

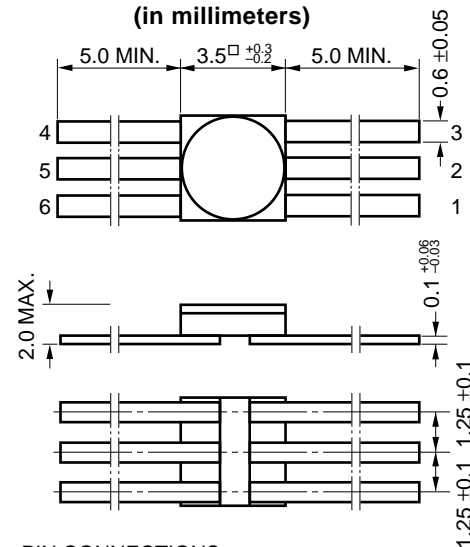
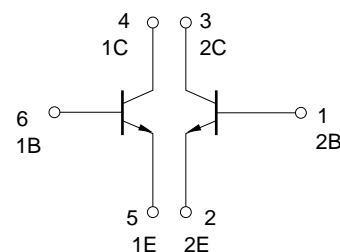
**NPN SILICON EPITAXIAL DUAL TRANSISTOR
FOR DIFFERENTIAL AMPLIFIER AND ULTRA HIGH SPEED SWITCHING
INDUSTRIAL USE**

DESCRIPTION

The 2SC1927 is an NPN silicon epitaxial dual transistor that consists of two chips equivalent to the 2SC1275, and is designed for differential amplifier and ultra-high-speed switching applications.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	14	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Dissipation	P_C	200	mW/unit
Total Power Dissipation	P_T	300	mW
Junction Temperature	T_j	200	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-65 to +200	$^{\circ}\text{C}$

