

**Transistor (PNP)****S9012****HSiN Semiconductor Pte Ltd****www.hsin.com.sg****S9012** TRANSISTOR (PNP)**FEATURE**

Power dissipation

$$P_{CM} : 0.625 \text{ W (} T_{amb}=25 \text{)}$$

Collector current

$$I_{CM} : -0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : -40 \text{ V}$$

Operating and storage junction temperature range

$$T_j, T_{stg} : -55 \text{ to } +150$$

TO—92

1. EMITTER
2. BASE
3. COLLECTOR

**ELECTRICAL CHARACTERISTICS ($T_{amb}=25$ unless otherwise specified)**

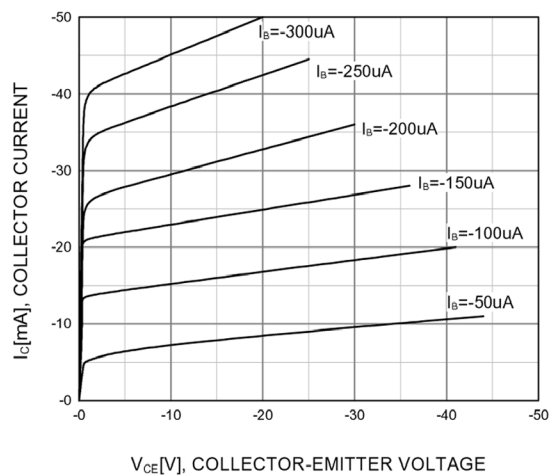
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100 \mu A$, $I_E = 0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1 \text{ mA}$, $I_B = 0$	-25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100 \mu A$, $I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -40 \text{ V}$, $I_E = 0$			-0.1	μA
Collector cut-off current	I_{CBO}	$V_{CB} = -20 \text{ V}$, $I_E = 0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5 \text{ V}$, $I_C = 0$			-0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = -1 \text{ V}$, $I_C = -50 \text{ mA}$	64		300	
	$h_{FE(2)}$	$V_{CE} = -1 \text{ V}$, $I_C = -500 \text{ mA}$	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 $h_{FE(1)}$

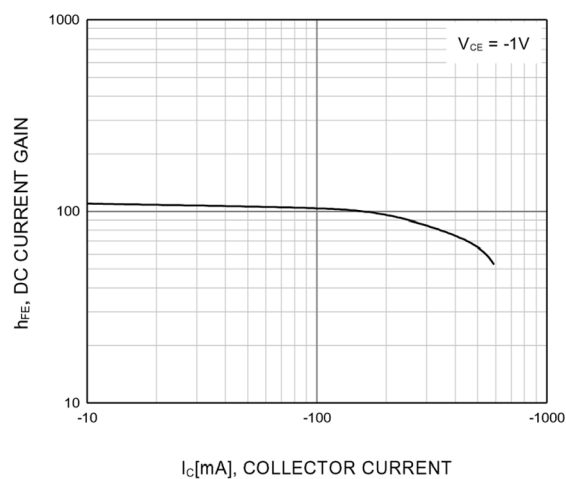
Rank	D	E	F	G	H	I
Range	64-91	78-112	96-135	112-166	144-202	190-300

Typical Characteristics

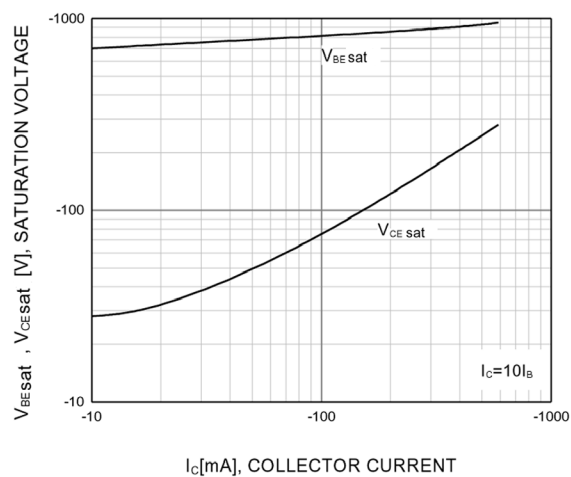
S9012



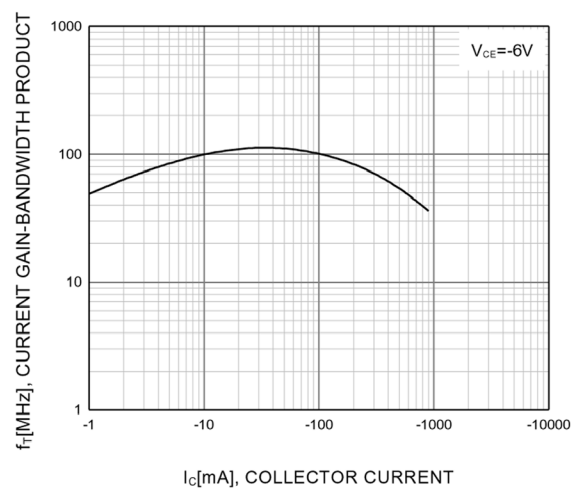
Static Characteristic



DC current Gain

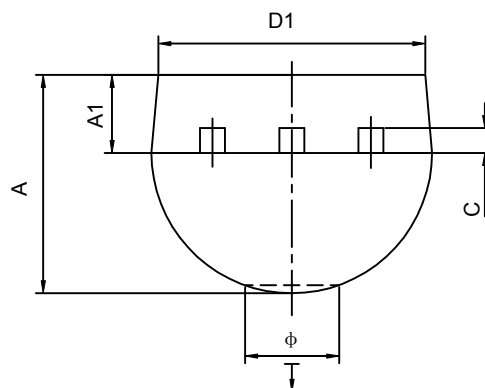
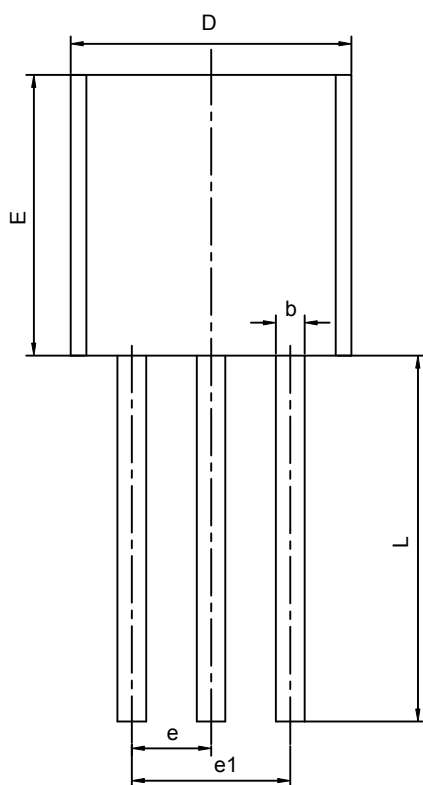


Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Current Gain Bandwidth Product

TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ö		1.600		0.063
\downarrow	0.000	0.380	0.000	0.015

