

2029A

T-29-27

PNP Epitaxial Planar
Silicon Composite Transistor

Differential Amp Applications

©975C

Applications

- Differential amp, current mirror, temperature compensator.

Features

- Excellent in thermal equilibrium and suited for use in first-stage differential amp.
- Matched pair capability.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Value	unit
Collector to Base Voltage	V_{CB0}	-130	V
Collector to Emitter Voltage	V_{CE0}	-120	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-50	mA
Peak Collector Current	i_{cp}	-100	mA
Collector Dissipation	P_C	200	mW
Total Dissipation	P_T	400	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

1 unit

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Test Conditions	min	typ	max	unit
Collector Cutoff Current	I_{CB0}	$V_{CE}=-80V, I_E=0$			-0.1	uA
Emitter Cutoff Current	I_{EB0}	$V_{EB}=-4V, I_C=0$			-0.1	uA
DC Current Gain	h_{FE}	$V_{CE}=-6V, I_C=-1mA$		160*	560*	
DC Current Gain Ratio	$h_{FE(small/large)}$	$V_{CE}=-6V, I_C=-1mA$	0.85	0.98		

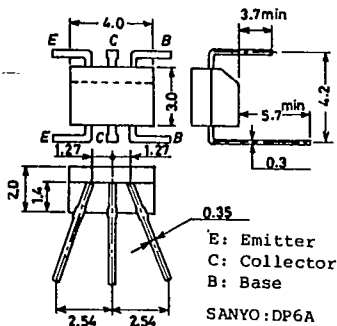
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* The 2SA1239 is classified by h_{FE} (small) as follows:

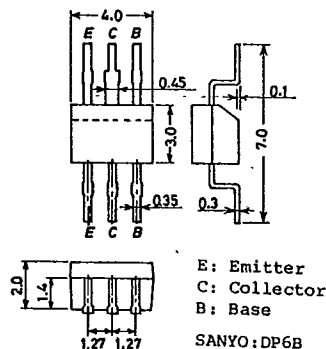
160 F	320	280 G	560
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The 2SA1239 is provided with a surface mounted package.

Case Outline 2029A
(unit:mm)

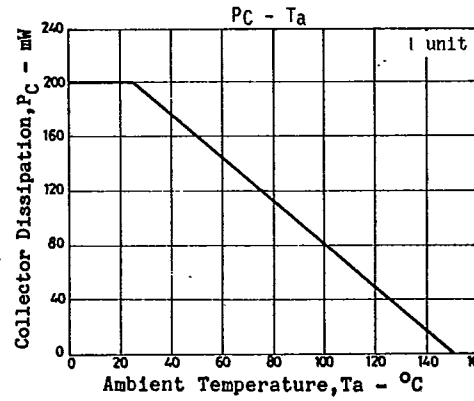
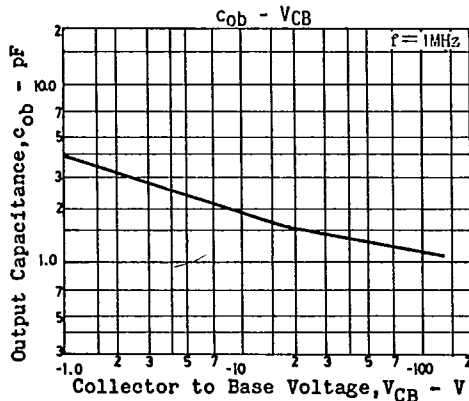
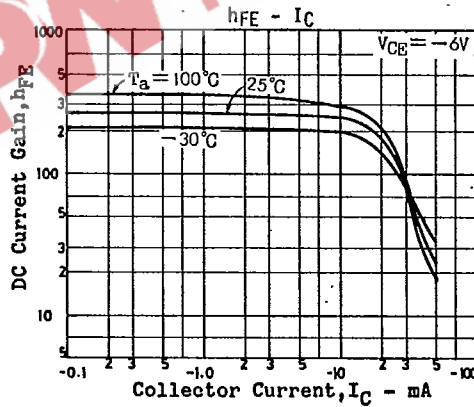
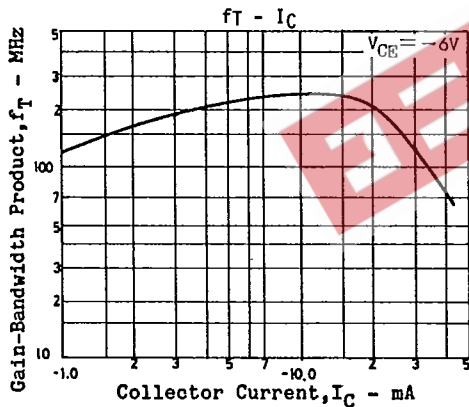
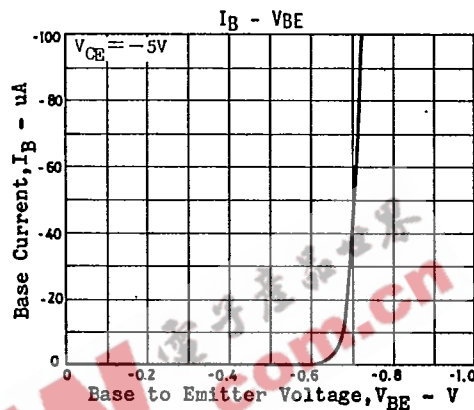
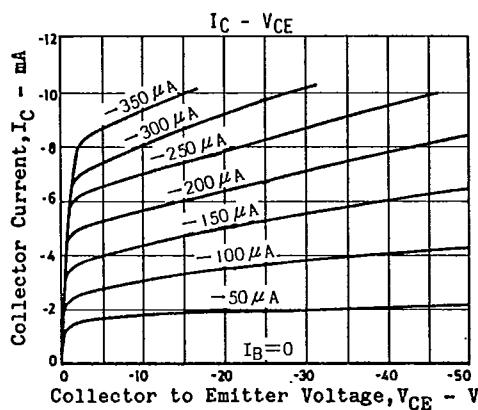


