



# 2SB1664 — PNP Epitaxial Planar Silicon Darlington Transistor

## Driver Applications

### Applications

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

### Features

- High DC current gain.
- Large current capacity and wide ASO.
- Low saturation voltage.

### Specifications

#### Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-110	V
Collector-to-Emitter Voltage	$V_{CEO}$		-100	V
Emitter-to-Base Voltage	$V_{EBO}$		-6	V
Collector Current	$I_C$		-8	A
Collector Current (Pulse)	$I_{CP}$		-12	A
Collector Dissipation	$P_C$	$T_c=25^\circ\text{C}$	35	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

#### Electrical Characteristics at $T_a=25^\circ\text{C}$

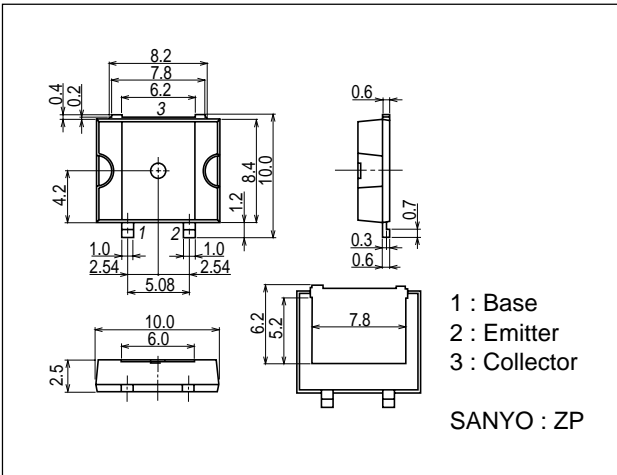
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-80\text{V}, I_E=0\text{A}$			-0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-5\text{V}, I_C=0\text{A}$			-3.0	mA
DC Current Gain	$h_{FE}$	$V_{CE}=-3\text{V}, I_C=-4\text{A}$	1500	4000		
Gain-Bandwidth Product	$f_T$	$V_{CE}=-5\text{V}, I_C=-4\text{A}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-4\text{A}, I_B=-8\text{mA}$		-1.0	-1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-4\text{A}, I_B=-8\text{mA}$			-2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-5\text{mA}, I_E=0\text{A}$	-110			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-50\text{mA}, R_{BE}=\infty$	-100			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		0.7		$\mu\text{s}$
Storage Time	$t_{stg}$	See specified Test Circuit.		1.4		$\mu\text{s}$
Fall Time	$t_f$	See specified Test Circuit.		1.5		$\mu\text{s}$

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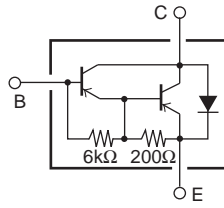
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Package Dimensions

unit : mm (typ)  
7002-003

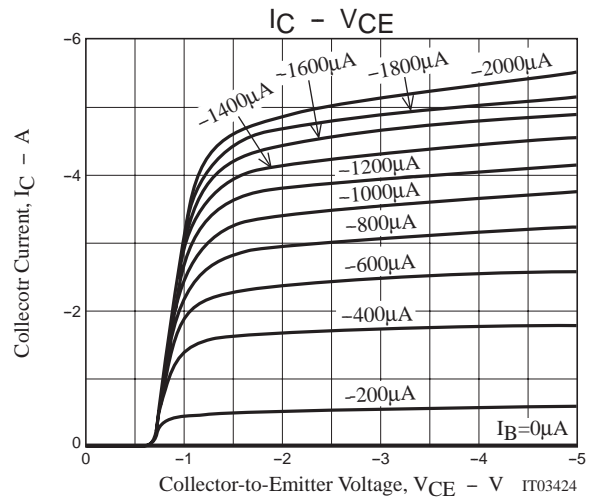
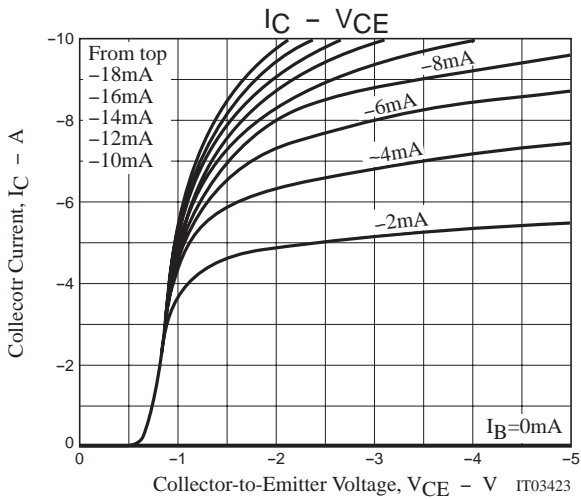
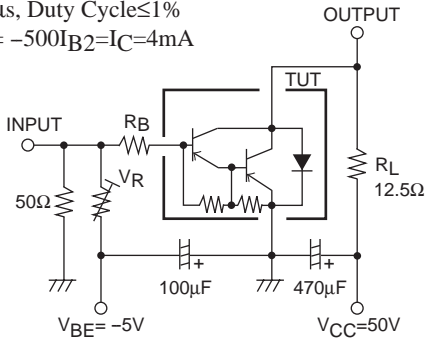


