



2SA1239 — Differential Amp Applications

Silicon PNP Epitaxial Planar Composite Transistor

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

			unit
Collector to Base Voltage	V _{CBO}	-130	V
Collector to Emitter Voltage	V _{CEO}	-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

Electrical Characteristics at Ta=25°C

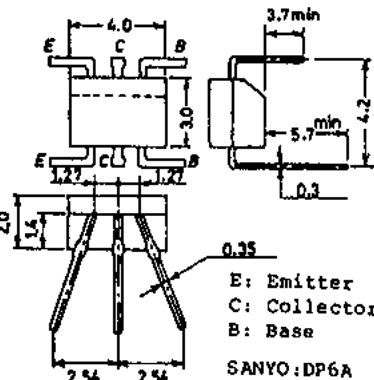
		min	typ	max	unit
Collector Cutoff Current	I _{CBO}			-0.1	uA
Emitter Cutoff Current	I _{EBO}			-0.1	uA
DC Current Gain	h _{FE}		160*	560	
DC Current Gain Ratio	h _{FE(small/large)}	0.85	0.98		

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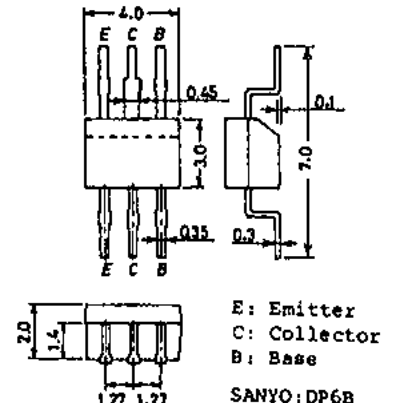
* The 2SA1239 is classified by h_{FE} (small) as follows:

160	F	320	280	G	560
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Case Outline 2029A (unit:mm)



Case Outline 2030A (unit:mm)



The application circuit diagrams and circuit constants herein are included as an example and provide no guarantee for designing equipment to be mass-produced. The information herein is believed to be accurate and reliable. However, no responsibility is assumed by SANYO for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

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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

