



2SA2099 / 2SC5888

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

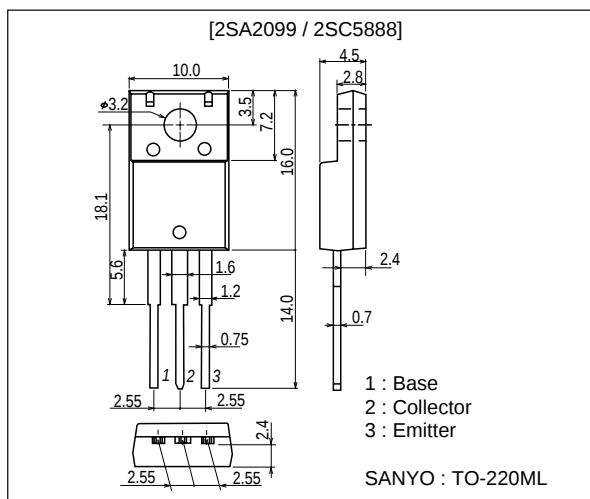
Features

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

Package Dimensions

unit : mm

2041A



Specifications

() : 2SA2099

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-50)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)10	A
Collector Current (Pulse)	I_{CP}		(-)13	A
Base Current	I_B		(-)2	A
Collector Dissipation	P_C		2	W
		$T_c=25^{\circ}\text{C}$	25	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0$			$(-)10$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0$			$(-)10$	μA

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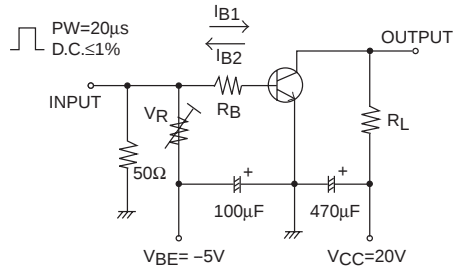
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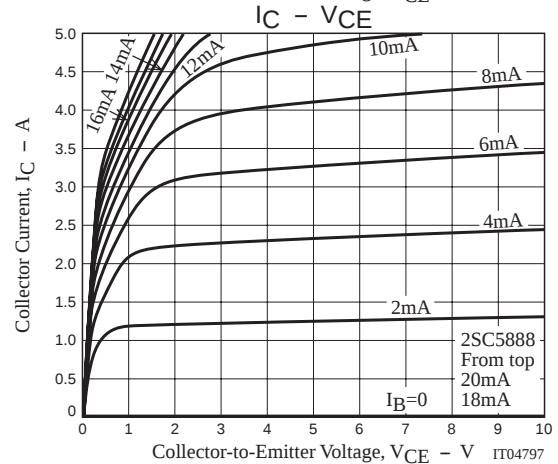
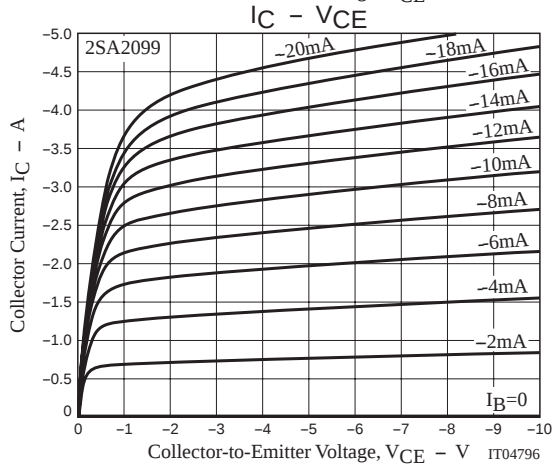
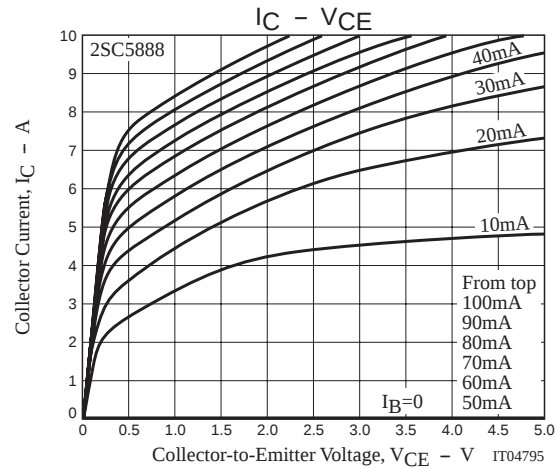
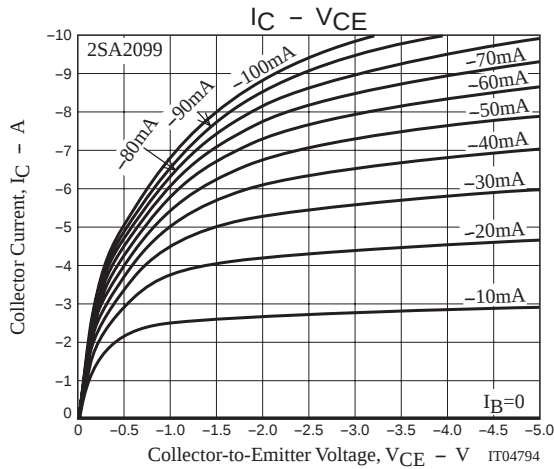
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)1A$	200		(560)700	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5V, I_C=(-)1A$		(130)200		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		90(60)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)5A, I_B=(-)250mA$		(-250)180	(-500)360	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)5A, I_B=(-)250mA$		(-)0.93	(-)1.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)100\mu A, I_E=0$	(-50)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu A, I_C=0$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		(70)40		ns
Storage Time	t_{stg}	See specified Test Circuit.		(650)1000		ns
Fall Time	t_f	See specified Test Circuit.		(60)80		ns