Case Outline 2030A
(unit:mm)



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			min	typ	max	unit
Base to Emitter Voltage Drop	$V_{BE(large-small)}$	$V_{CE}=-6V, I_C=-1mA$		1.0	10	mV
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-10mA, I_B=-1mA$		-0.5		V
Gain-Bandwidth Product	f_T	$V_{CE}=-6V, I_C=-1mA$		110		MHz
Output Capacitance	c_{ob}	$V_{CB}=-10V, f=1MHz$		2.0		pF
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-130			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-120			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5			V

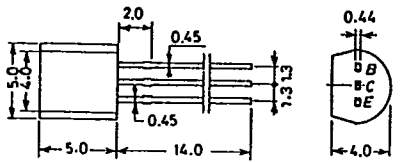


T-91-20

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.

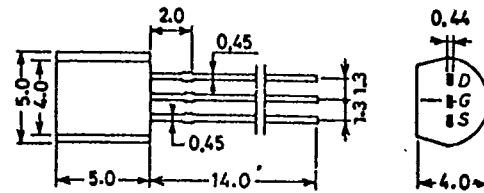
Case Outline-[2003A] unit: mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

B. Base
C. Collector
E. Emitter

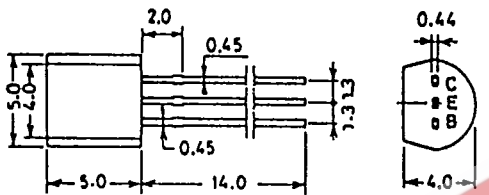
Case Outline-[2019A] unit: mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

D: Drain
G: Gate
S: Source

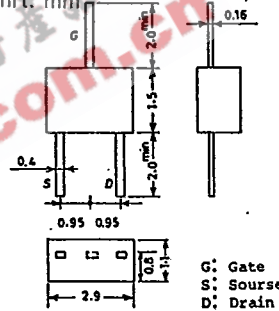
Case Outline-[2004A] unit: mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

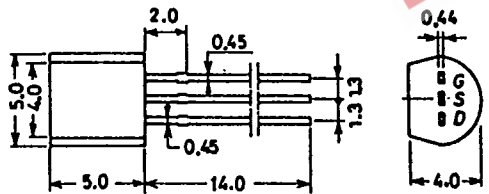
C. Collector
E. Emitter
B. Base

Case Outline-[2025] unit: mm



G: Gate
S: Source
D: Drain

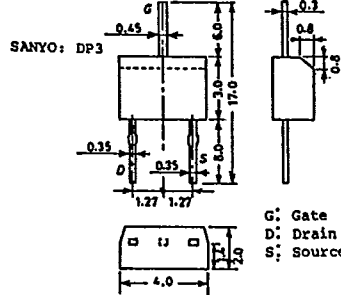
Case Outline-[2005A] unit: mm



JEDEC: TO-92
EIAJ: SC-43
SANYO: NP

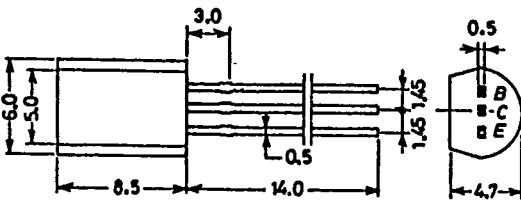
G: Gate
S: Source
D: Drain

Case Outline-[2026] unit: mm



G: Gate
D: Drain
S: Source

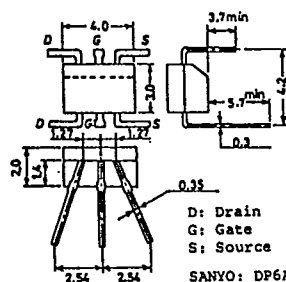
Case Outline-[2006A] unit: mm



EIAJ: SC-51
SANYO: MP

B: Base
C: Collector
E: Emitter

Case Outline-[2027A] unit: mm



D: Drain
G: Gate
S: Source
SANYO: DP6A

