



SANYO Semiconductors

## DATA SHEET

# 2SB1471 / 2SD2223 — PNP / NPN Epitaxial Planar Silicon Darlington Transistors

## Driver Applications

### Applications

- Motor drivers, printer hammer drivers, relay drivers, voltage regulator control.

### Features

- Suitable for sets whose height is restricted.
- High DC current gain.
- Large current capacity and wide ASO.

### Specifications ( ) : 2SB1471

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		(-)70	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		(-)60	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(-)6	V
Collector Current	I <sub>C</sub>		(-)4	A
Collector Current (Pulse)	I <sub>CP</sub>		(-)6	A
Collector Dissipation	P <sub>C</sub>		1.65	W
		T <sub>C</sub> =25°C	30	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0A			(-)0.1	mA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)5V, I <sub>C</sub> =0A			(-)3.0	mA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)2A	2000	5000		
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)2A		20		MHz
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)4mA		(-1.0)0.9	(-)1.5	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =(-)2A, I <sub>B</sub> =(-)4mA			(-)2.0	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =(-)5mA, I <sub>E</sub> =0A	(-)70			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =(-)50mA, R <sub>BE</sub> =∞	(-)60			V

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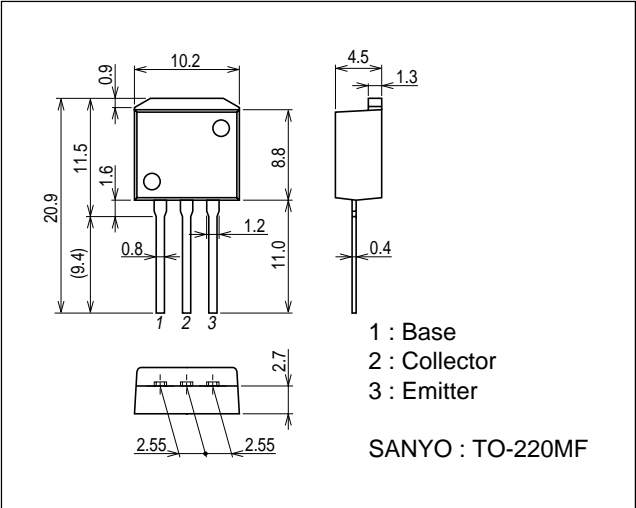
2SB1471 / 2SD2223

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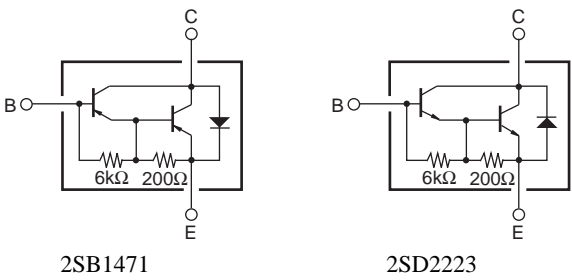
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			min	typ	max	
Turn-On Time	$t_{on}$	See specified Test Circuit.		(0.5)0.6		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit.		(1.4)2.7		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		(1.2)1.6		$\mu s$

