Ordering number: EN2515

No.2515

2SA1591/2SC4133

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=4.7kΩ, R_2=47kΩ)
. Small-sized package (SPA)

( ): 2SA1591

Absolute Maximum Ratings at Ta=25°C

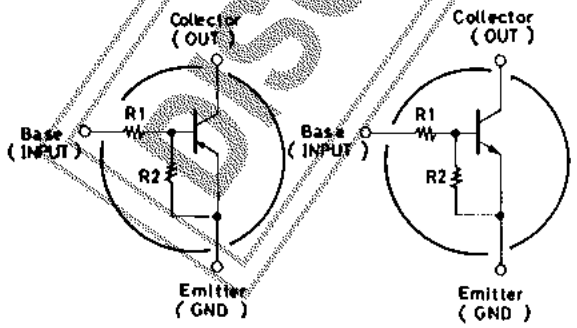
			unit
Collector to Base Voltage	V_{CBO}	(-)50	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)100	mA
Collector Current (Pulse)	I_{CP}	(-)200	mA
Collector Dissipation	P_C	300	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +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
Collector Cutoff Current	I_{CEO}	V_{CE}=(-)40V, I_B=0			(-)0.5	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(-)5V, I_C=0	(-)74	(-)97	(-)138	μA
DC Current Gain	h_{FE}	V_{CE}=(-)5V, I_C=(-)5mA	70			
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}=∞	(-)50			V

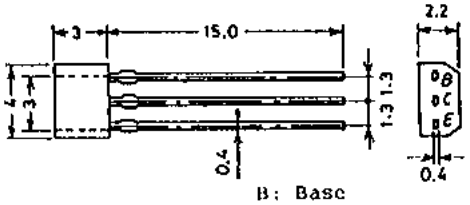
Continued on next page.

Electrical Connection



2SA1591(PNP) 2SC4133(NPN)

Case Outline 2033
(unit:mm)



B: Base
C: Collector
E: Emitter

SANYO: SPA

SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10,1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

Continued from preceding page.

			min	typ	max	unit
Input OFF-State Voltage	$V_{I(off)}$	V_{CE}=(-)5V, I_C=(-)100μA	(-)0.5	(-)0.6	(-)0.8	V
Input ON-State Voltage	$V_{I(on)}$	V_{CE}=(-)0.2V, I_C(-)5mA	(-)0.7	(-)0.85	(-)1.3	V
Input Resistance	R1		3.3	4.7	6.1	kΩ
Resistance Ratio	R1/R2		0.09	0.1	0.11