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ON Semiconductor DATA SHEET

2SB826 / 2SD1062 — PNP / NPN Epitaxial Planar Silicon Transistors 50V / 12A Switching Applications

Applications

- Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

Features

- Low-saturation collector-to-emitter voltage : $V_{CE(sat)} = -0.5V(\text{PNP}), 0.4V(\text{NPN})$ max.
- Wide ASO leading to high resistance to breakdown.

Specifications () : 2SB826

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)60	V
Collector-to-Emitter Voltage	V_{CE0}		(-)50	V
Emitter-to-Base Voltage	V_{EB0}		(-)6	V
Collector Current	I_C		(-)12	A
Collector Current (Pulse)	I_{CP}		(-)15	A
Collector Dissipation	P_C		1.75	W
		$T_c=25^\circ\text{C}$	40	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}	$V_{CB} = (-)40V, I_E = 0A$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0A$			(-)0.1	mA

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE1}	$V_{CE}=(-)2V, I_C=(-)1A$	70*		280*	
	h_{FE2}	$V_{CE}=(-)2V, I_C=(-)5A$	30			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5V, I_C=(-)1A$		10		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)6A, I_B=(-)0.3A$			$(-0.5)0.4$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0A$	(-60)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-50)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)1mA, I_C=0A$	(-6)			V
Turn-ON Time	t_{on}	See specified Test Circuit.		$(0.2)0.1$		μs
Storage Time	t_{stg}	See specified Test Circuit.		$(0.4)1.2$		μs
Fall Time	t_f	See specified Test Circuit.		$(0.1)0.05$		μs

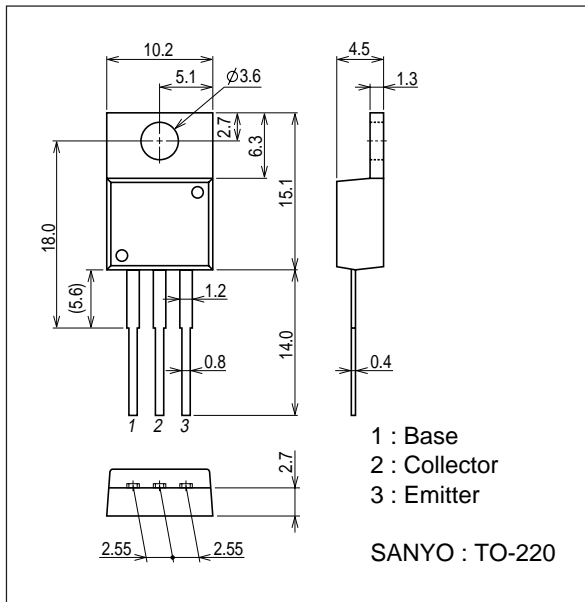
* : The 2SB826 / 2SD1062 are classified by 1A h_{FE} as follows :

Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

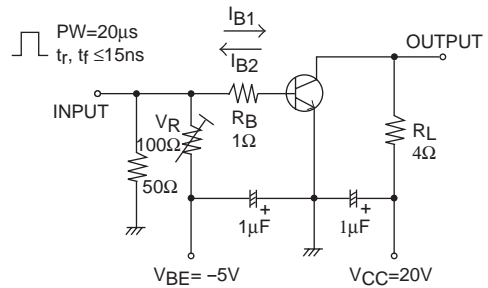
Package Dimensions

unit : mm (typ)