Package Dimensions

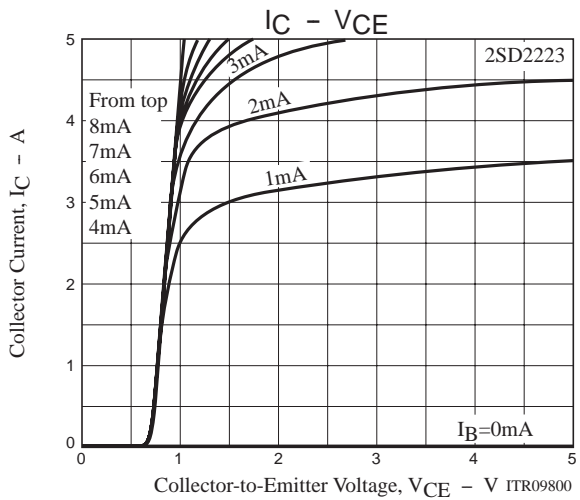
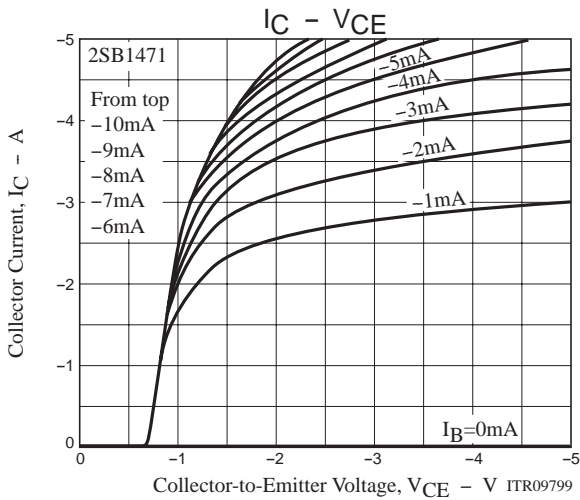
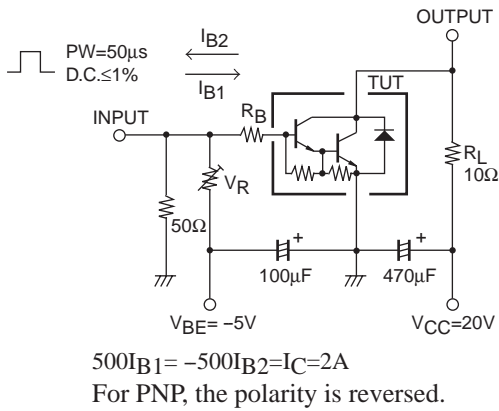
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