

2006A

NPN Epitaxial Planar Silicon Transistor

T-29-23

High h_{FE} , Low-Frequency General-Purpose Amp Applications

©2957

Features

- Adoption of MBIT process
- High DC current gain ($h_{FE} = 800$ to 3200)
- Large current capacity ($I_C = 2A$)
- Low collector to emitter saturation voltage ($V_{CE(sat)} \leq 0.5V$)
- High V_{EBO} ($V_{EBO} \geq 15V$)

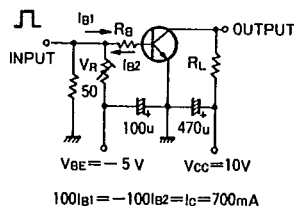
Absolute Maximum Ratings at $T_a = 25^\circ C$

			unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	15	V
Collector Current	I_C	2	A
Peak Collector Current	i_{cp}	4	A
Base Current	I_B	0.4	A
Collector Dissipation	P_C	1	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature	T_{stg}	-55 to +150	$^\circ C$

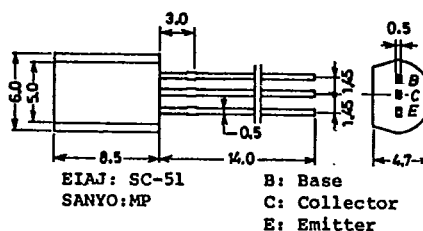
Electrical Characteristics at $T_a = 25^\circ C$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 10V, I_C = 0$			0.1	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = 5V, I_C = 500mA$	800	1500	3200	
	$h_{FE}(2)$	$V_{CE} = 5V, I_C = 1A$	600			
Gain-Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 50mA$		260		MHz
Output Capacitance	c_{ob}	$V_{CB} = 10V, f = 1MHz$		27		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 20mA$	0.15	0.5		V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 1A, I_B = 20mA$	0.85	1.2		V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	30			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	15			V
Turn-on Time	t_{on}	See specified Test Circuit.		0.14		μs
Storage Time	t_{stg}			1.35		μs
Fall Time	t_f			0.1		μs

