

2SA1604
2SC4156



2029A

PNP/NPN Epitaxial Planar
Silicon Transistors

T-35-27
T-37-27

High-Speed Switching Applications

©2545

Features

- Adoption of FBET process
- High breakdown voltage ($V_{CE0}=(-)50V$)
- Large current capacity and high f_T
- Small-sized package (DP6) permitting sets to be made smaller and slimmer

(): 2SA1604

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

			unit
Collector to Base Voltage	V_{CB0}	(-)60	V
Collector to Emitter Voltage	V_{CE0}	(-)50	V
Emitter to Base Voltage	V_{EB0}	(-)5	V
Collector Current	I_C	(-)500	mA
Peak Collector Current	i_{cp}	(-)800	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

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

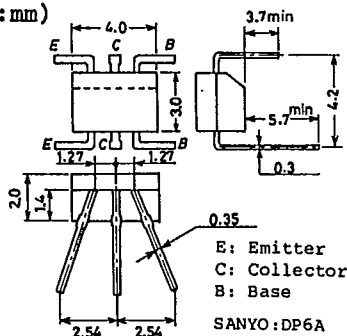
			min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CB}=(-)40V, I_E=0$			(-)0.1	uA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=(-)4V, I_C=0$			(-)0.1	uA
DC Current Gain	h_{FE}	$V_{CE}=(-)5V, I_C=(-)10mA$	100*		560*	
DC Current Gain Ratio	$h_{FE(small/large)}$	$V_{CE}=(-)5V, I_C=(-)10mA$	0.8		1.0	
Base to Emitter Voltage Difference	$V_{BE(large-small)}$	$V_{CE}=(-)5V, I_C=(-)10mA$		1.0	10	mV
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)50mA$		300		MHz
				(200)		MHz
Output Capacitance	c_{ob}	$V_{CB}=(-)10V, f=1MHz$		3.7		pF
				(5.6)		pF

Continued on next page.

*: The 2SA1604/2SC4156 are classified by 10mA $h_{FE(small)}$ as follows:

100	R	200	140	S	280	200	T	400	280	U	560
-----	---	-----	-----	---	-----	-----	---	-----	-----	---	-----

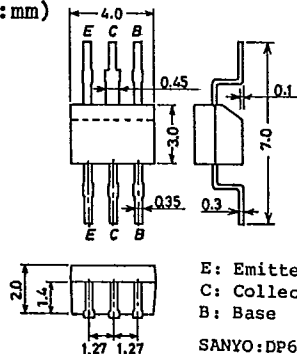
Case Outline 2029A (unit:mm)



SANYO:DP6A

The 2SA1604, 2SC4156 is provided with a surface mounted package.

Case Outline 2030A (unit:mm)



E: Emitter
C: Collector
B: Base
SANYO:DP6B

T-35-27

T-37-27

Continued from preceding page.

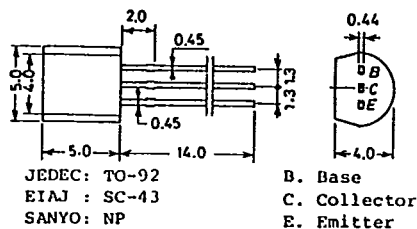
			min	typ	max	unit
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$		0.1	0.3	V
				(0.15)	(0.4)	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$		0.8	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10uA, I_E=0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100uA, R_{BE}=\infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10uA, I_C=0$	(-)5			V

T-91-20

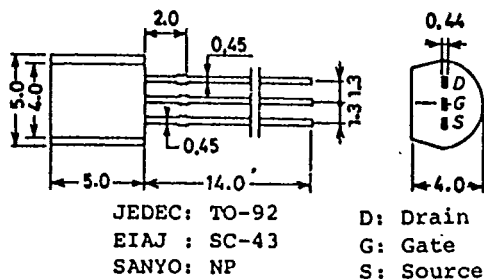
CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- All of Sanyo lead formed small signal transistor case outlines are illustrated below.
- All dimensions are in mm, and dimensions which are not followed by min. or max. are represented by typical values.
- No marking is indicated.

