Ordering number : EN8528

SANYO Semiconductors

DATA SHEET

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 Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–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	Tc=25°C	35	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–55 to +150	°C

Electrical Characteristics at Ta=25°C

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

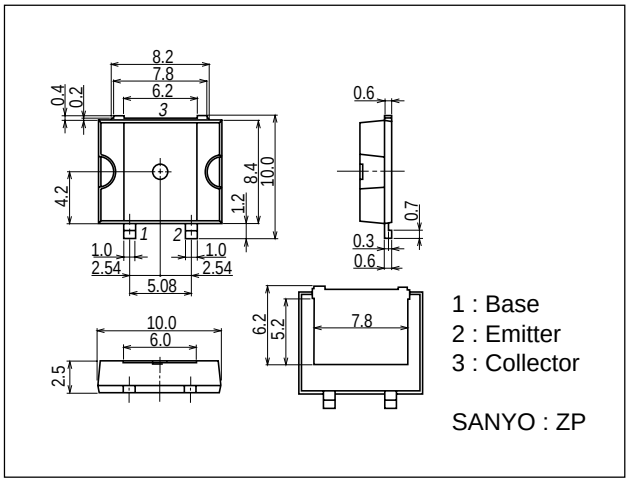
SANYO Semiconductor Co., Ltd.

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

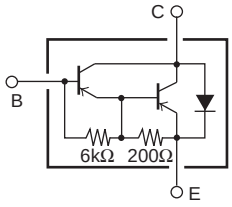
Package Dimensions

unit : mm (typ)