Switching Time Test Circuit

PW = 20 μs DC $\leq 1\%$ 

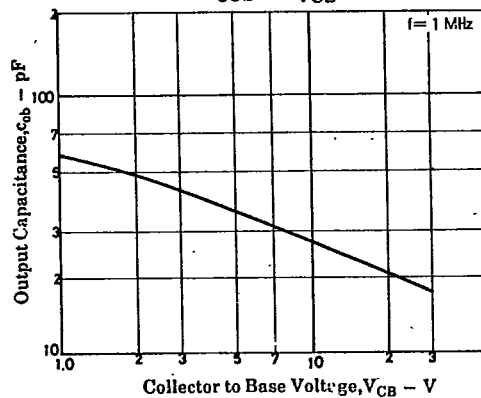
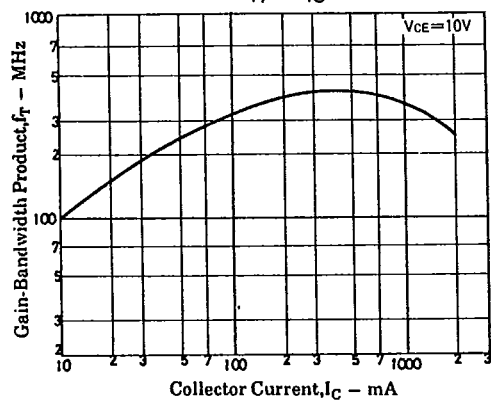
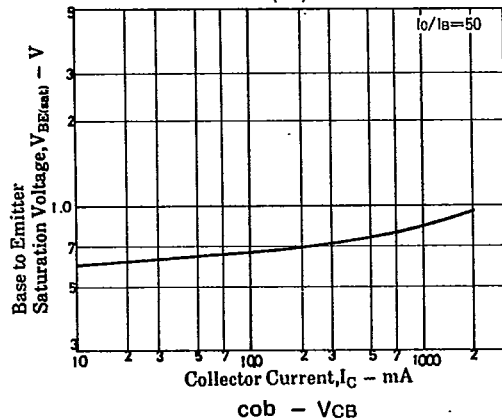
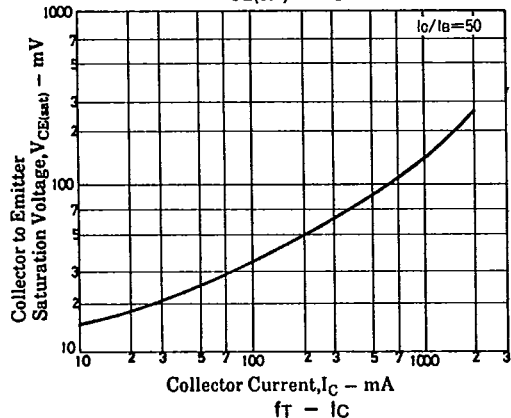
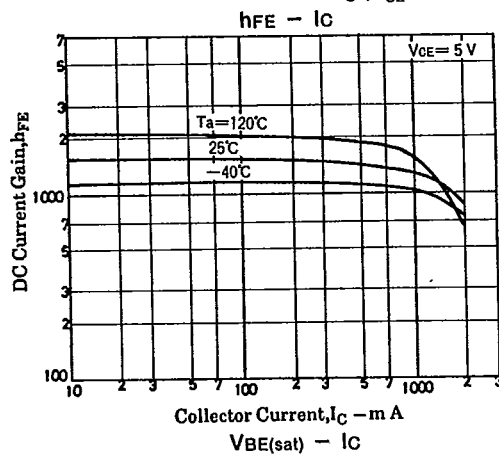
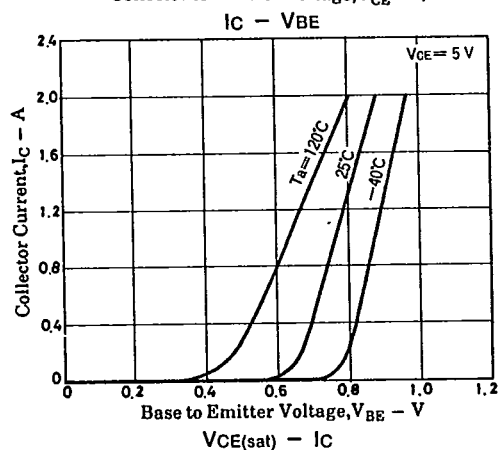
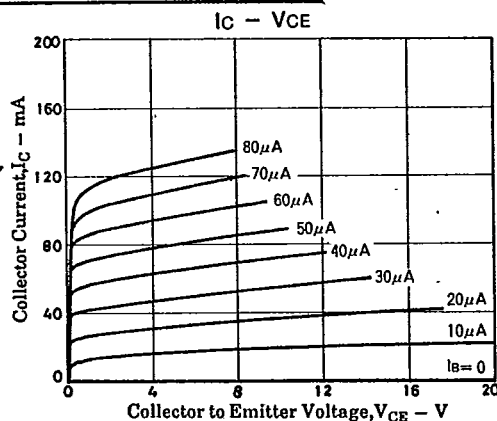
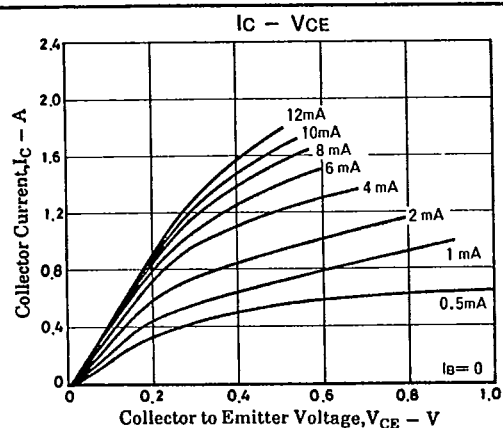
Case Outline 2006A (unit: mm)