Electrical Connection

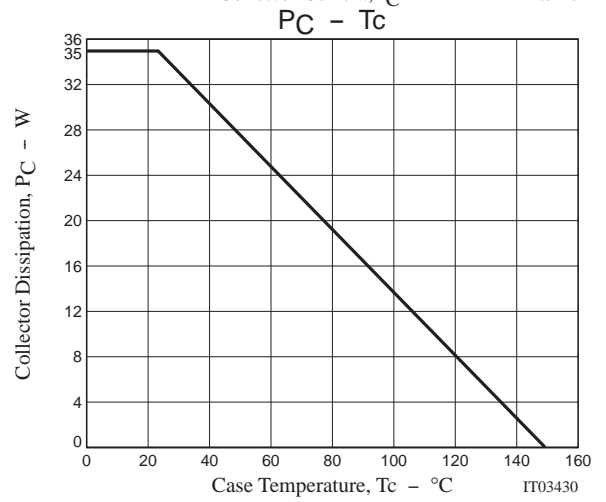
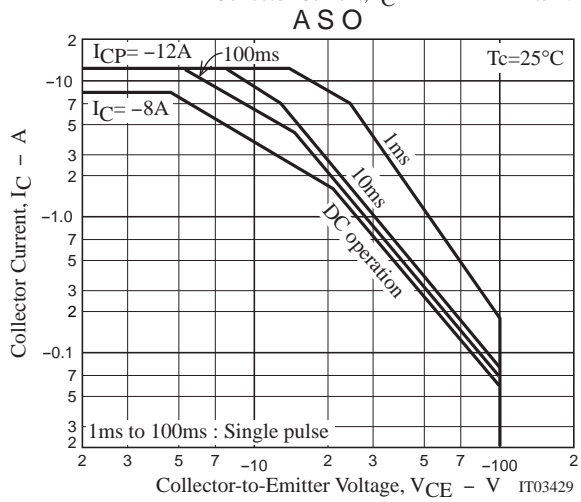
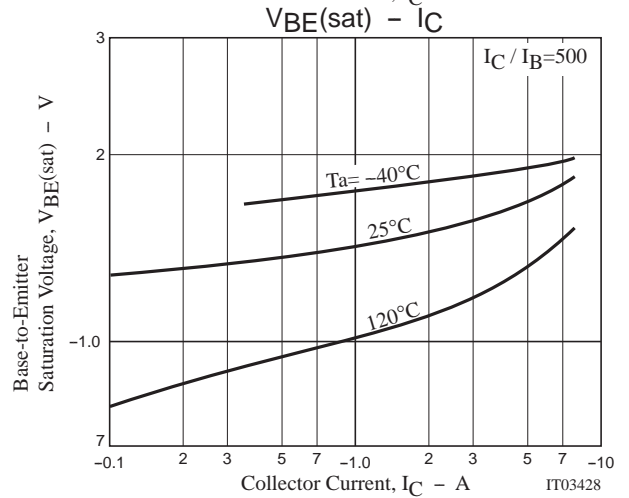
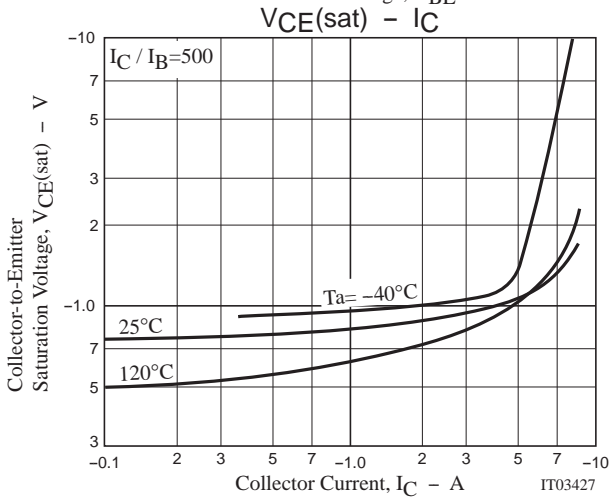
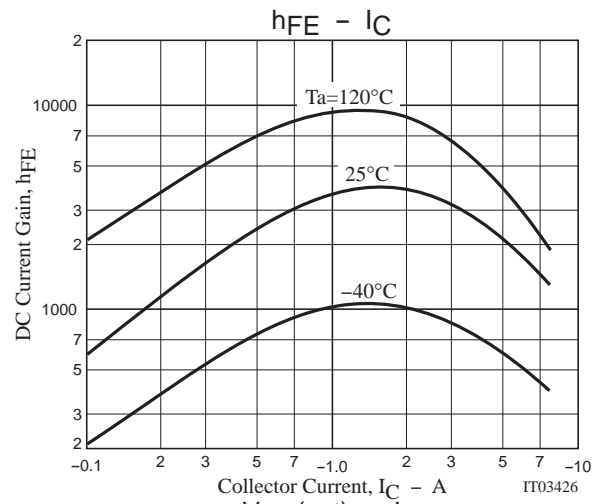
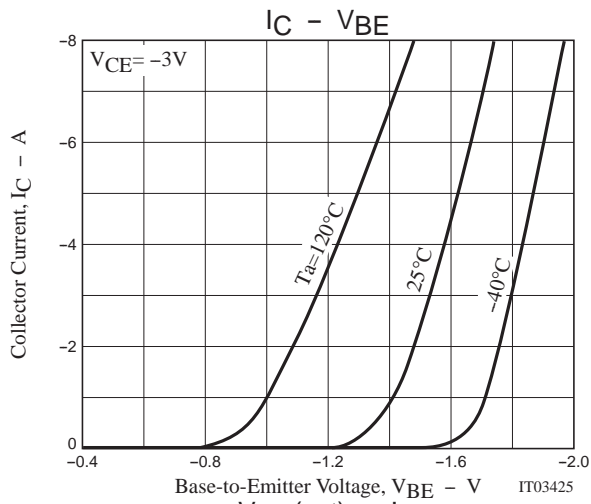


Switching Time Test Circuit

PW=50μs, Duty Cycle≤1%  
500I<sub>B1</sub>= -500I<sub>B2</sub>=I<sub>C</sub>=4mA



# 2SB1664



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