



2SB1134/2SD1667

50V/5A Switching Applications

Applications

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

Features

- Low-saturation collector-to-emitter voltage : $V_{CE(sat)} = -0.4V$ max/ $I_C = (-)3A$, $I_B = (-)0.3A$.
- Micaless package facilitating mounting.

() : 2SB1134

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)5	A
Collector Current (Pulse)	I_{CP}		(-)9	A
Collector Dissipation	P_C		2	W
		Mounted on ceramic board (250mm \times 0.8mm)	25	W
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40V$, $I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V$, $I_C = 0$			(-)0.1	mA
DC Current Gain	h_{FE1}	$V_{CE} = (-)2V$, $I_C = (-)1A$	70*		280*	
	h_{FE2}	$V_{CE} = (-)2V$, $I_C = (-)3A$	30			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5V$, $I_C = (-)1A$		30		MHz

* : The 2SB1134/2SD1667 are classified by 1A h_{FE} as follows :

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

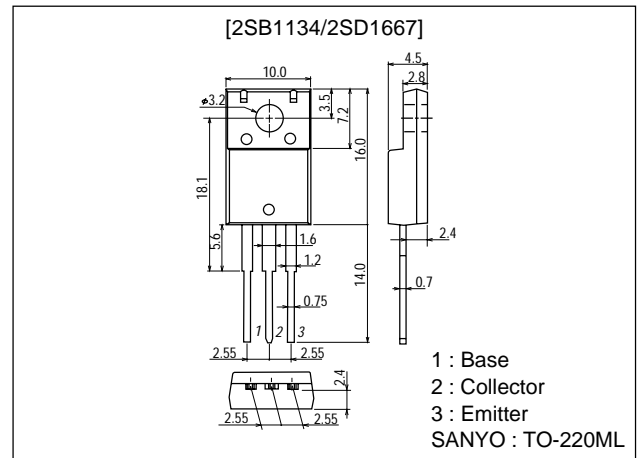
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Package Dimensions

unit:mm

2041A

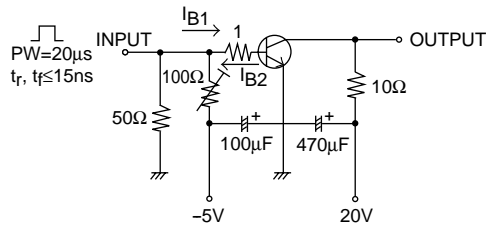


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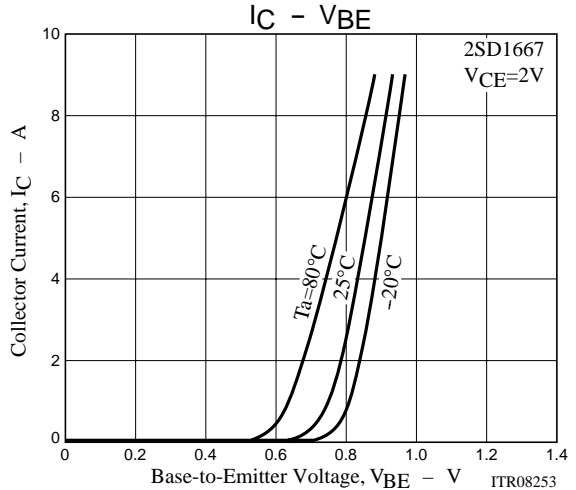
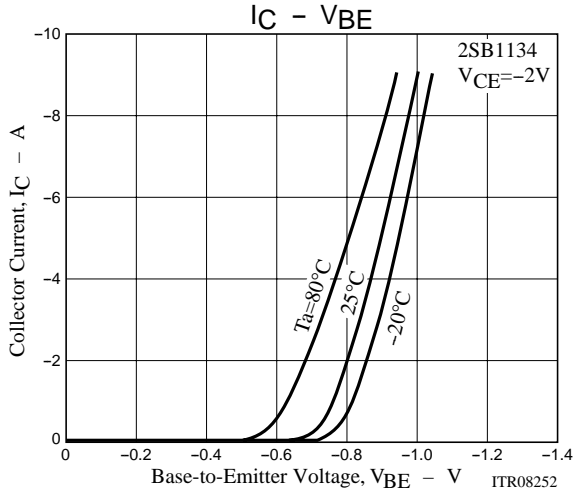
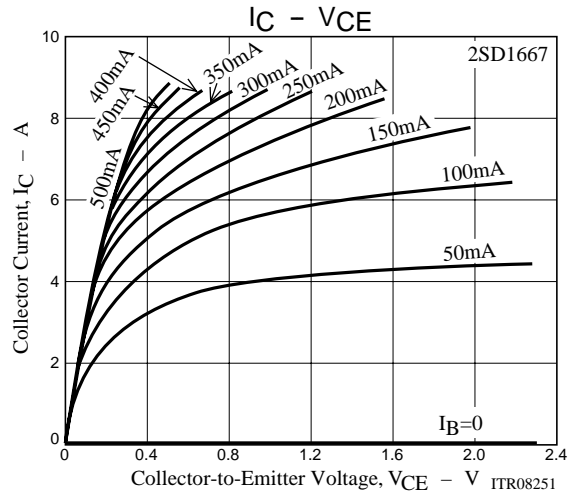
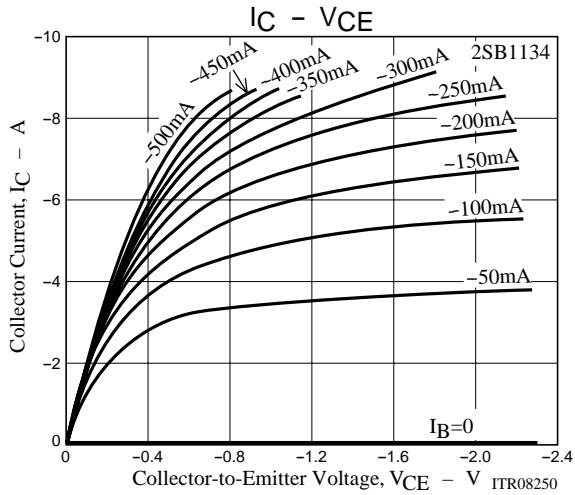
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB} = (-)10V, f = 1MHz$		100 (160)		pF pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)3A, I_B = (-)0.3A$			(-)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)1mA, I_C = 0$	(-)6			V
Rise Time	t_{on}	See specified Test Circuit.		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit.		(0.7)		μs
				1.4		μs
Fall Time	t_f	See specified Test Circuit.		0.2		μs