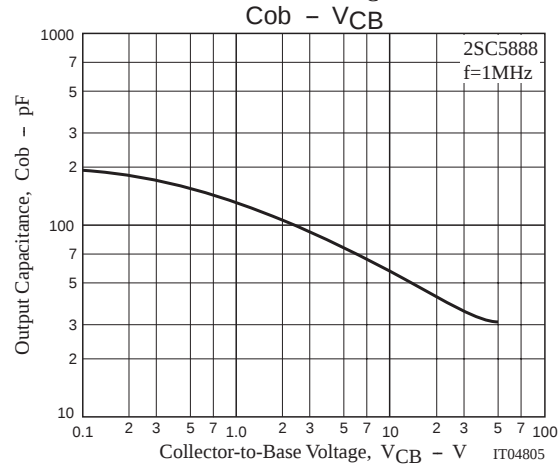
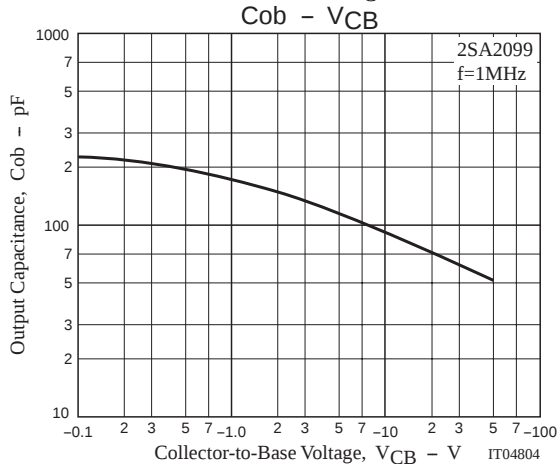
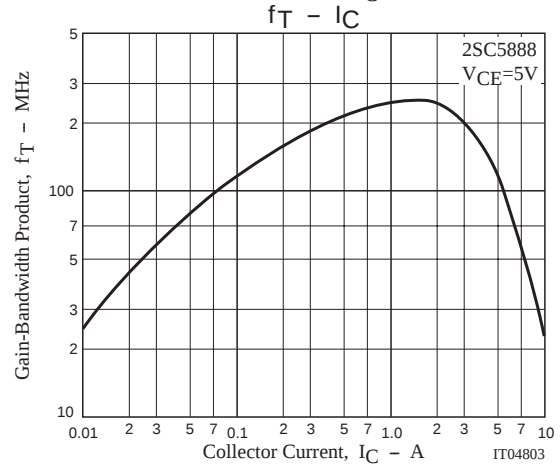
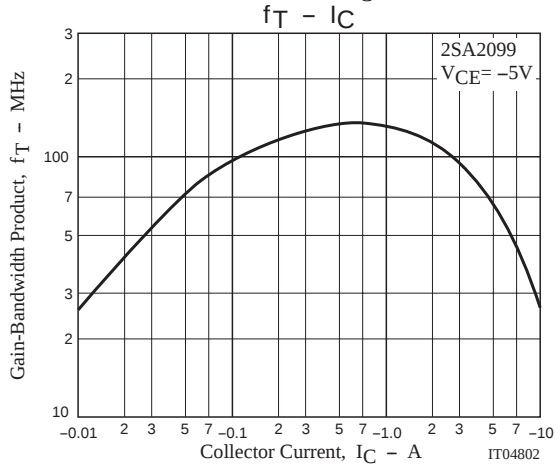
