Ordering number: EN 2103A

SANYO

No.2103A

2SA1509/2SC3899

PNP/NPN Epitaxial Planar Silicon Transistors

Switching Applications (with Bias Resistance)

Applications

. Switching circuits, inverter circuits, interface circuits, driver circuits

Features

. On-chip bias resistance: R_1=47kΩ
. Small-sized package: SPA

( ): 2SA1509

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	T_j	150	°C
Storage Temperature	T_{stg}	-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		MHz
				(200)		MHz
Output Capacitance	C_{ob}	V_{CB}=(-)10V, f=1MHz		3.7		pF
				(5.5)		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(-)5mA, I_B=(-)0.25mA		(-)0.1	(-)0.3	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0	(-)50			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)100μA, R_{BE}=∞	(-)50			V

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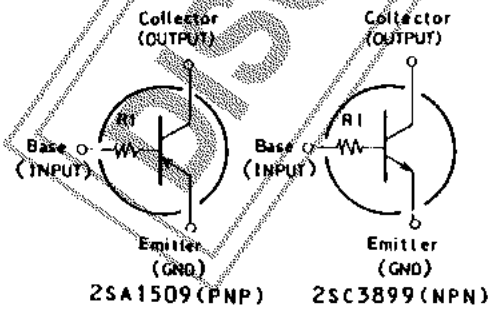
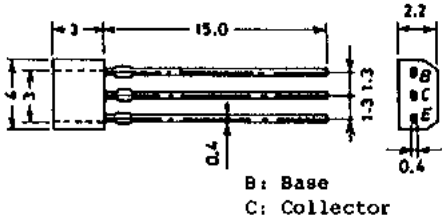
Electrical Connection



Case Outline 2033
(unit:mm)



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			min	typ	max	unit
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=(-)5mA	(-)0.8	(-)2.0	(-)4.0	V
Input Resistance	R1		33	47	61	kΩ