7507-001

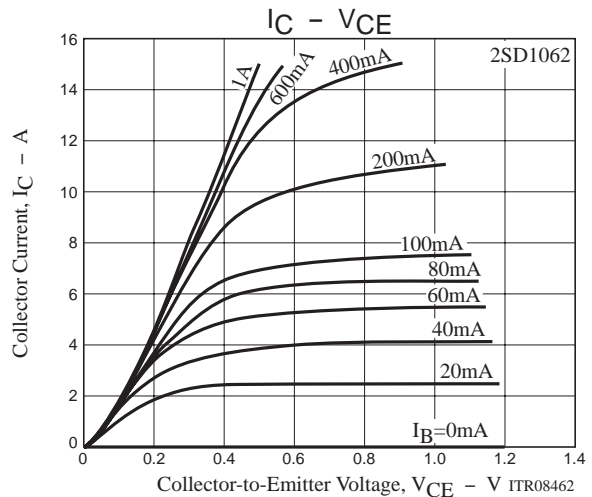
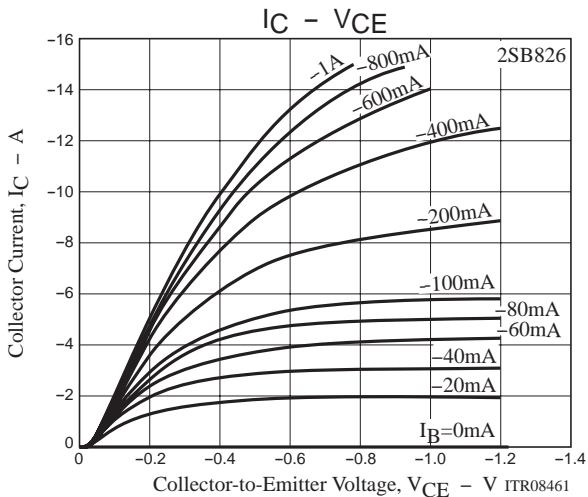


