



2SA1784/2SC4644

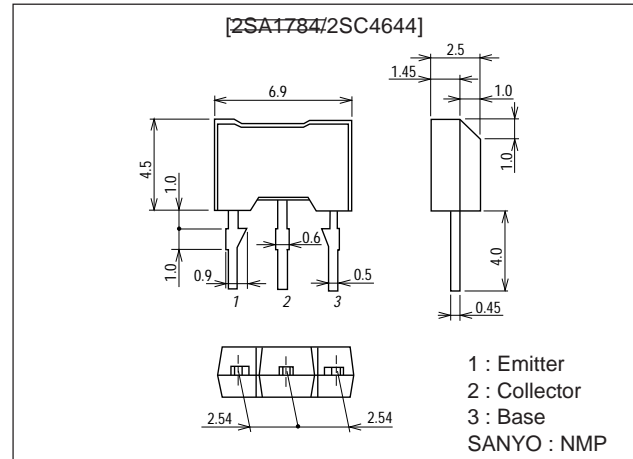
High Voltage Driver Applications

Features

- Adoption of MBIT process.
- High breakdown voltage ($V_{CEO} \geq 400V$).
- Excellent linearity of h_{FE} .

Package Dimensions

unit:mm
2064A



() : 2SA1784

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		≈ 400	V
Collector-to-Emitter Voltage	V_{CEO}		≈ 400	V
Emitter-to-Base Voltage	V_{EBO}		≈ 5	V
Collector Current	I_C		≈ 200	mA
Collector Current (Pulse)	I_{CP}		≈ 400	mA
Collector Dissipation	P_C		1	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}	$V_{CB} = \approx 300V, I_E = 0$			≈ 0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = \approx 4V, I_C = 0$			≈ 0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = \approx 10V, I_C = \approx 50mA$	60*		200*	
Gain-Bandwidth Product	f_T	$V_{CE} = \approx 30V, I_C = \approx 10mA$		70		MHz
Output Capacitance	C_{ob}	$V_{CB} = \approx 30V, f = 1MHz$		≈ 4		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = \approx 30V, f = 1MHz$		≈ 3		pF

* : The 2SA1784/2SC4644 are classified by 50mA h_{FE} as follows :

