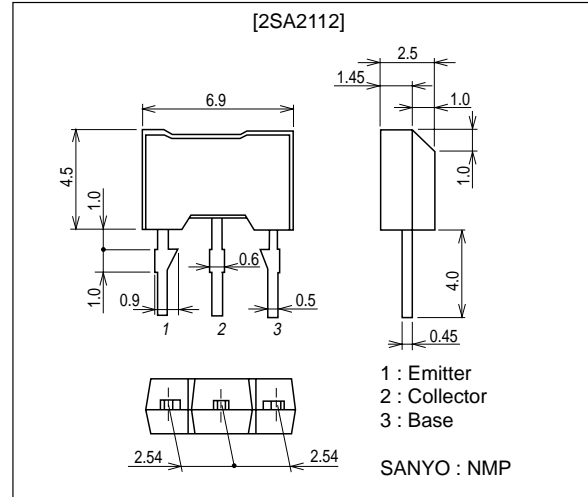


**2SA2112****High Current Switching Applications****Applications**

- DC-DC converter, relay drivers, lamp drivers, motor drivers, strobes.

Features

- Adoption of MBIT process.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

Package Dimensionsunit : mm
2064A**Specifications****Absolute Maximum Ratings** at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		-50	V
Collector-to-Emitter Voltage	V_{CES}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-6	V
Collector Current	I_C		-3	A
Collector Current (Pulse)	I_{CP}		-6	A
Base Current	I_B		-600	mA
Collector Dissipation	P_C		1	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}	$V_{CB}=-40\text{V}, I_E=0$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			-1	μA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=-10\text{V}, I_C=-500\text{mA}$		390		MHz

Continued on next page.