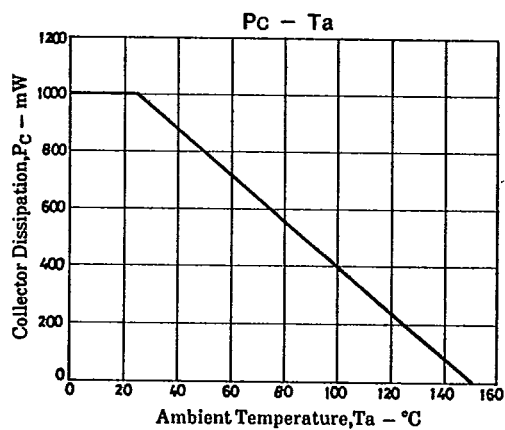
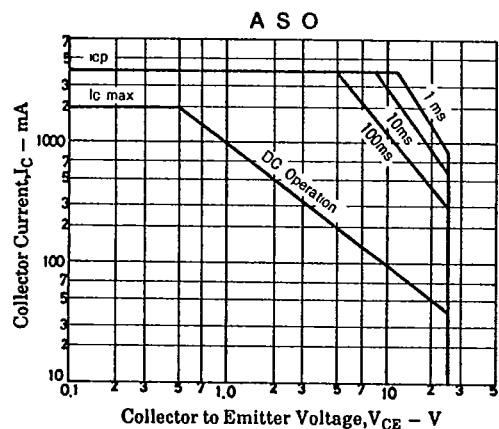


2079MO, TS No. 2957-1/3

2SC4389

T-29-23



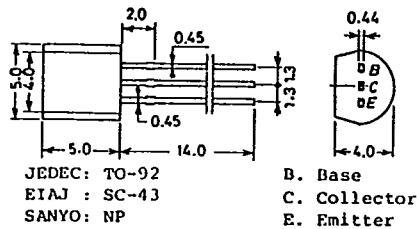


T-91-20

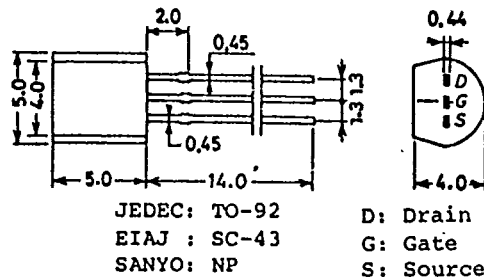
CASE OUTLINES OF LEAD FORMED SMALL SIGNAL TRANSISTORS

- 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.