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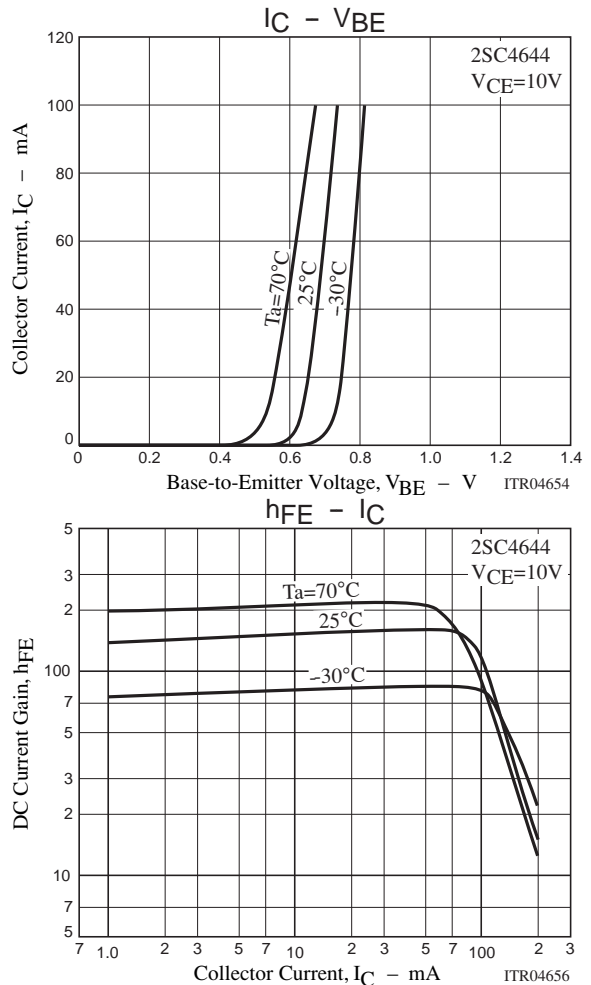
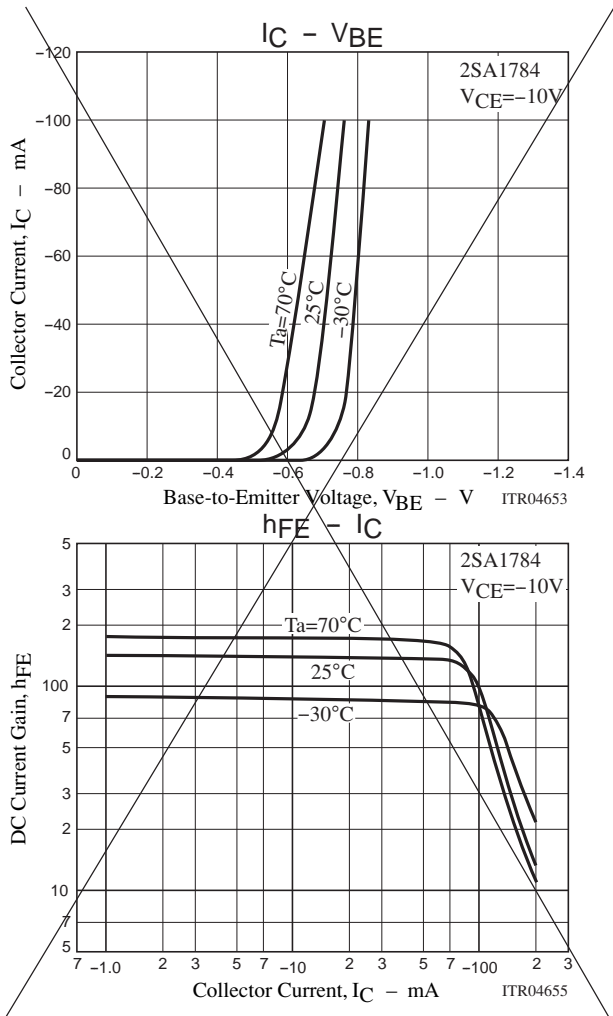
Rank	D	E
h_{FE}	60 to 120	100 to 200

