

**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)

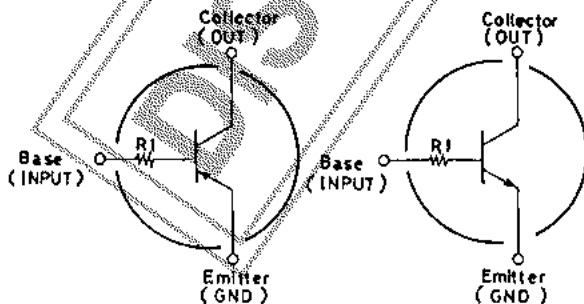
( ): 2SA1582

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

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

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

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

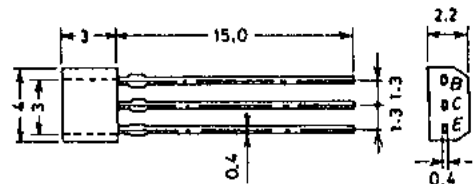
**Electrical Connection**

2SA1582(PNP)

2SC4113(NPN)

**Case Outline 2033**

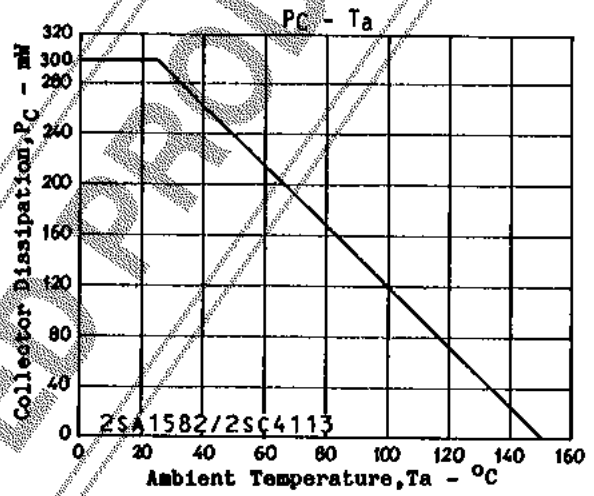
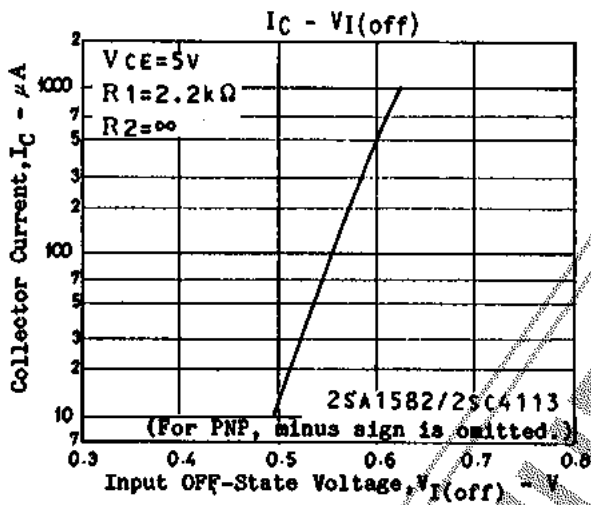
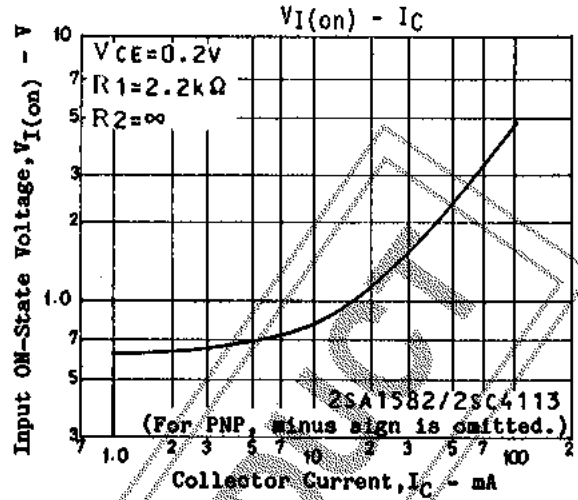
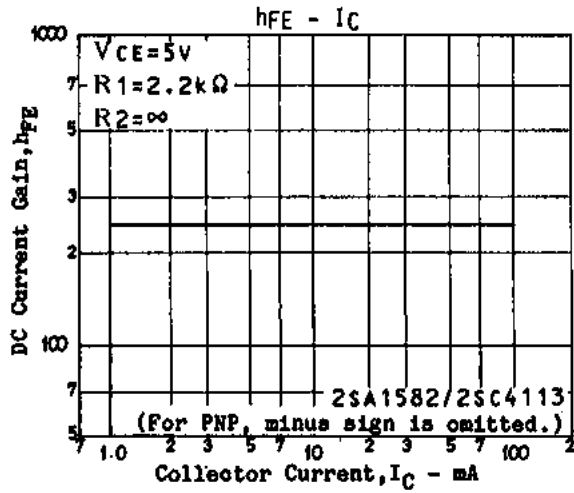
(unit: mm)

B: Base  
C: Collector  
E: Emitter

SANYO: SPA

Specifications and information herein are subject to change without notice.

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DISCONTINUED