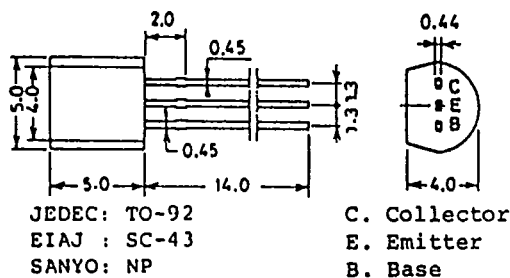
Case Outline—[2003A] unit: mm



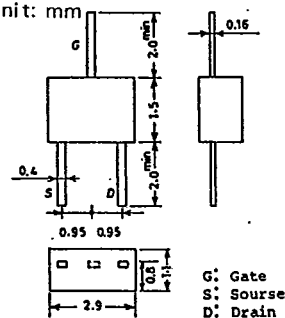
Case Outline—[2019A] unit: mm



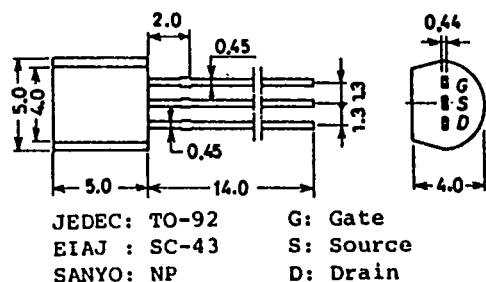
Case Outline—[2004A] unit: mm



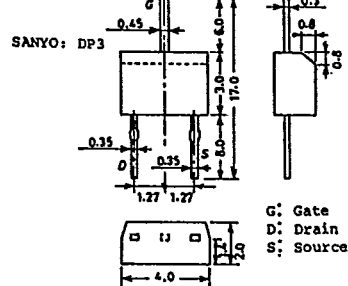
Case Outline—[2025] unit: mm



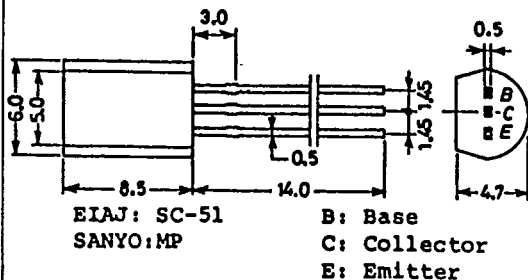
Case Outline—[2005A] unit: mm



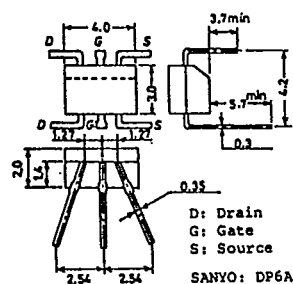
Case Outline—[2026] unit: mm



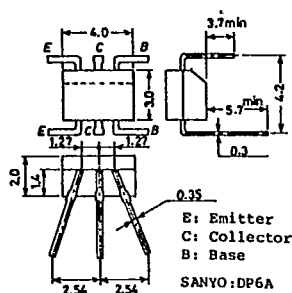
Case Outline—[2006A] unit: mm



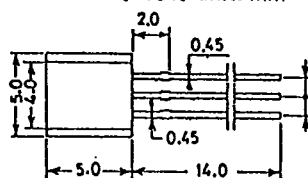
Case Outline—[2027A] unit: mm



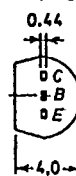
Case Outline—[2029A] unit: mm



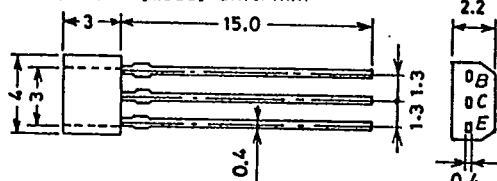
Case Outline—[2061] unit: mm



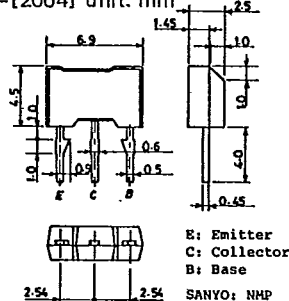
T-91-20



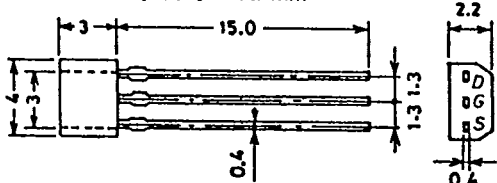
Case Outline—[2033] unit: mm



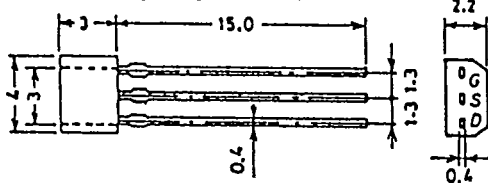
Case Outline—[2064] unit: mm



Case Outline—[2034] unit: mm



Case Outline—[2040] unit: mm



Case Outline—[2051] unit: mm