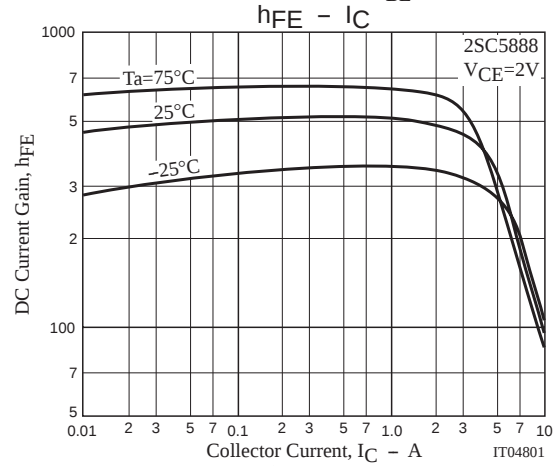
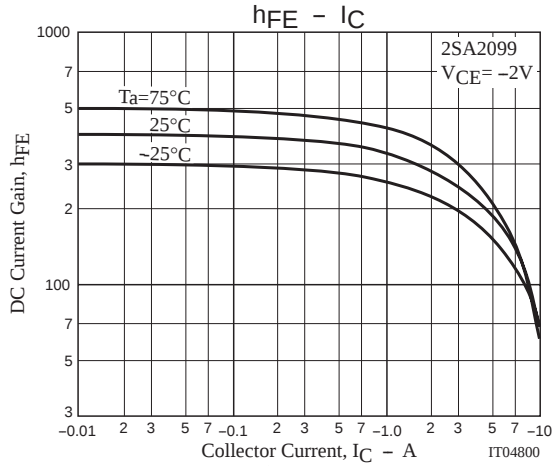
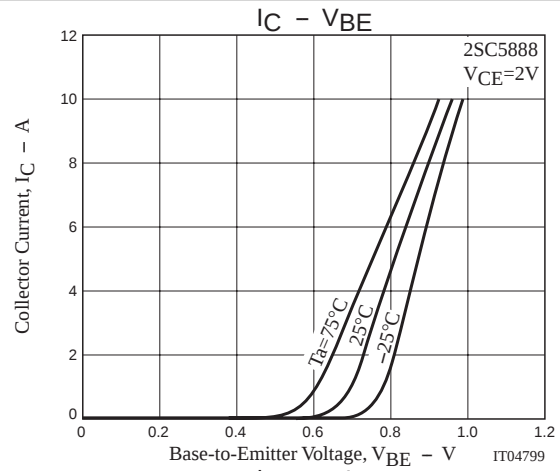
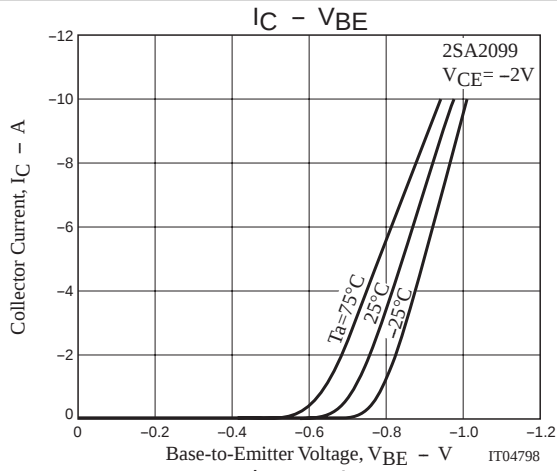
Switching Time Test Circuit

