

HSB is a 26V, high speed, double polysilicon, trench isolated, complementary SOI bipolar process providing vertical integrated PNP, polysilicon resistors, MIS capacitors with PtSi Schottky diodes.

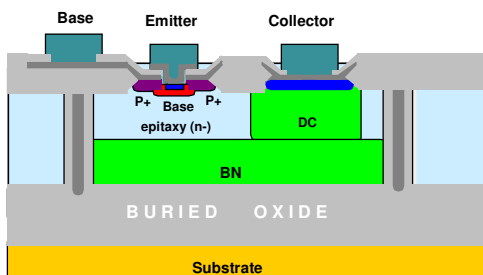
Applications

- High Speed Video Amplifiers
- ADSL Drivers
- High Speed Amplifiers
- Laser Diode Drivers for DVD
- Cable Modems

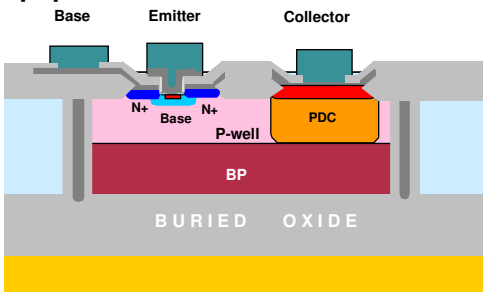
Key Process Feature

- Low Substrate Capacitance
- Polysilicon resistors -110/155/1400 Ohms/sq
- Pt Si Schottky Diodes $V_f=0.5$ V
- MIS capacitors – 0.6 fF/ μm^2
- Two level metal

npn cross section



vpnp cross section



npn parameters (0.6 x 4.0um emitter)

parameter	Condition	Value	Units
fT	Ic=0.14mA Vce=5V	5	GHz
HFE	Ic=10μA Vce=5V	166	
VAf		215	V
BVCEO	Ic=10μA	>26	V
BVCBO	Ic=1μA	>40	V
CJE	Vbe=0	12	fF
CJC	Vbc=0	5	fF
CJS	Vcs=0	49	fF

Vertical pnp parameters (0.6 X 4.0um emitter)

parameter	Condition	Value	Units
fT	Ic=0.11mAVce=5V	4	GHz
HFE	Ic=10μA Vce=5V	52	
VAf		95	V
BVCEO	Ic=10μA	>30	V
BVCBO	Ic=1μA	>40	V
CJE	Vbe=0	10	fF
CJC	Vbc=0	5	fF
CJS	Vcs=0	42	fF

Polysilicon Resistor Values

parameter	Value	Units
LoP	155 ± 20	Ω
LoN	110 ± 20	Ω
HiP	1.4 ± 0.2	kΩ

Design Rules

Feature	Min μm	Spacing μm
Emitter	0.6 X 1.6	
LoP, LoN resistor	1.2	0.8
HiP resistor	1.0	0.8
Contact	1.0 X 1.6	1.4
1st Layer metal	1.4	1.0
2 nd layer metal	1.4	1.0

Data Sheet 291200 issue 2 April 12

Process information and data ("Information") in this document is an outline only, for general information purposes; it does not constitute a representation or warranty as to capability, performance or suitability of the Process for any given application. User must satisfy himself that the Process is suitable for his requirements.

While Information herein is believed correct and accurate, it is subject to change without notice and Plessey accepts no liability arising from the use or application of such Information.

All use of, and product manufactured and supplied using the Process, will be subject to Plessey's standard trading terms, which are available on request.

Plessey Semiconductors Ltd. Tamerton Road, Roborough, Plymouth, United Kingdom, PL6 7BQ

Tel: +44 1752 693000

Fax: +44 1752 693200

Web: www.plesseysemiconductors.com