7002-003



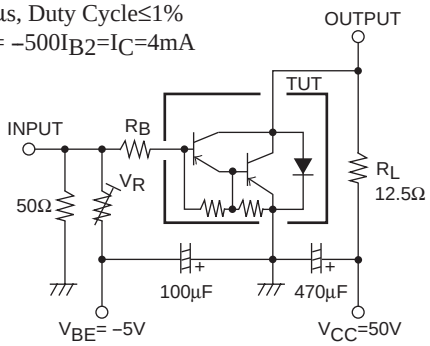
Electrical Connection

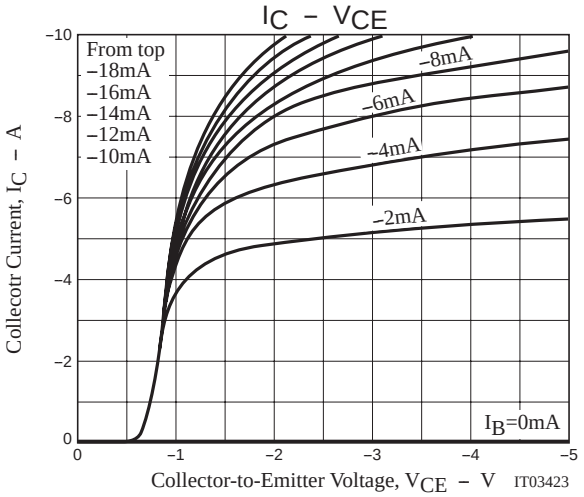


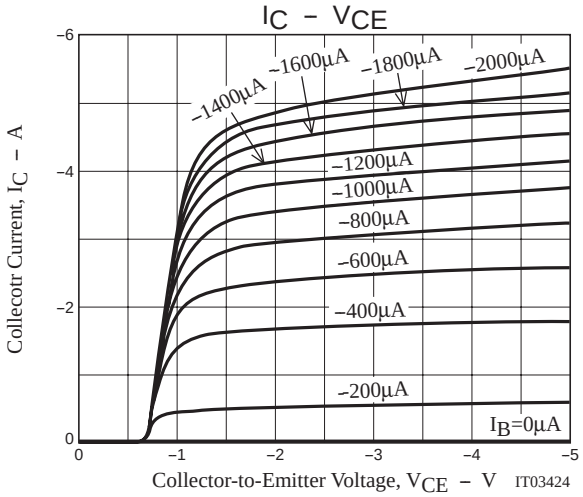
Switching Time Test Circuit

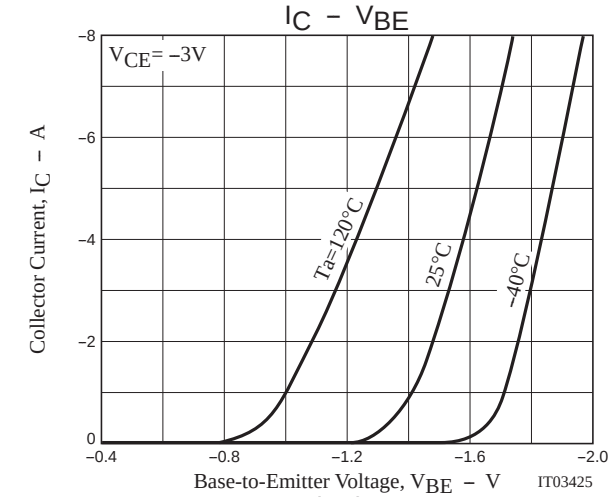
PW=50μs, Duty Cycle≤1%

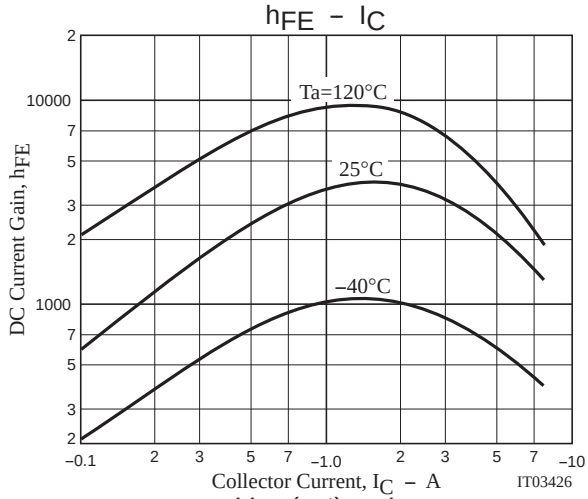
$500I_{B1} = -500I_{B2} = I_C = 4mA$

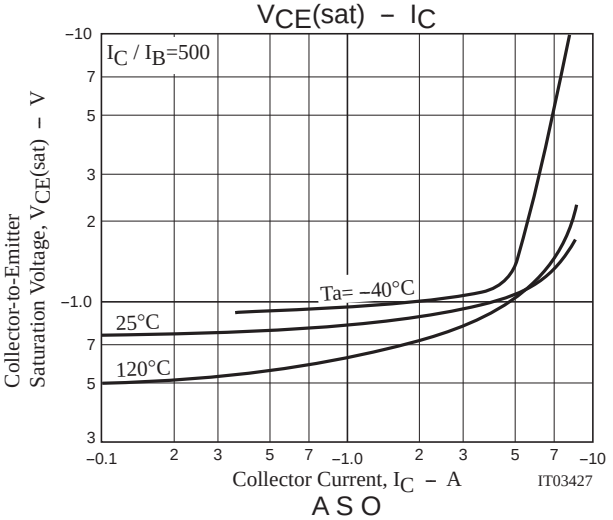


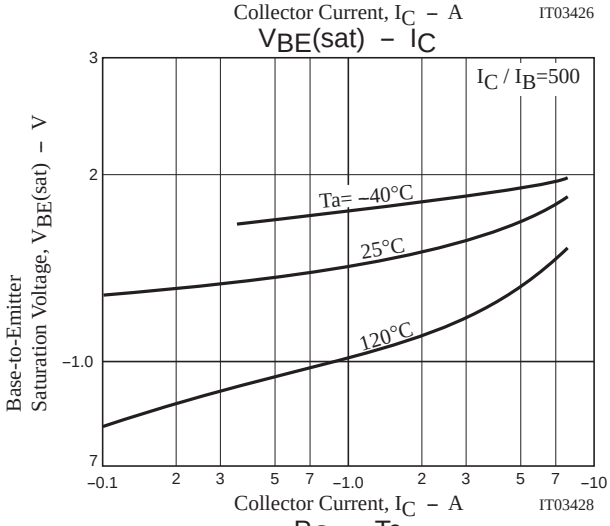


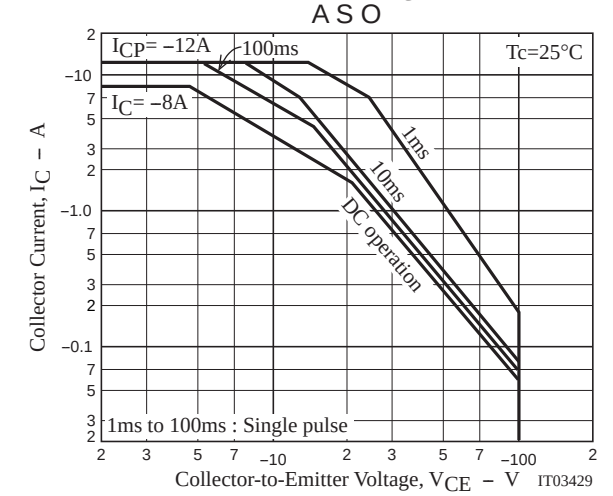


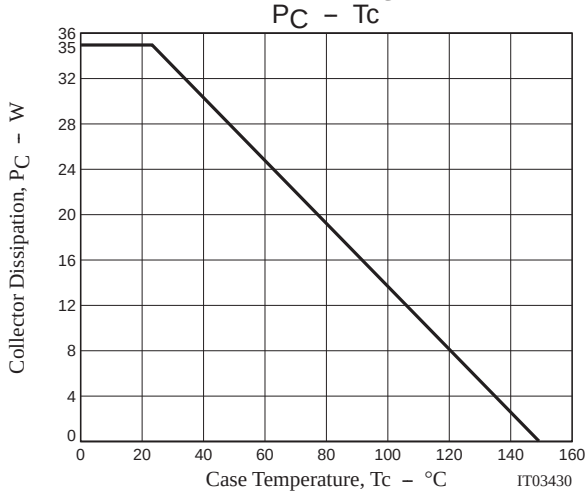

IC – VBE
VCE= –3V
Ta=120°C
25°C
–40°C
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT03425


hFE – IC
Ta=120°C
25°C
–40°C
DC Current Gain, hFE
Collector Current, IC – A
IT03426


VCE(sat) – IC
IC / IB=500
Ta= –40°C
25°C
120°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT03427


VBE(sat) – IC
IC / IB=500
Ta= –40°C
25°C
120°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT03428


A S O
ICP= –12A
100ms
Tc=25°C
IC= –8A
1ms
10ms
DC operation
1ms to 100ms : Single pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT03429


PC – Tc
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT03430