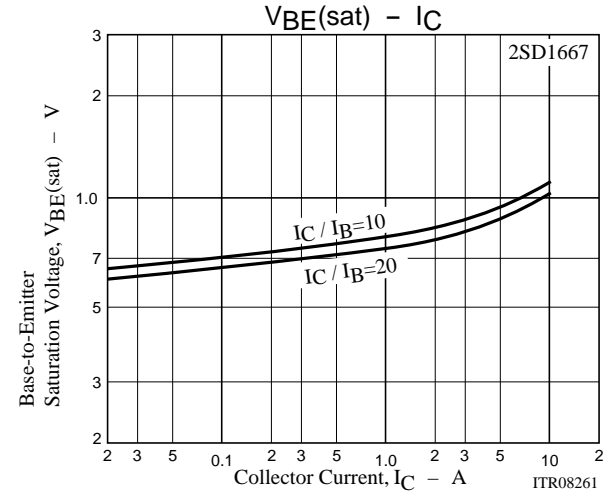
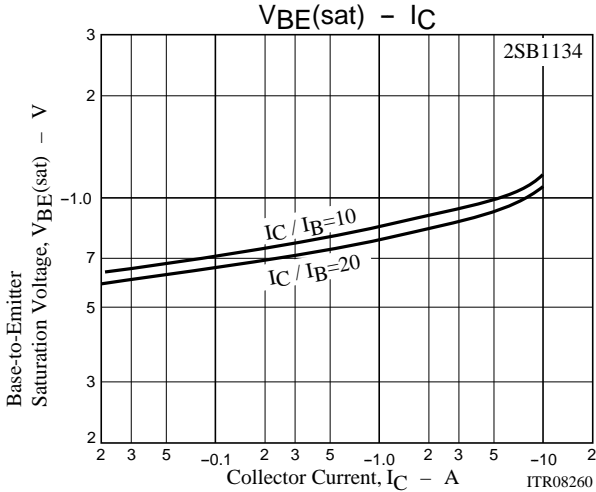
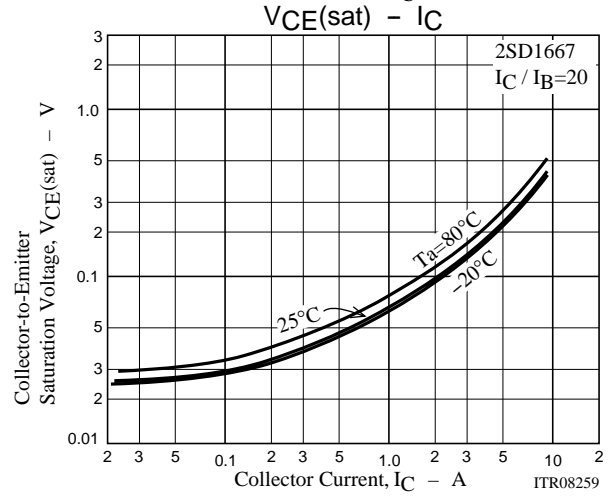
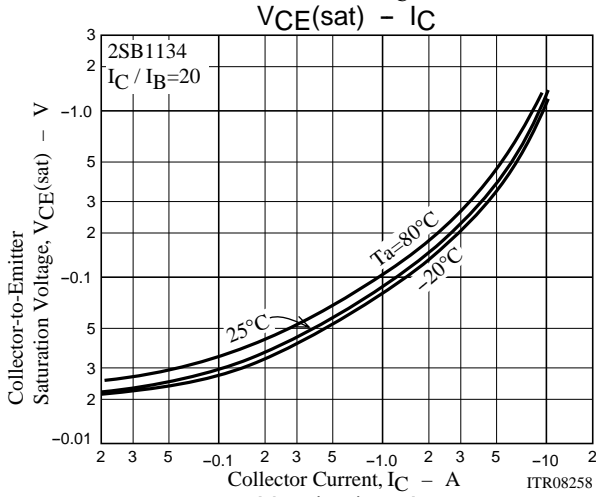
