NEC

SILICON TRANSISTOR
2SC1927

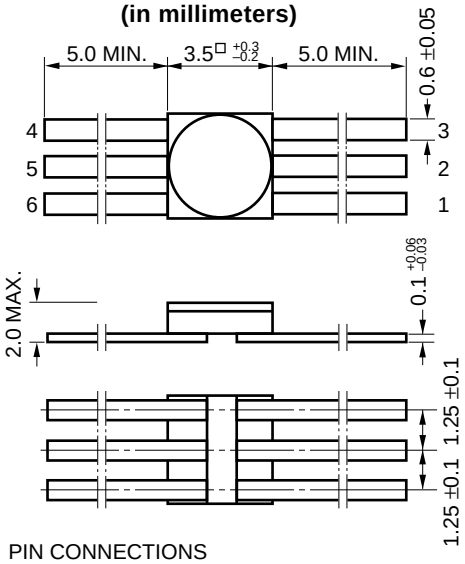
NPN SILICON EPITAXIAL DUAL TRANSISTOR FOR DIFFERENTIAL AMPLIFIER AND ULTRA HIGH SPEED SWITCHING INDUSTRIAL USE

DESCRIPTION

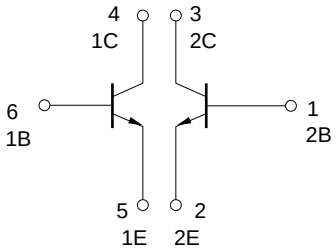
The 2SC1927 is an NPN silicon epitaxial dual transistor that consists of two chips equivalent to the 2SC1275, and is designed for differential amplifier and ultra-high-speed switching applications.

PACKAGE DIMENSIONS

(in millimeters)



PIN CONNECTIONS



ABSOLUTE MAXIMUM RATINGS (T_A = 25 ˚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	˚C
Storage Temperature	T_{stg}	–65 to +200	˚C

ELECTRICAL CHARACTERISTICS (T_A = 25 ˚C)

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

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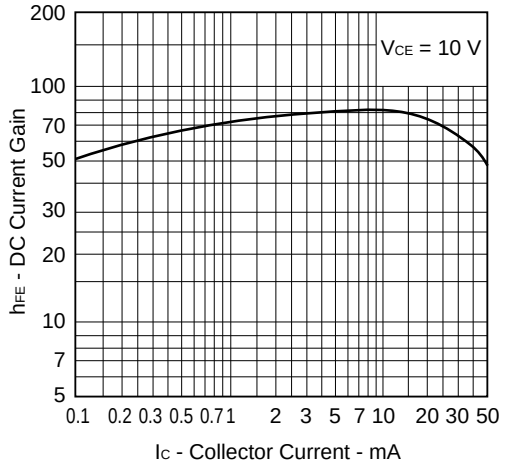
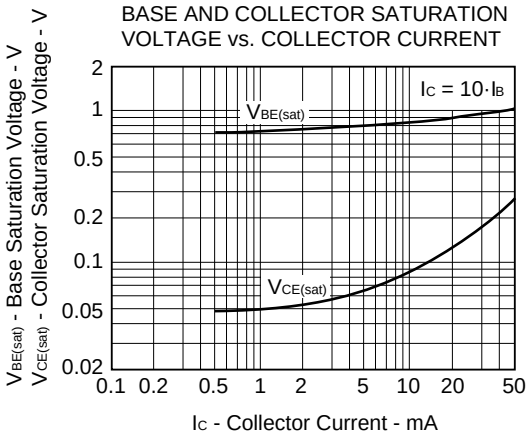
TYPICAL CHARACTERISTICS (T_A = 25 °C)

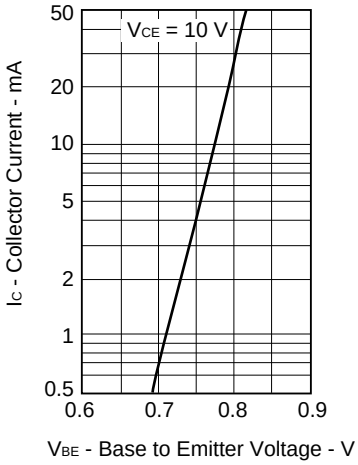
DC CURRENT GAIN vs. COLLECTOR CURRENT



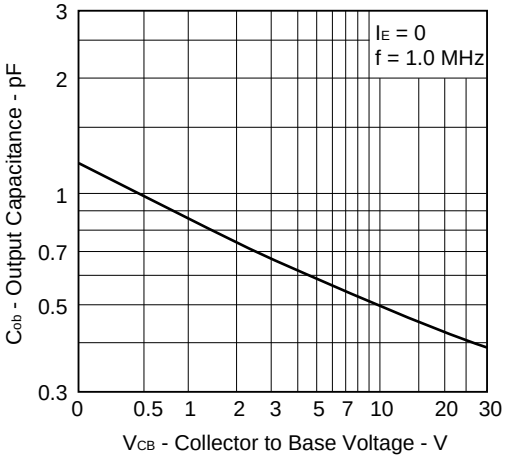
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



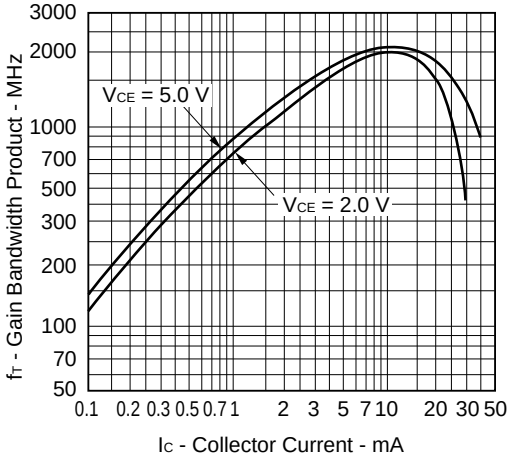
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



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