

**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

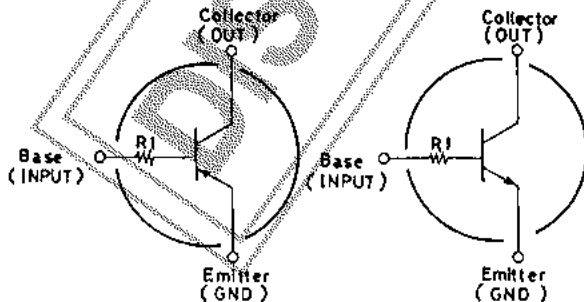
**Absolute Maximum Ratings at  $T_a = 25^\circ C$**

			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	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ C$

**Electrical Characteristics at  $T_a = 25^\circ C$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)40V, I_E = 0$			(-)0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (+)5V, I_C = 0$			(-)0.1	$\mu A$
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	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)50			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)100\mu A, R_{BE} = \infty$	(-)50			V
Input OFF-State Voltage	$V_{I(off)}$	$V_{CE} = (-)5V, I_C = (-)100\mu A$	(-)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	$R_I$		1.5	2.2	2.9	k $\Omega$

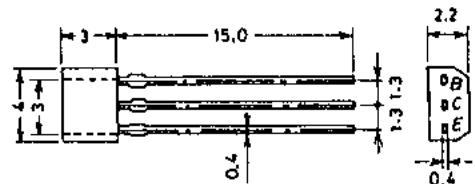
**Electrical Connection**



2SA1582(PNP)

2SC4113(NPN)

**Case Outline 2033**  
(unit: mm)

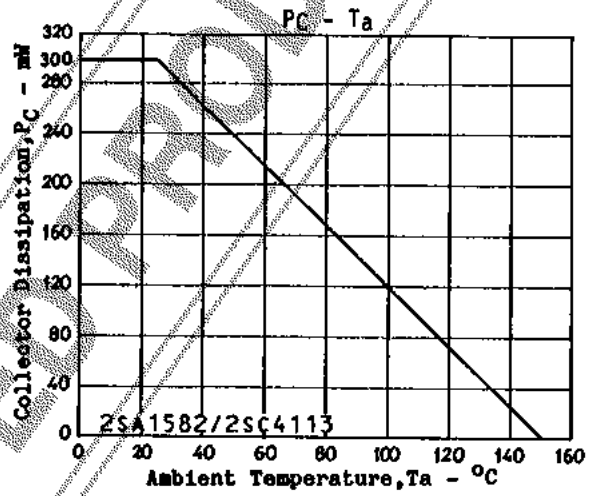
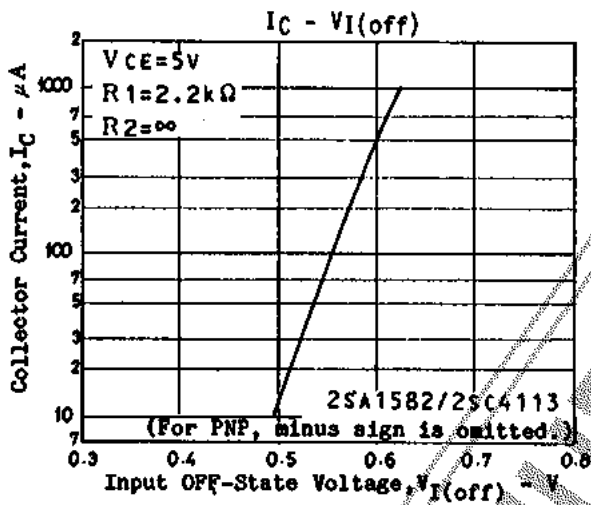
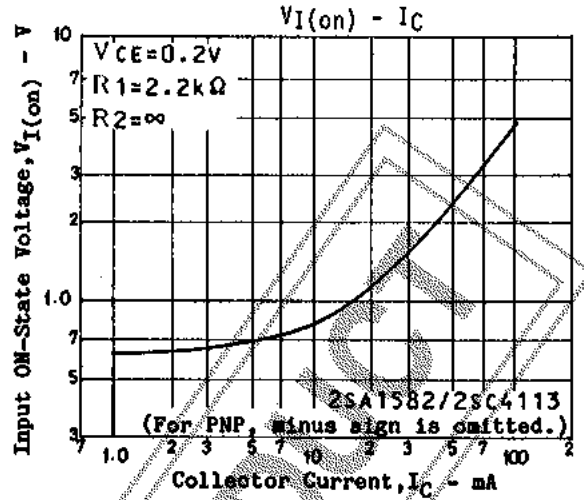
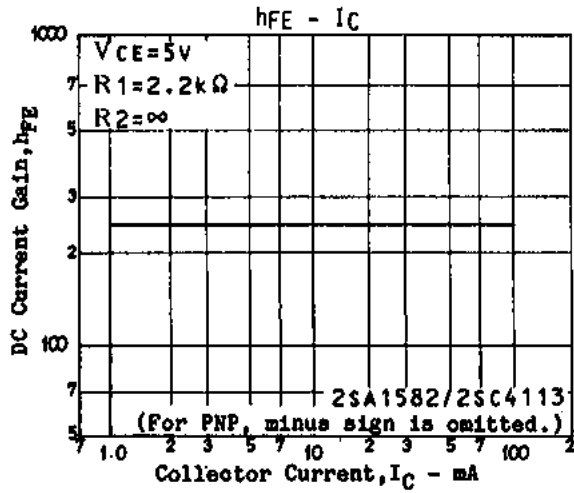


B: Base  
C: Collector  
E: Emitter

SANYO: SPA

Specifications and information herein are subject to change without notice.

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