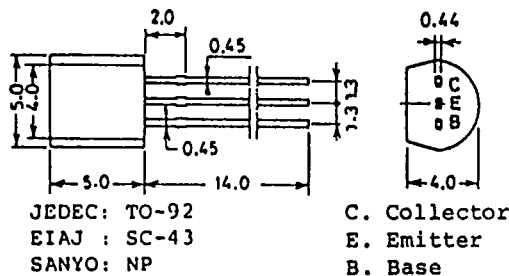
Case Outline—[2003A] unit: mm



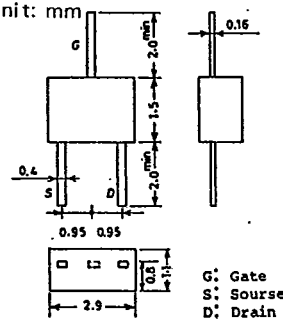
Case Outline—[2019A] unit: mm



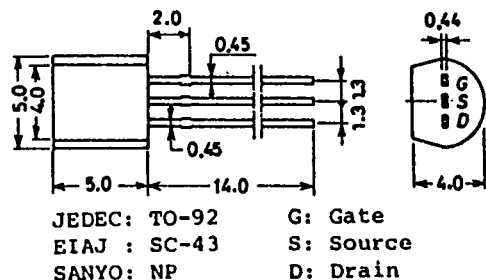
Case Outline—[2004A] unit: mm



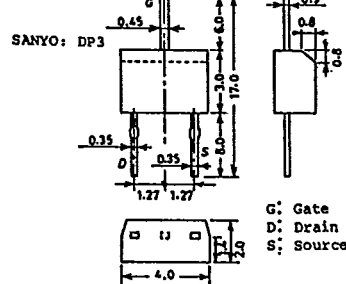
Case Outline—[2025] unit: mm



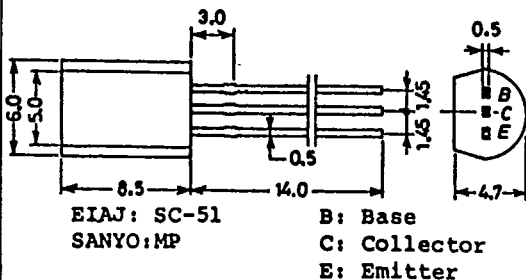
Case Outline—[2005A] unit: mm



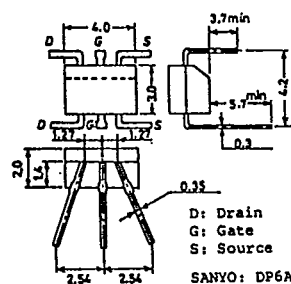
Case Outline—[2026] unit: mm



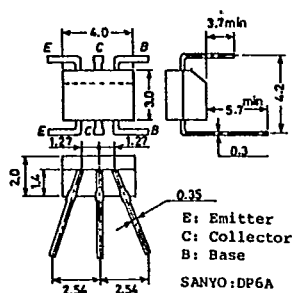
Case Outline—[2006A] unit: mm



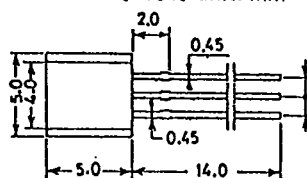
Case Outline—[2027A] unit: mm



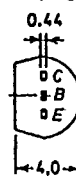
Case Outline—[2029A] unit: mm



Case Outline—[2061] unit: mm

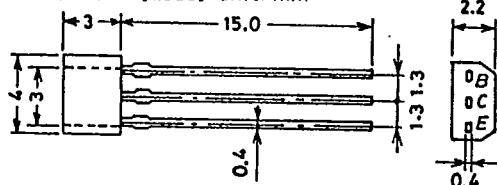


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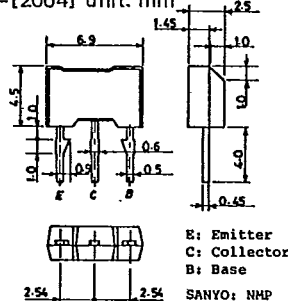


C: Collector
B: Base
E: Emitter
SANYO: NP

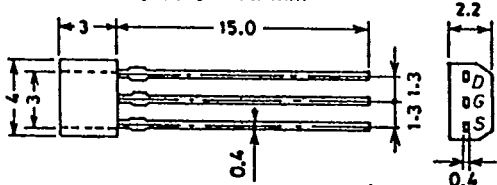
Case Outline—[2033] unit: mm



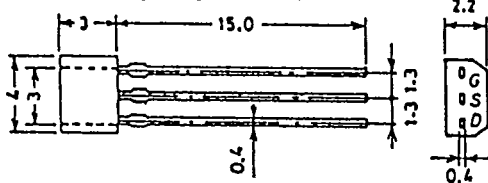
Case Outline—[2064] unit: mm



Case Outline—[2034] unit: mm



Case Outline—[2040] unit: mm



Case Outline—[2051] unit: mm