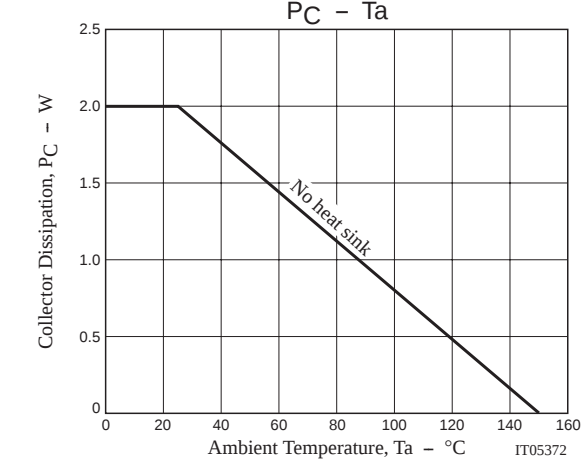
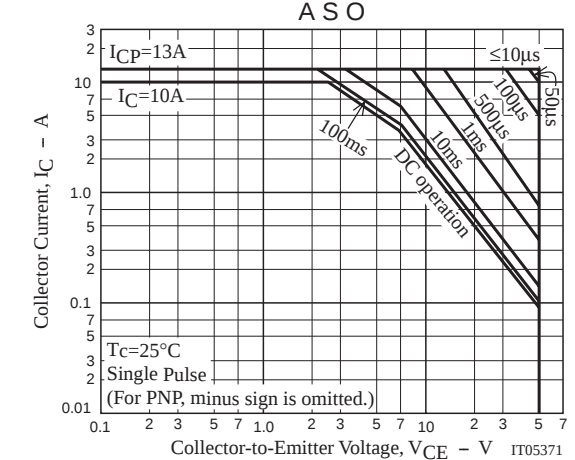
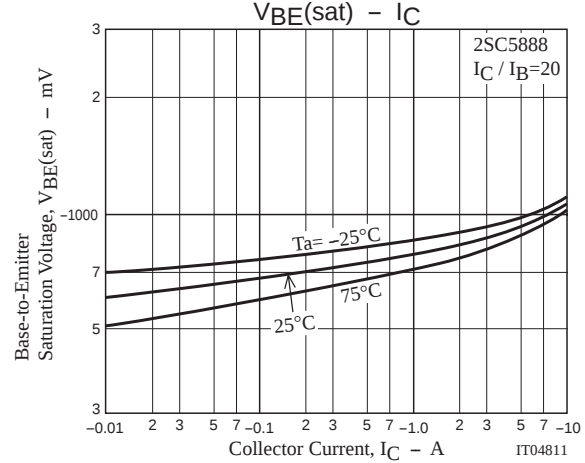
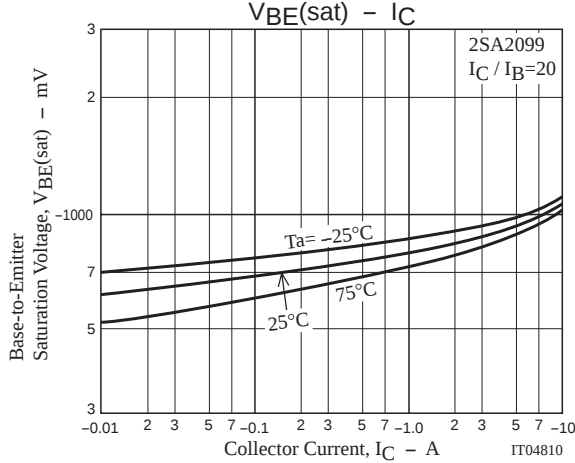
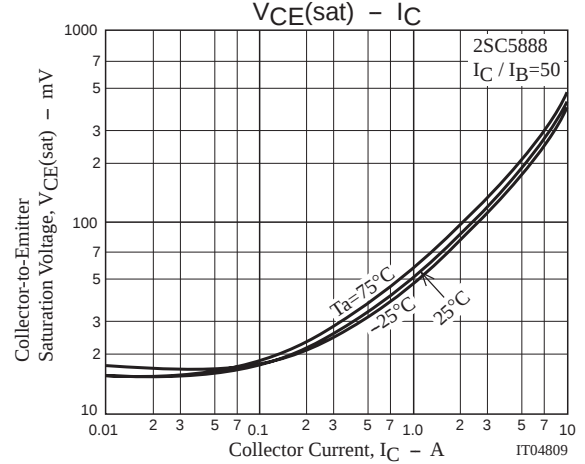
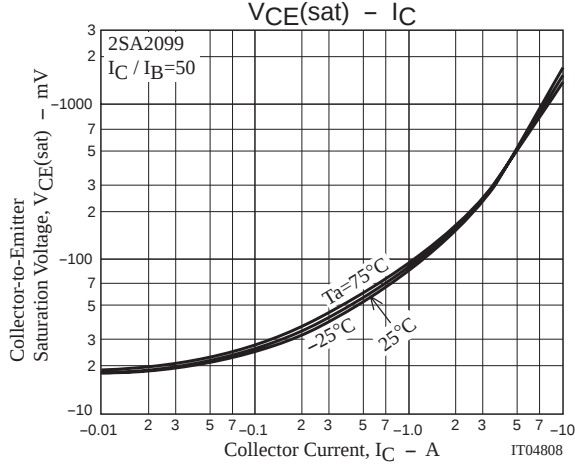
