent h_{FE} linearity**

ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
S9012	TO-92	Bulk	1000pcs/Bag
S9012-TA	TO-92	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

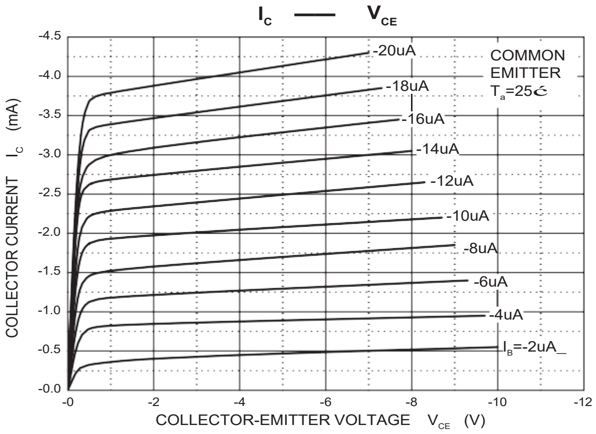
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-25	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.5	A
P_D	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	℃ /W
T_J,T_{stg}	Operation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

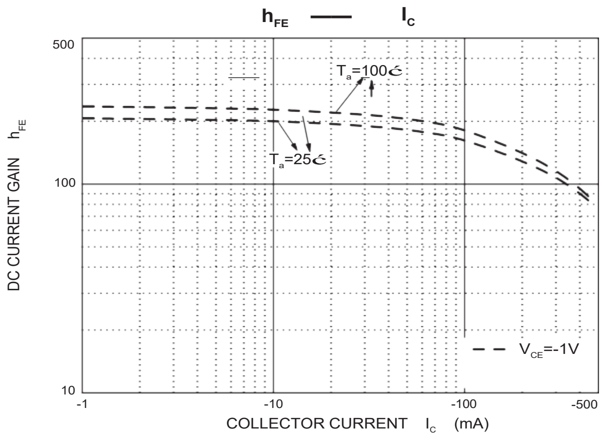
T_a=25℃ unless otherwise specified

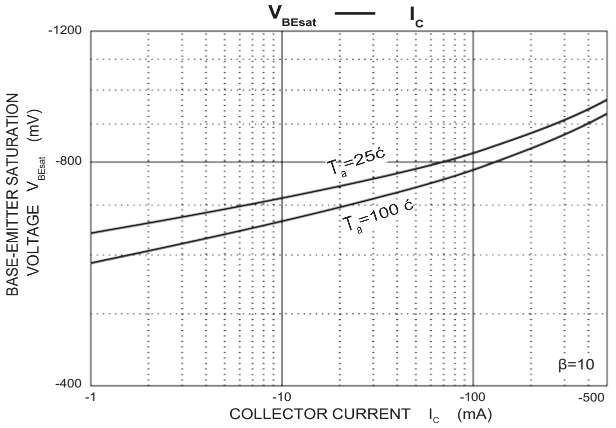
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= -100μA, I_E=0	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= -1mA,I_B=0	-25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-100μA, I_C=0	-5			V
Collector cut-off current	I_{CBO}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