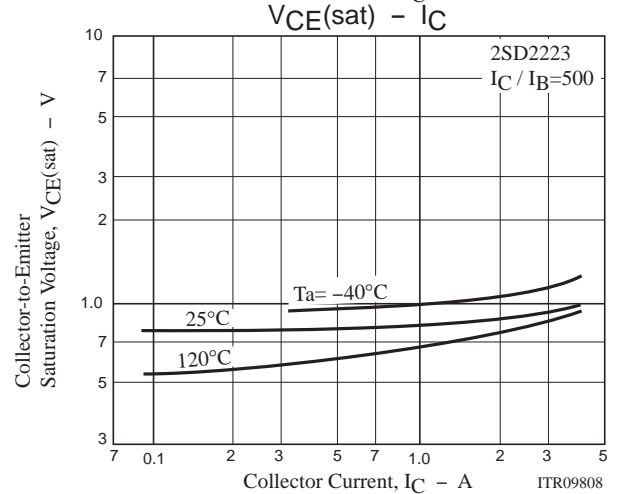
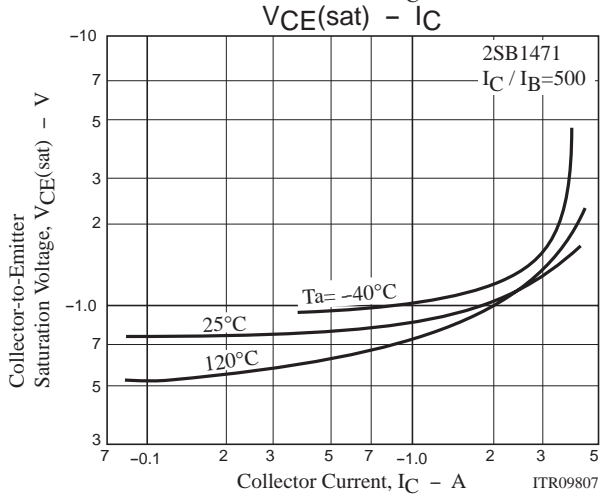
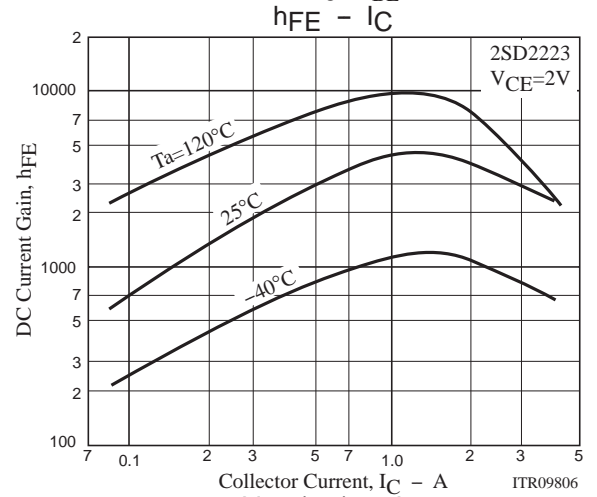
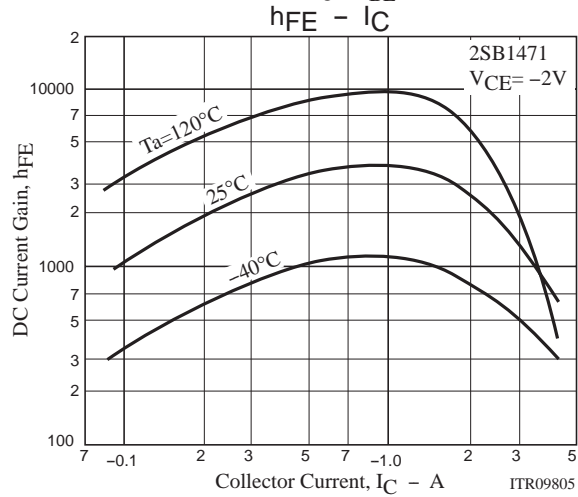
