Ordering number: EN 2505

SANYO

No.2505

2SA1582/2SC4113

PNP/ NPN Epitaxial Planar Silicon Transistors

Switching Applications (with Bias Resistance)

Applications

- Switching circuit, inverter circuit, interface circuit, driver circuit

Features

- On-chip bias resistance ($R_1=2.2k\Omega, R_2=\infty$)
- Small-sized package (SPA)

( ): 2SA1582

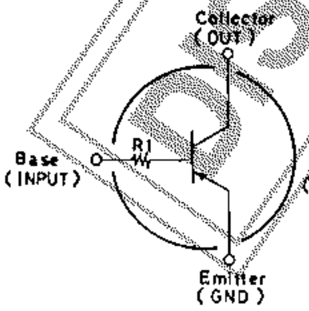
Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	(-)50	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)5	V
Collector Current	I_C	(-)100	mA
Collector Current (Pulse)	I_{CP}	(-)200	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

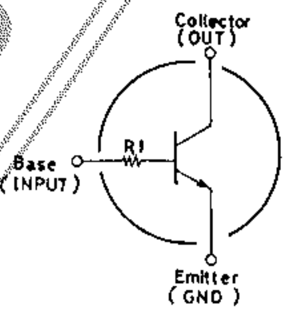
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=(-)40V, I_E=0			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0			(-)0.1	μA
DC Current Gain	h_{FE}	V_{CE}=(-)5V, I_C=(-)10mA	100			
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)5mA		250 (200)		MHz
Output Capacitance	c_{ob}	V_{CB}=(-)10V, f=1MHz		3.7 (5.5)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=(-)10mA, I_B=(-)0.5mA		(-)0.1	(-)0.3	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-)50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)100μA, $R_{BE}=\infty$	(-)50			V
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=(-)5V, I_C=(-)100μA	(-)0.4	(-)0.55	(-)0.8	V
Input ON-State Voltage	$V_{I(on)}$	V_{CE}=(-)0.2V, I_C=10mA	(-)0.6	(-)0.8	(-)1.5	V
Input Resistance	R1		1.5	2.2	2.9	kΩ

Electrical Connection

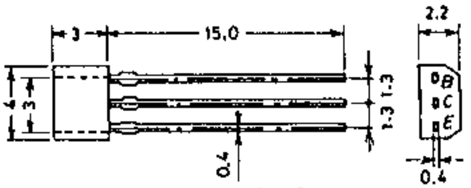


2SA1582(PNP)



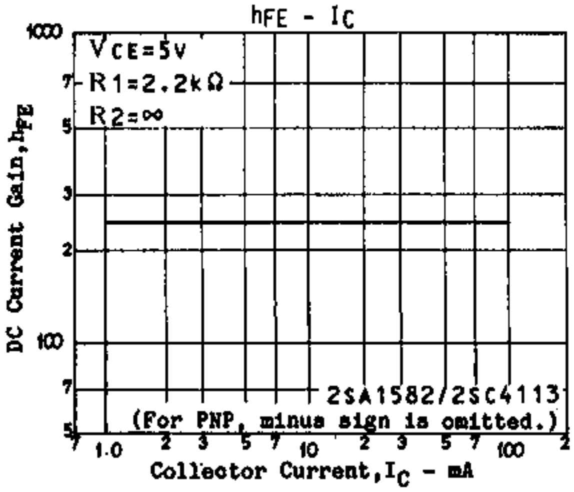
2SC4113(NPN)