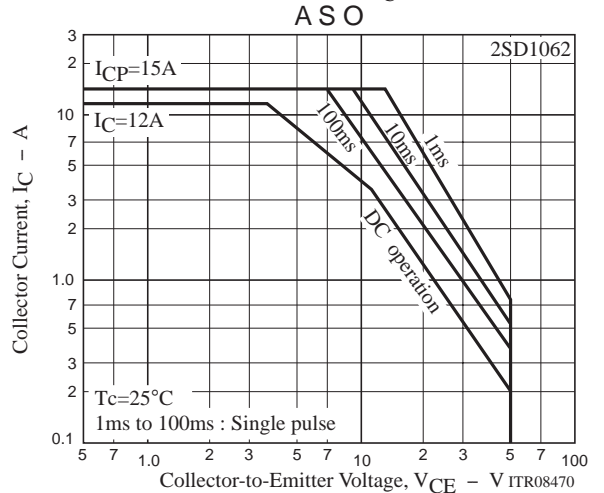
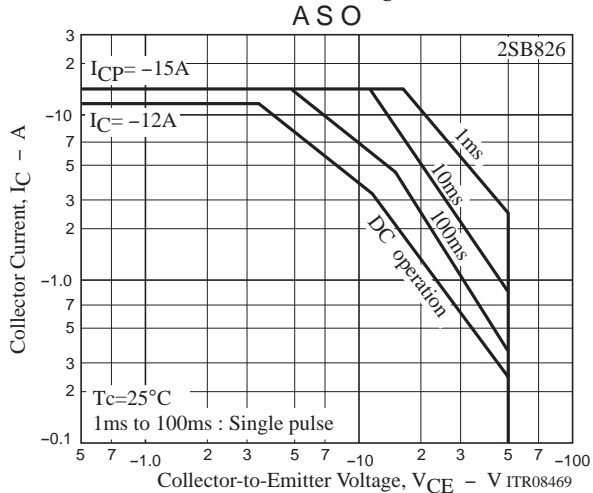
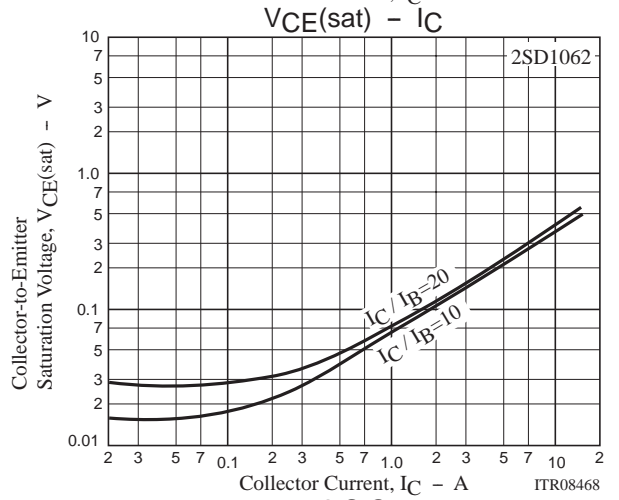
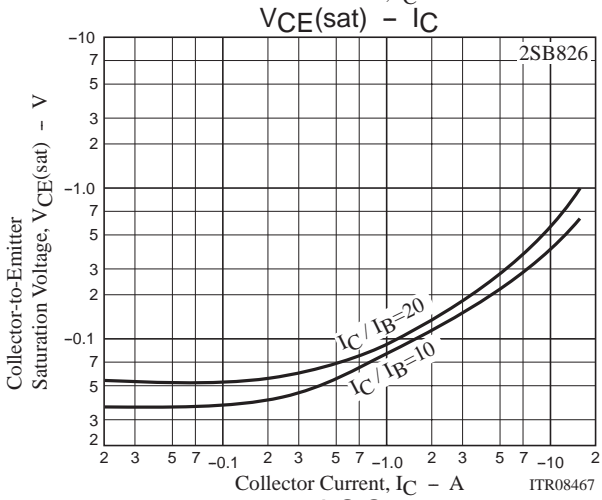
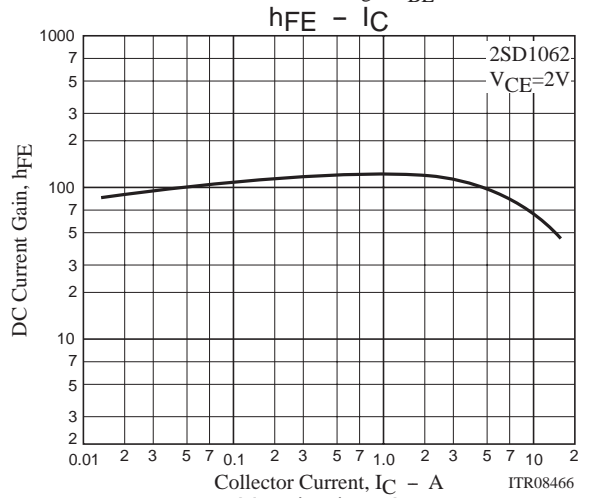
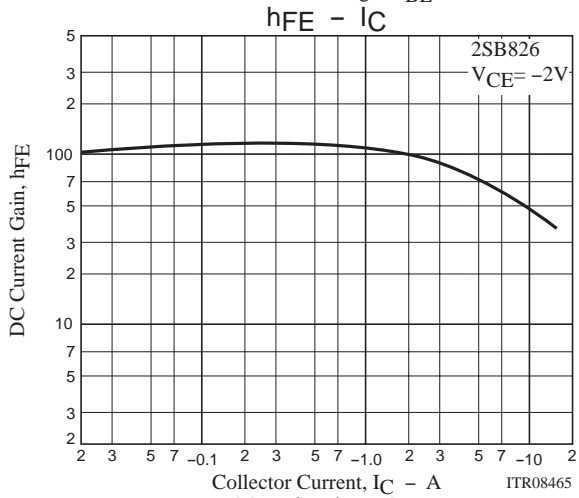
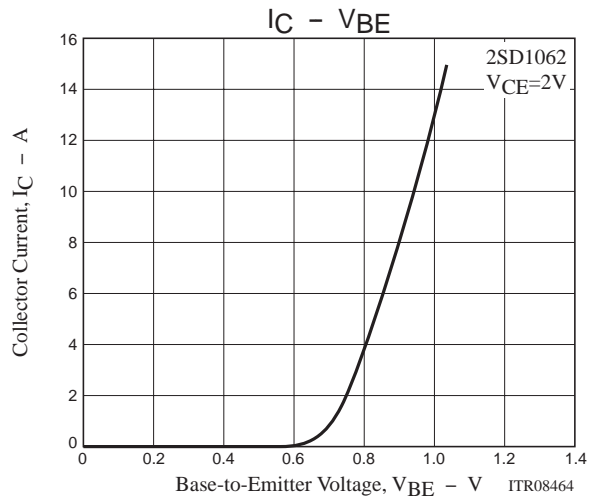
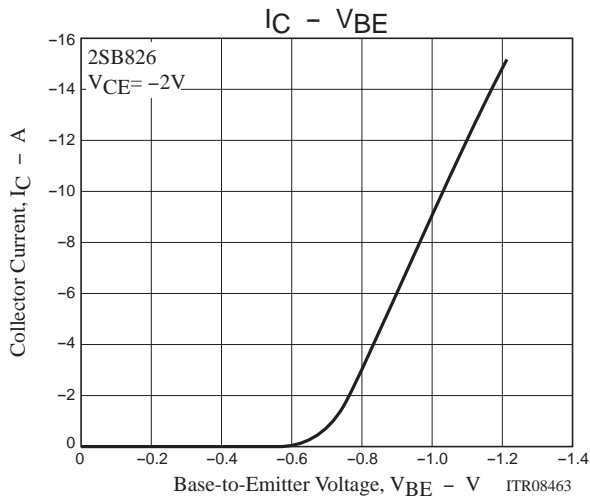
Switching Time Test Circuit