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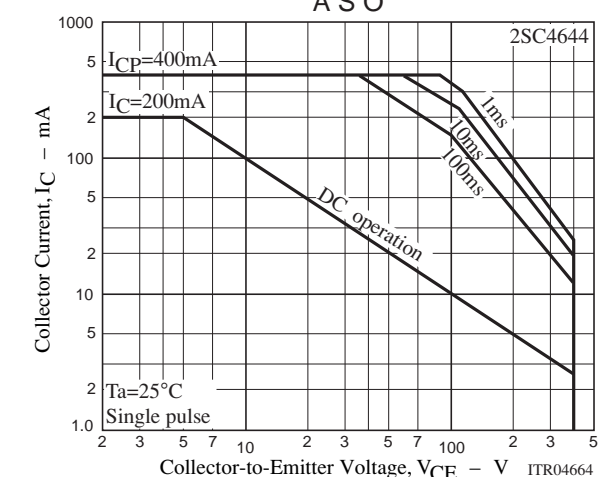
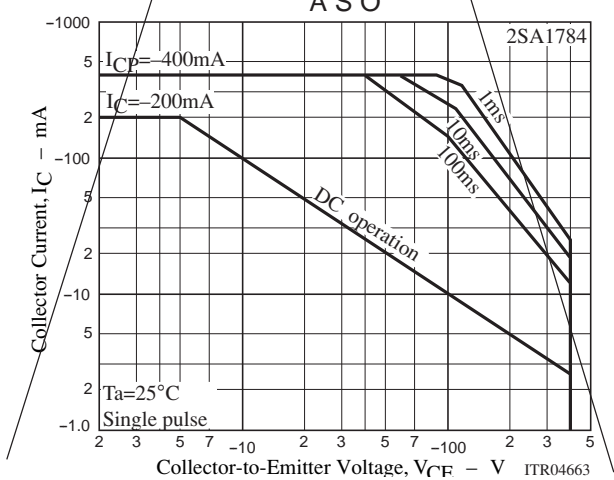
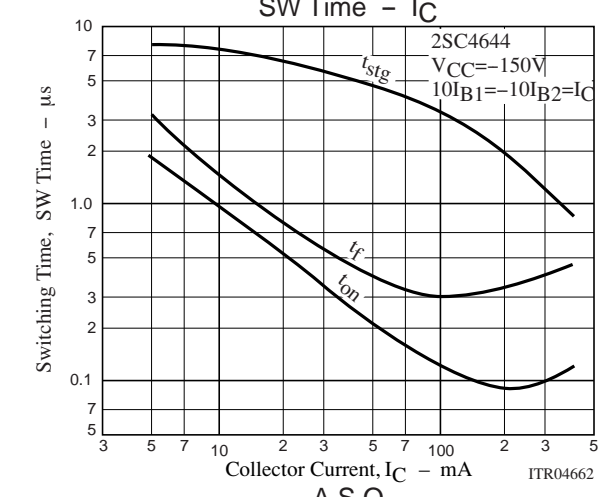
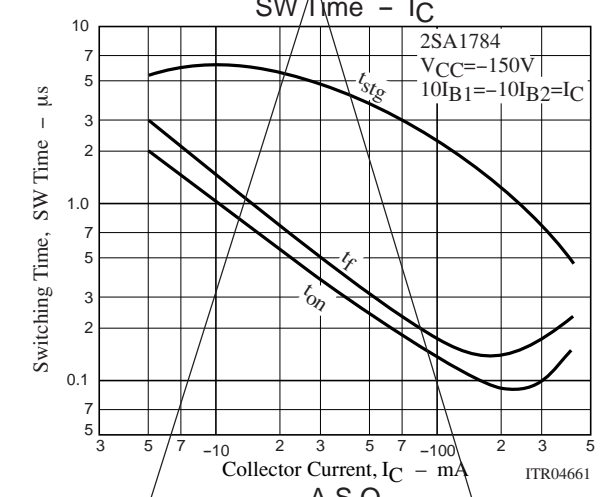
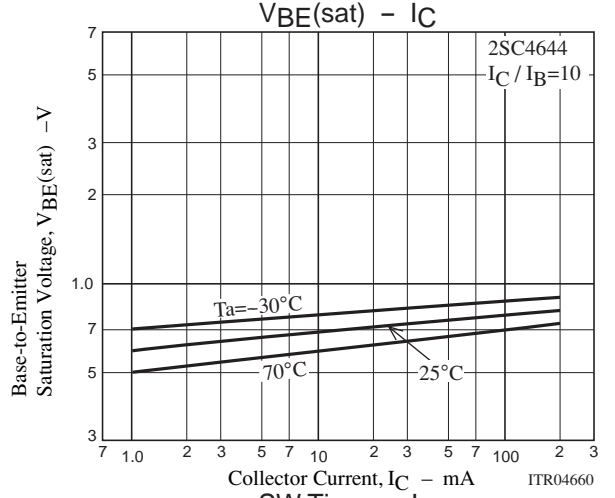
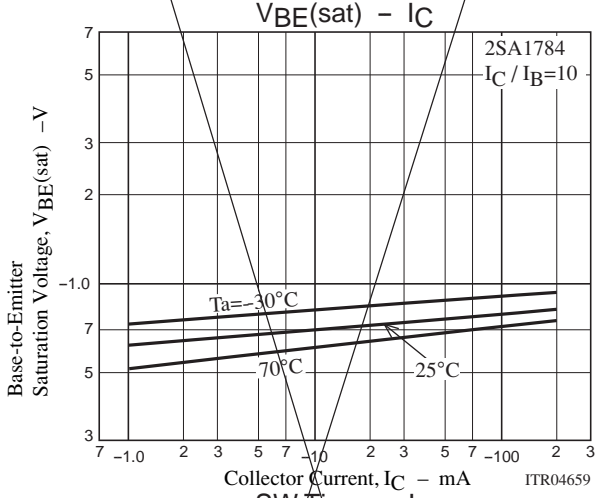
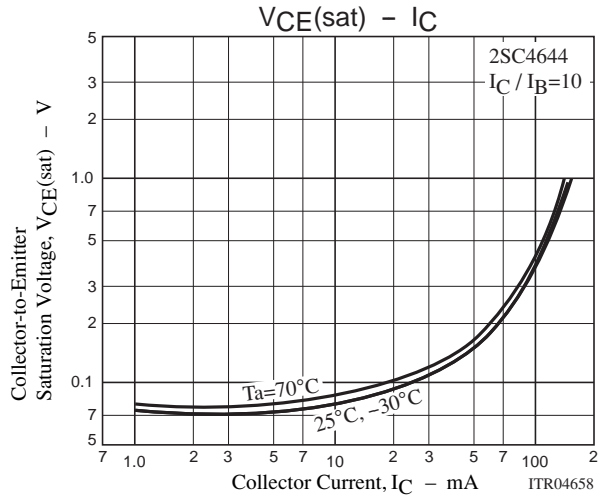
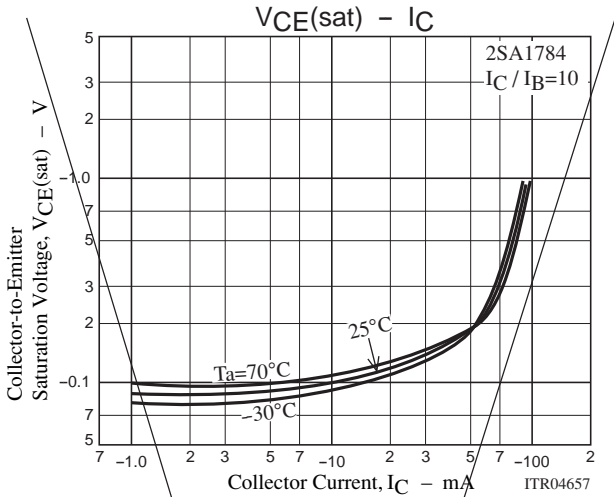
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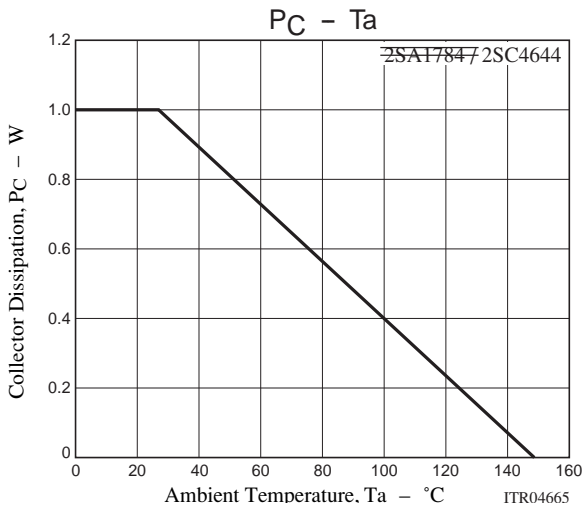
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (\pm)50\text{mA}, I_B = (\pm)5\text{mA}$			(=0.8) 0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (\pm)50\text{mA}, I_B = (\pm)5\text{mA}$			$(\pm)1.0$	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (\pm)10\mu\text{A}, I_E = 0$	$(\pm)400$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (\pm)1\text{mA}, R_{BE} = \infty$	$(\pm)400$			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (\pm)10\mu\text{A}, I_C = 0$	$(\pm)5$			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.25		μs
Turn-OFF Time	t_{off}	See specified Test Circuit		5.0		μs

Switching Time Test Circuit



2SA1784/2SC4644





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