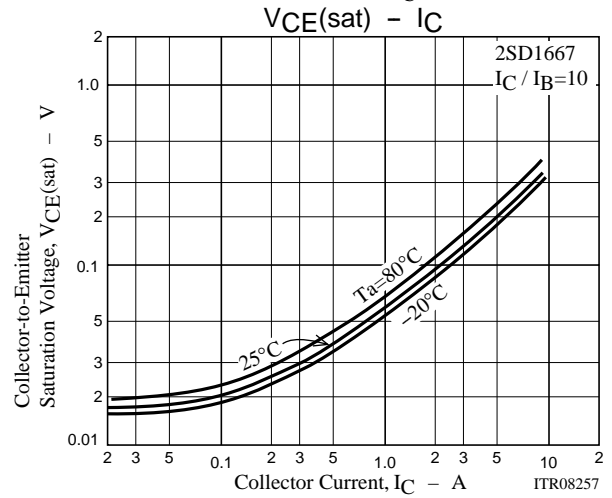
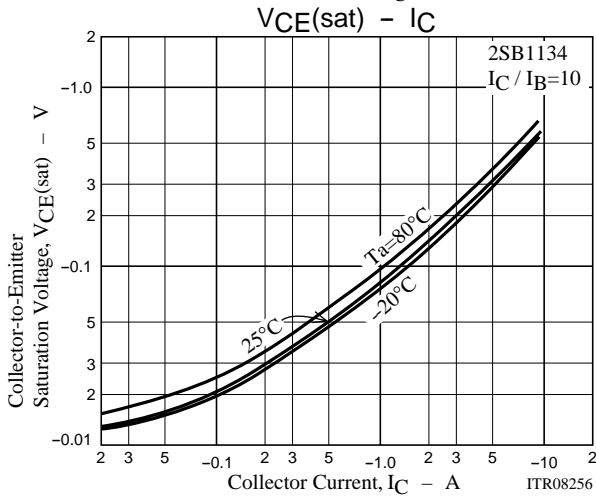
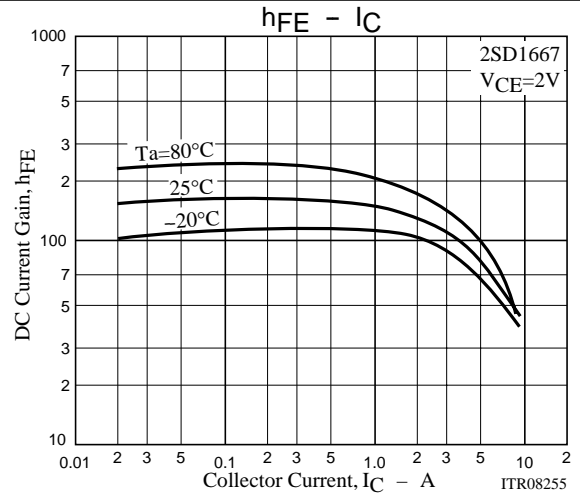
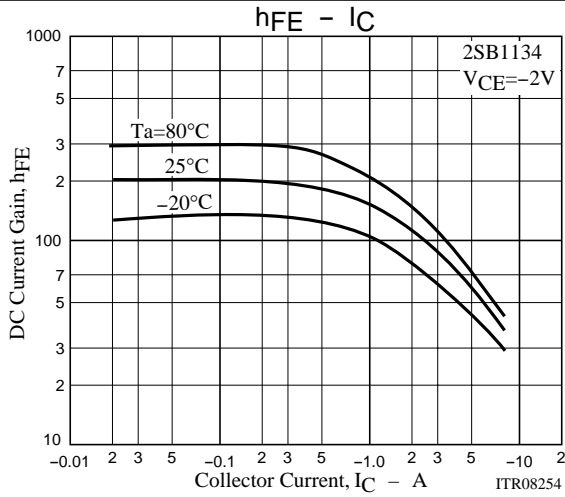
Switching Time Test Circuit