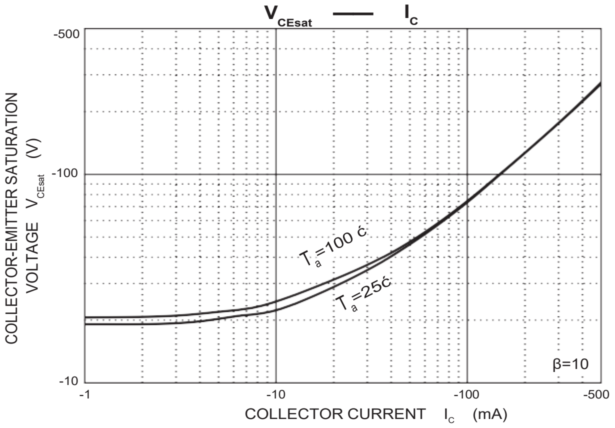
CLASSIFICATION OF h_{FE}

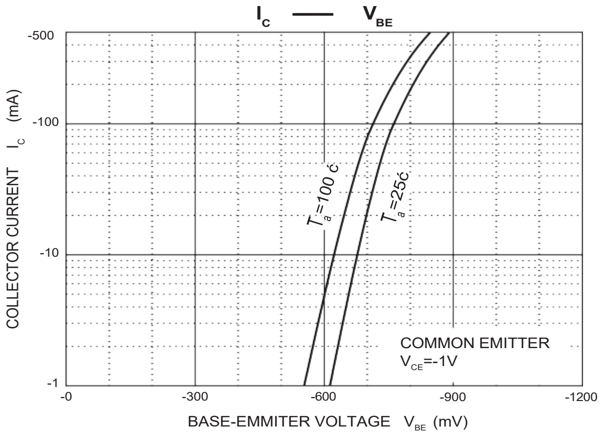
Rank	D	E	F	G	H	I	J
Range	64-91	78-112	96-135	112-166	144-202	190-300	300-400

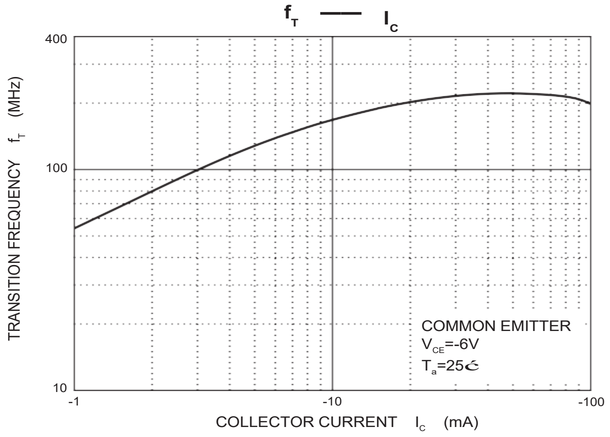

I_C — V_{CE}

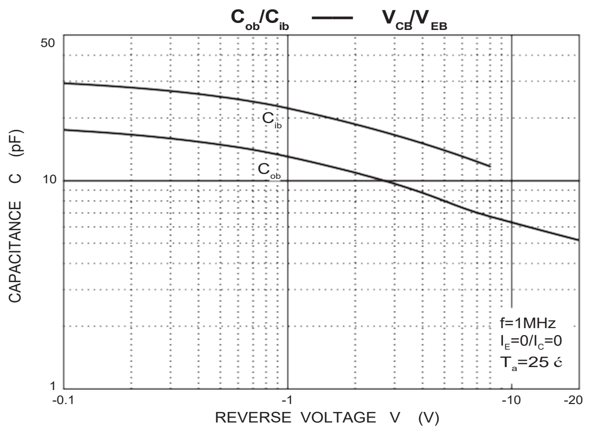

h_{FE} — I_C

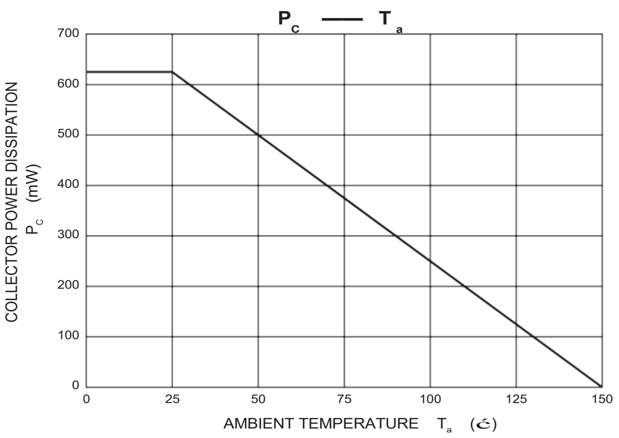

V_{BEsat} — I_C


V_{CEsat} — I_C


I_C — V_{BE}


f_T — I_C


C_{ob}/C_{ib} — V_{CB}/V_{EB}


P_C — T_a