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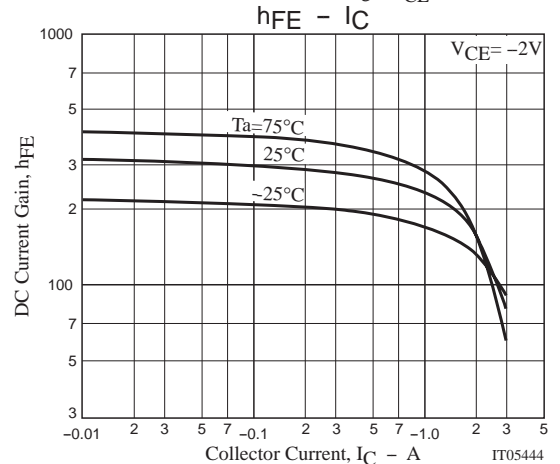
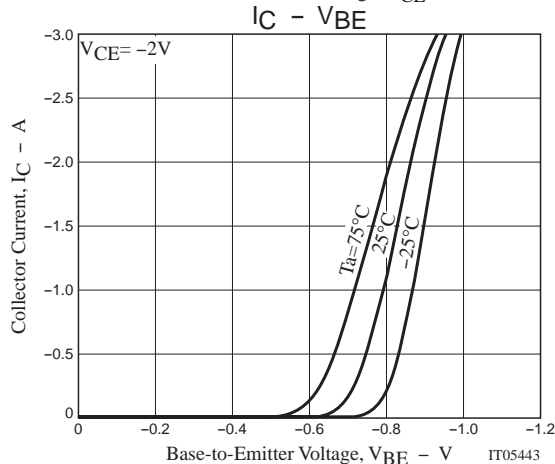
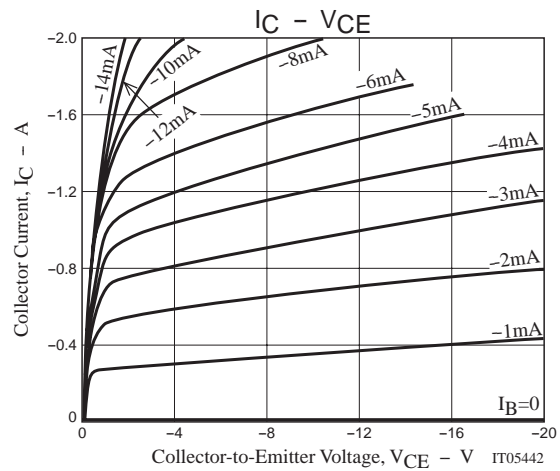
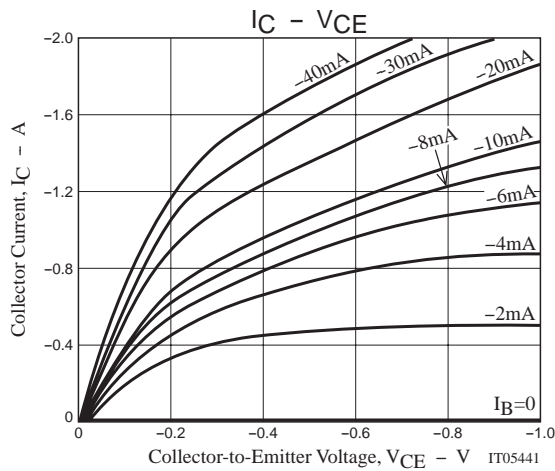
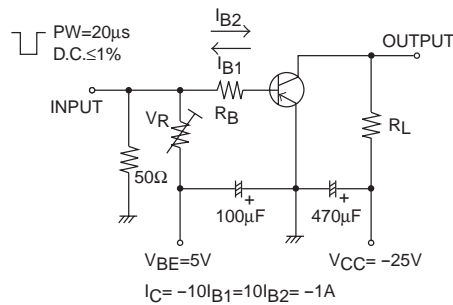
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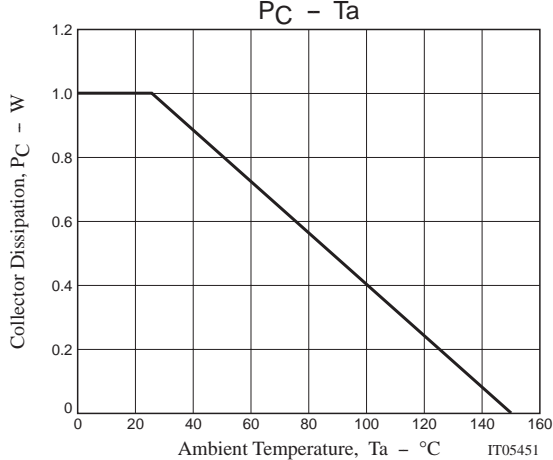
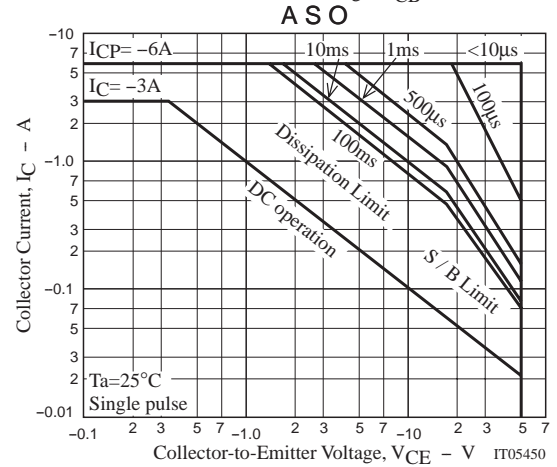
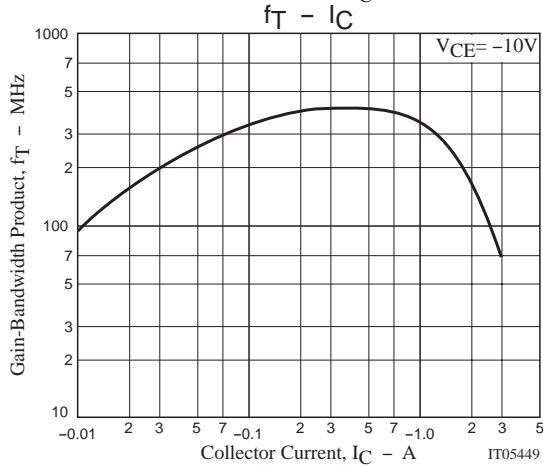
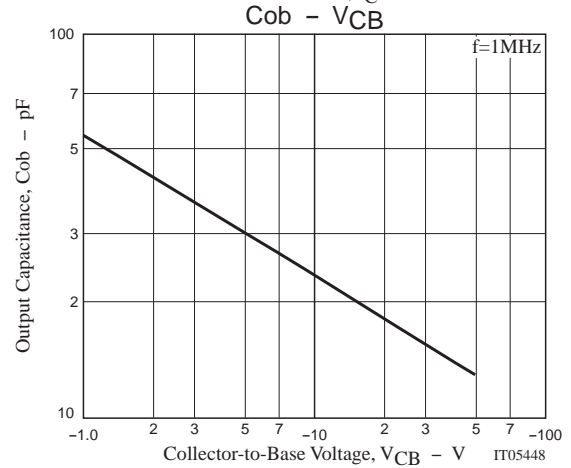
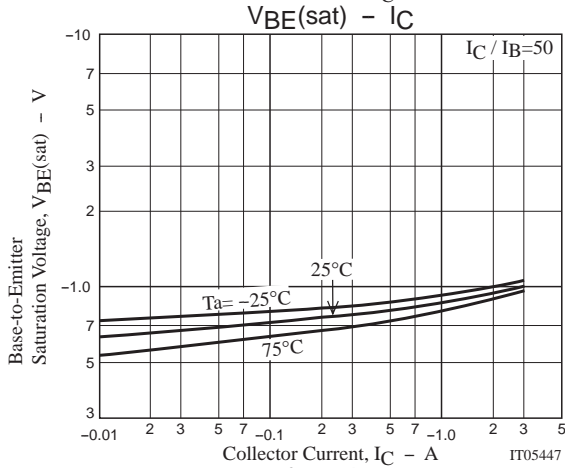
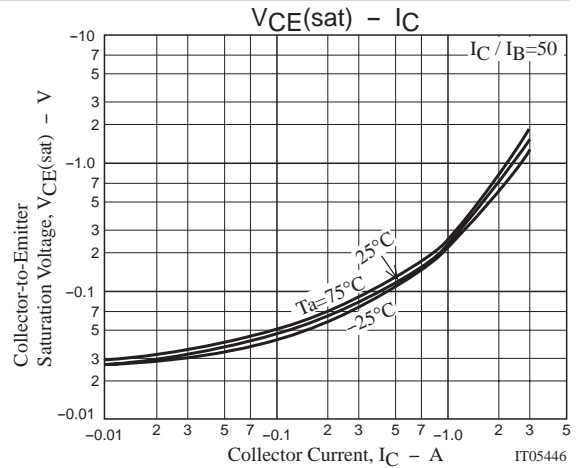
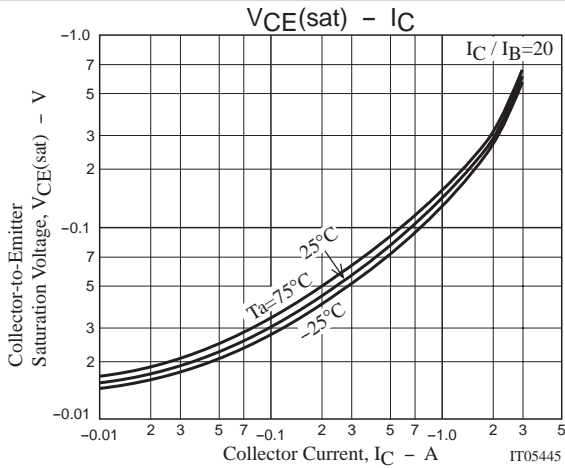
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	Cob	$V_{CB}=-10V, f=1MHz$		24		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=-1A, I_B=-50mA$		-135	-270	mV
	$V_{CE(sat)2}$	$I_C=-2A, I_B=-100mA$		-260	-700	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-2A, I_B=-100mA$		-0.88	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=-100\mu A, R_{BE}=0$	-50			V
	$V_{(BR)CEO}$	$I_C=-1mA, R_{BE}=\infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		230		ns
Fall Time	t_f	See specified Test Circuit.		18		ns

Switching Time Test Circuit



2SA2112



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