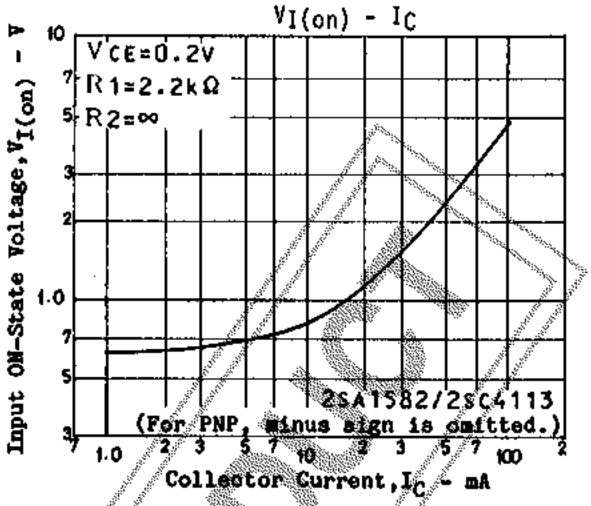
Case Outline 2033
(unit:mm)

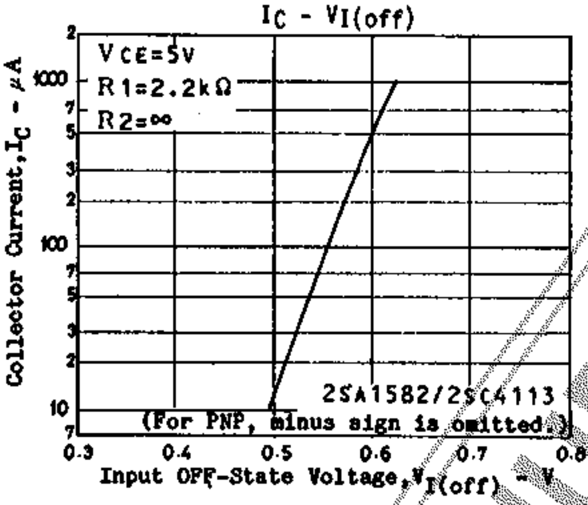


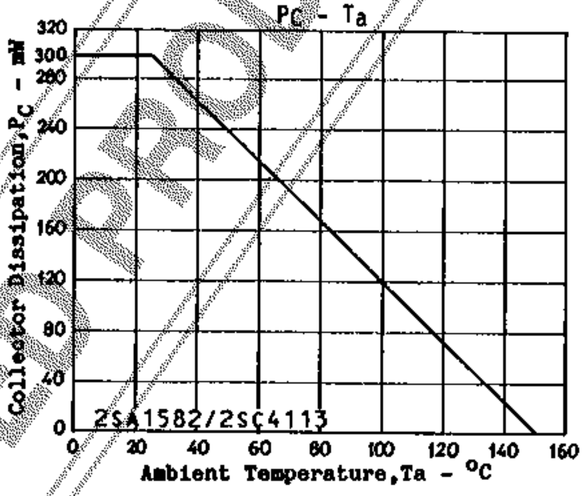
B: Base
C: Collector
E: Emitter

SANYO: SPA


hFE - IC
VCE=5V
R1=2.2kΩ
R2=∞
DC Current Gain, hFE
1000
7
5
3
2
100
7
5
7
1.0
2
3
5
7
10
2
3
5
7
100
2
Collector Current, IC - mA
2SA1582/2SC4113
(For PNP, minus sign is omitted.)


VI(on) - IC
VCE=0.2V
R1=2.2kΩ
R2=∞
Input ON-State Voltage, VI(on) - V
10
7
5
3
2
1.0
7
5
3
7
1.0
2
3
5
7
10
2
3
5
7
100
2
Collector Current, IC - mA
2SA1582/2SC4113
(For PNP, minus sign is omitted.)


IC - VI(off)
VCE=5V
R1=2.2kΩ
R2=∞
Collector Current, IC - μA
2
1000
7
5
3
2
100
7
5
3
2
10
7
0.3
0.4
0.5
0.6
0.7
0.8
Input OFF-State Voltage, VI(off) - V
2SA1582/2SC4113
(For PNP, minus sign is omitted.)


PC - Ta
Collector Dissipation, PC - mW
320
300
280
240
200
160
120
80
40
0
0
20
40
60
80
100
120
140
160
Ambient Temperature, Ta - °C
2SA1582/2SC4113