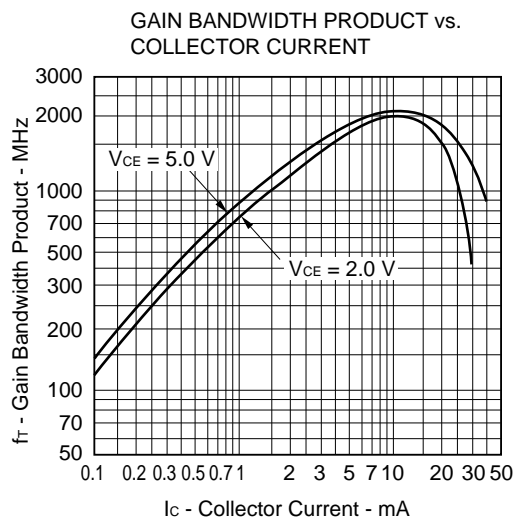
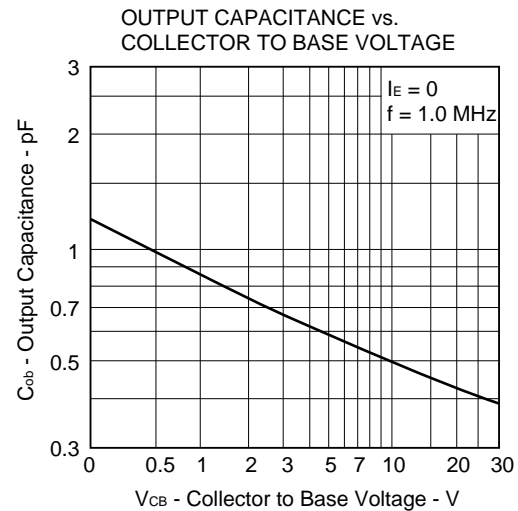
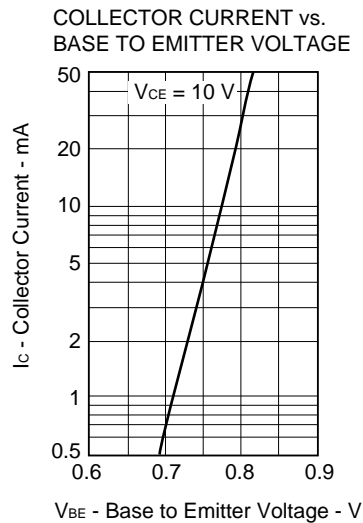
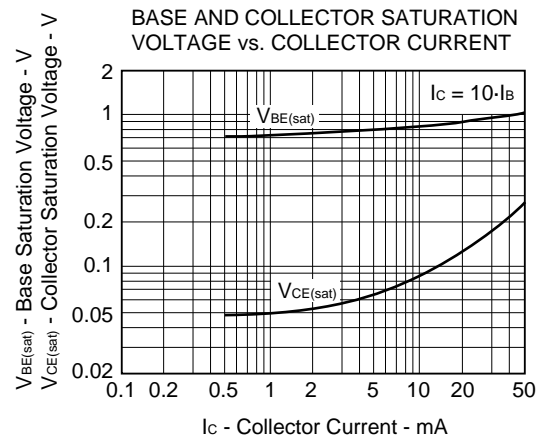
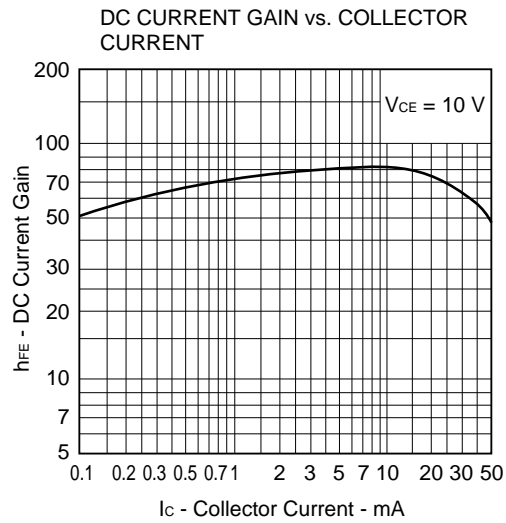
**PACKAGE DIMENSIONS
(in millimeters)****PIN CONNECTIONS****ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$)**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CES}	$V_{CE} = 15\text{ V}, R_{BE} = 0$			50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 2.0\text{ V}, I_C = 0$			50	nA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}$	25	80	200	
h_{FE} Ratio	h_{FE1}/h_{FE2}	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}^{*1}$	0.8		1.0	
Difference of Base to Emitter Voltage	ΔV_{BE}	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}$			30	mV
Gain Bandwidth Product	f_T	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}^{*2}$	1.5	2.0		GHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}^{*3}$		1.1	1.5	pF

* 1. h_{FE1} is the smaller h_{FE} value of the 2 transistors.

2. Sampling check shall be done on a production lot base using a TO-18 packaged device (equivalent to the 2SC1275).

3. Measured with a 3-terminal bridge, terminals other than the collector and base of the device under test should be connected to the guard terminal of the bridge.

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

[MEMO]

No part of this document may be copied or reproduced in any form or by any means without the prior written consent of NEC Corporation. NEC Corporation assumes no responsibility for any errors which may appear in this document.

NEC Corporation does not assume any liability for infringement of patents, copyrights or other intellectual property rights of third parties by or arising from use of a device described herein or any other liability arising from use of such device. No license, either express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC Corporation or others.

While NEC Corporation has been making continuous effort to enhance the reliability of its semiconductor devices, the possibility of defects cannot be eliminated entirely. To minimize risks of damage or injury to persons or property arising from a defect in an NEC semiconductor device, customer must incorporate sufficient safety measures in its design, such as redundancy, fire-containment, and anti-failure features.

NEC devices are classified into the following three quality grades:

"Standard", "Special", and "Specific". The Specific quality grade applies only to devices developed based on a customer designated "quality assurance program" for a specific application. The recommended applications of a device depend on its quality grade, as indicated below. Customers must check the quality grade of each device before using it in a particular application.

Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots

Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

The quality grade of NEC devices in "Standard" unless otherwise specified in NEC's Data Sheets or Data Books. If customers intend to use NEC devices for applications other than those specified for Standard quality grade, they should contact NEC Sales Representative in advance.

Anti-radioactive design is not implemented in this product.