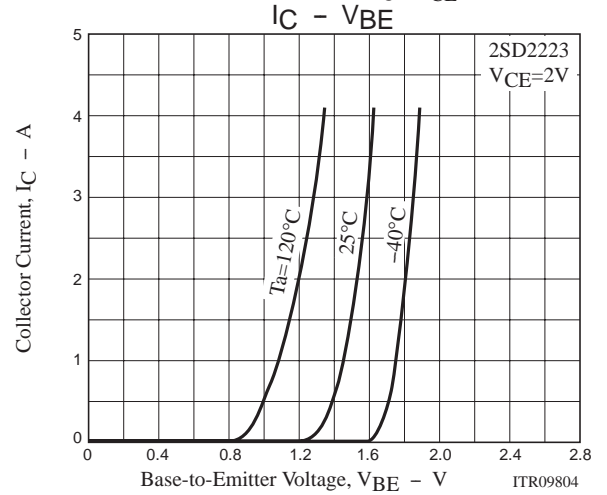
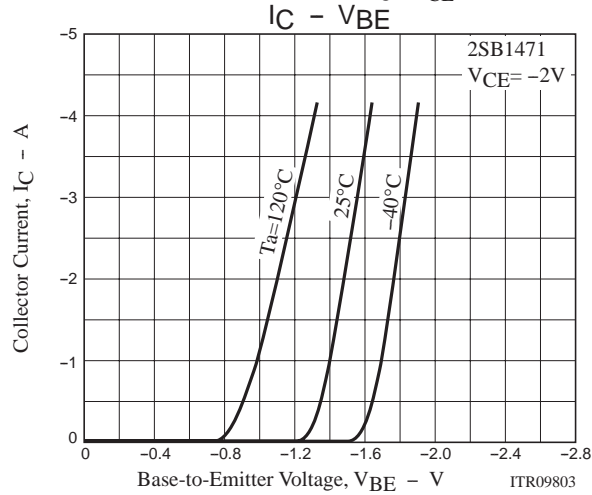
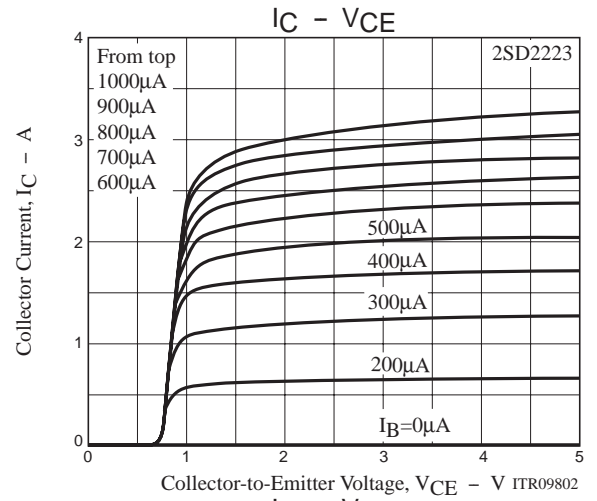
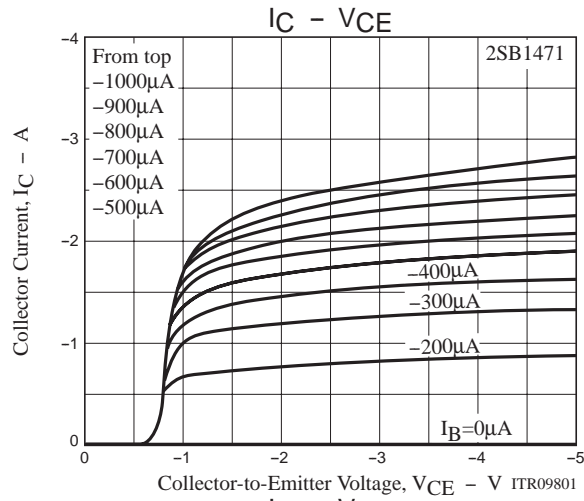