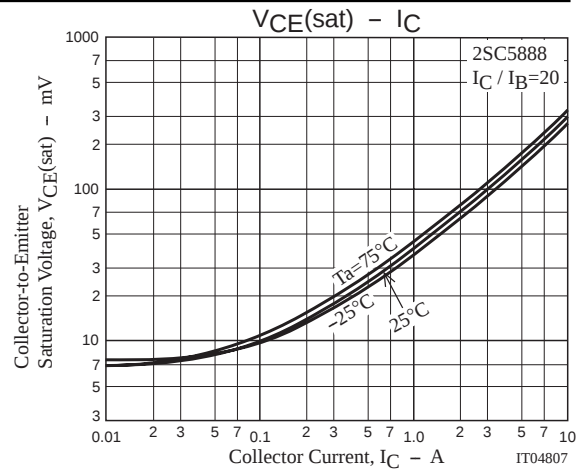
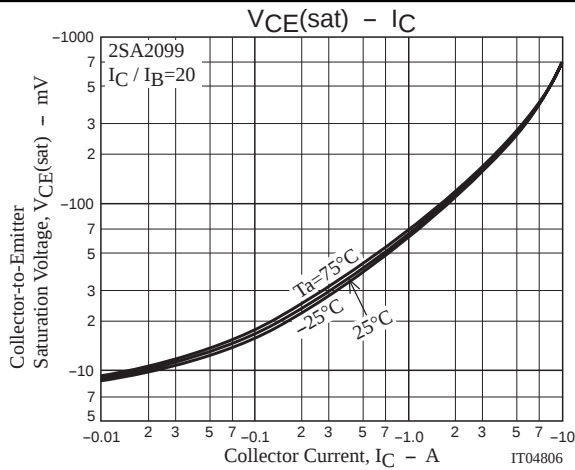


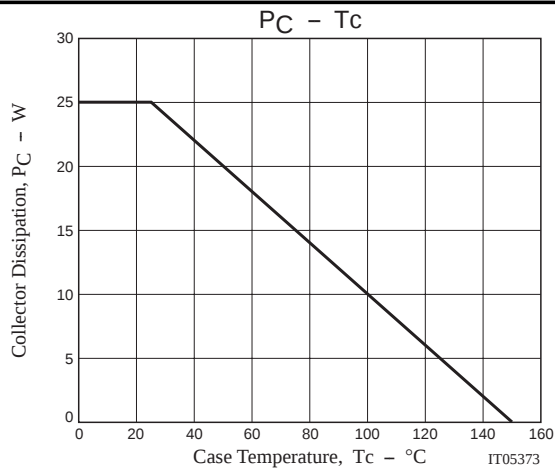
$I_C=20I_{B1}=-20I_{B2}=3A$
(For PNP, the polarity is reversed.)



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