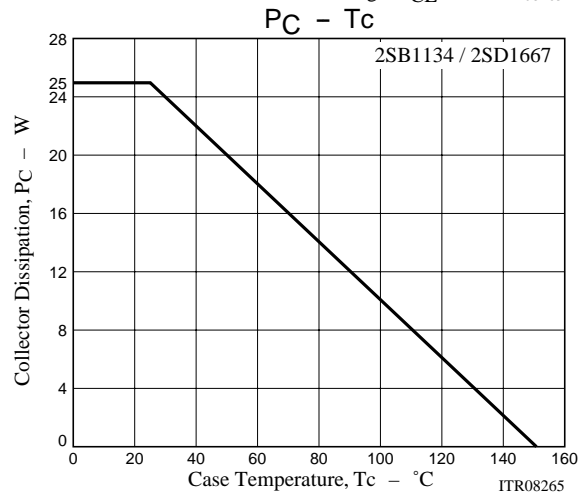
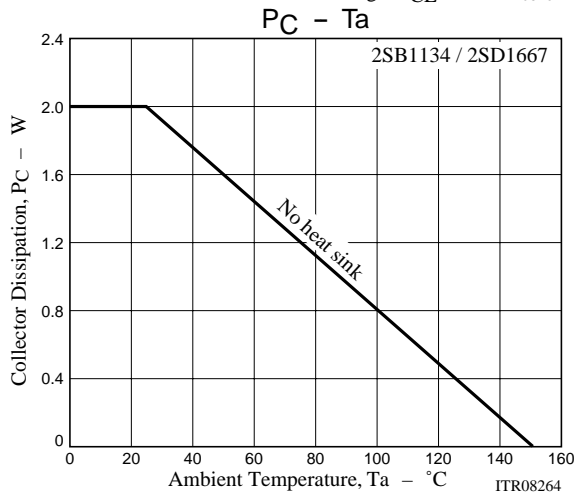
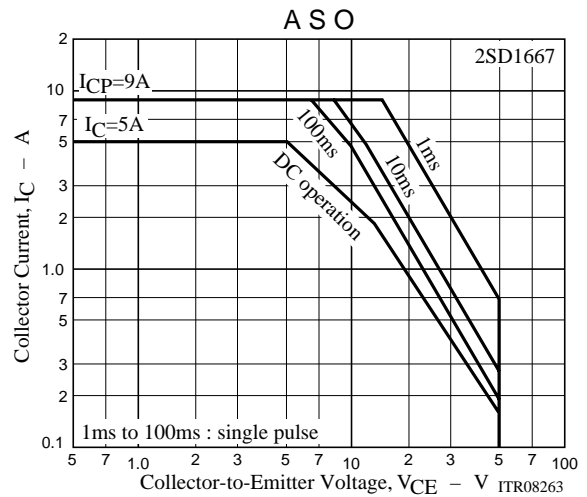
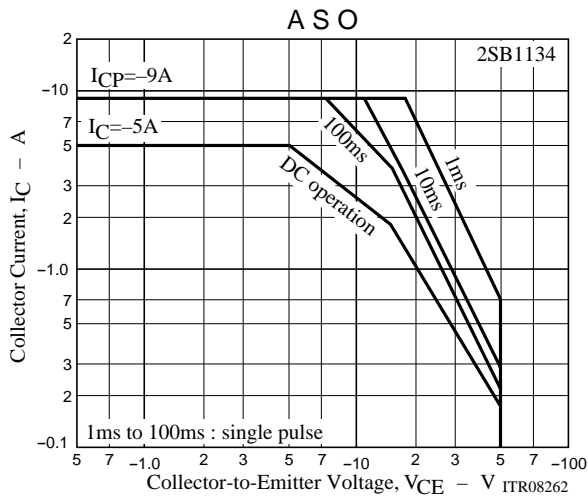
$10I_{B1} = -10I_{B2} = I_C = 2A$
(For PNP, the polarity is reversed.)



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