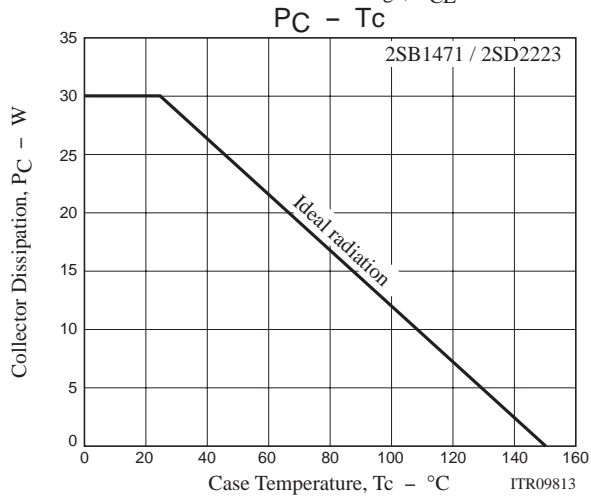
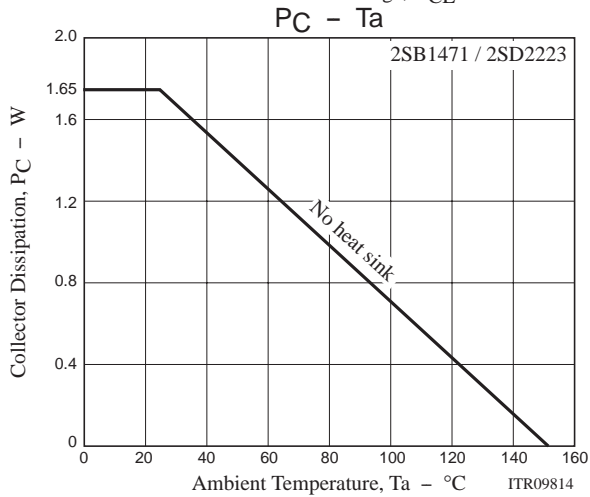
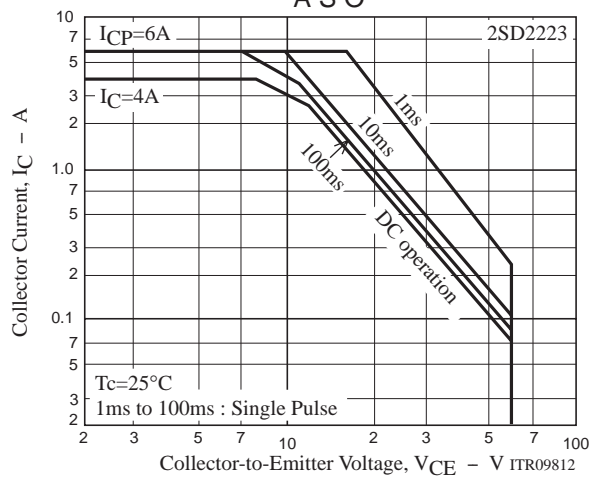
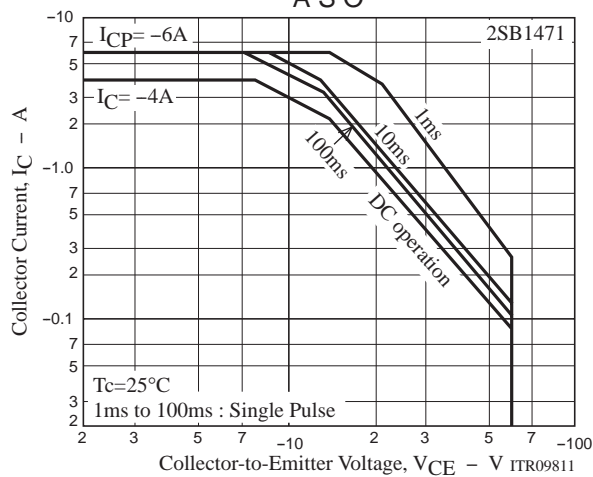
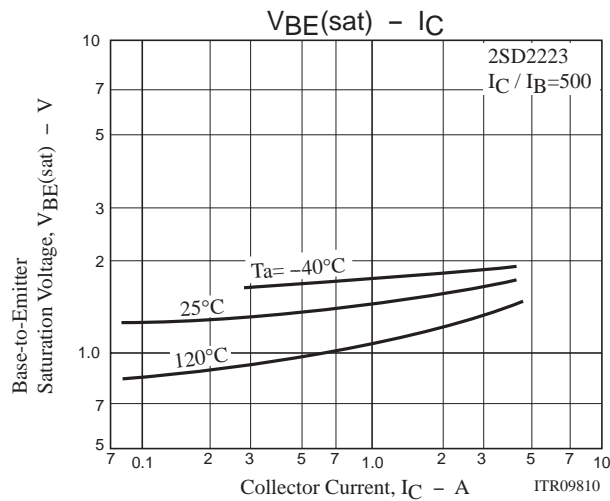
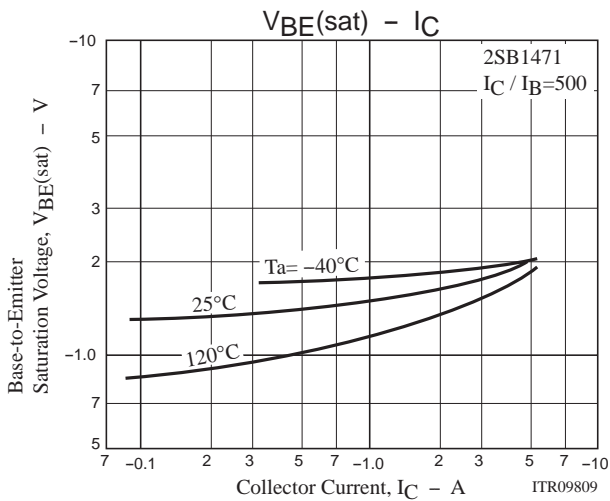
Electrical Connection



Switching Time Test Circuit







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