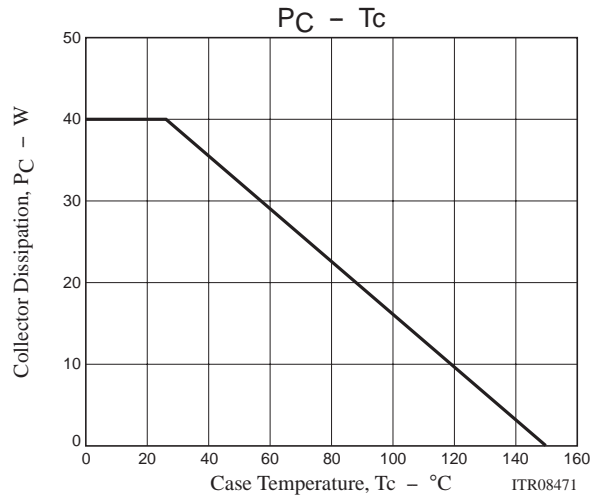
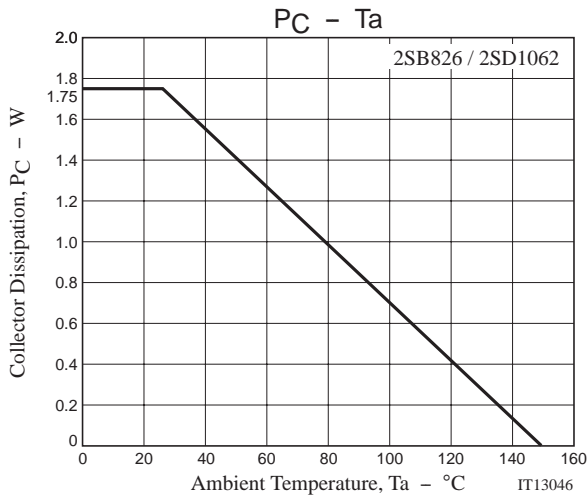
$$I_C = 10I_{B1} = -10I_{B2} = 5A$$

For PNP, the polarity is reversed.





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