

**2SA1689**

TV Camera Deflection High-Voltage Driver Applications

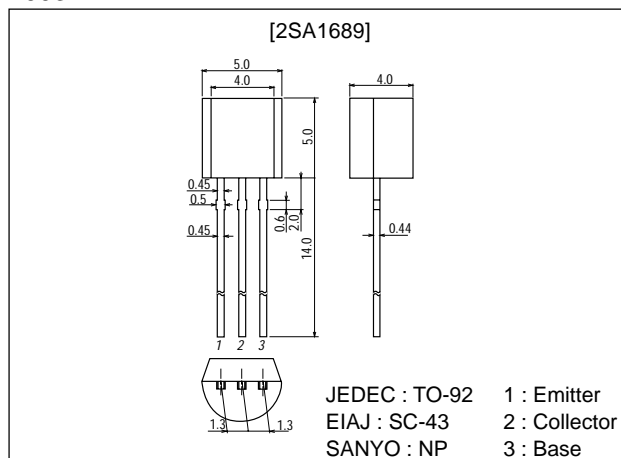
Features

- High breakdown voltage.
- Small reverse transfer capacitance and excellent high frequency characteristic.
- Excellent DC current gain.
- Adoption of FBET process.

Package Dimensions

unit:mm

2003B



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-300	V
Collector-to-Emitter Voltage	V_{CEO}		-300	V
Emitter-to-Base Voltage	V_{EBO}		-5	V
Collector Current	I_C		-50	mA
Collector Current (Pulse)	I_{CP}		-100	mA
Collector Dissipation	P_C		600	mW
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}	$V_{CB} = -200\text{V}, I_E = 0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0$			-0.1	μA
DC Current Gain	h_{FE1}	$V_{CE} = -6\text{V}, I_C = -0.1\text{mA}$	100		320	
	h_{FE2}	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	100			
Gain-Bandwidth Product	f_T	$V_{CE} = -30\text{V}, I_C = -10\text{mA}$		70		MHz

* : The 2SA1689 is classified by 0.1mA h_{FE} as follows :

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Rank	E	F
h_{FE}	100 to 200	160 to 320

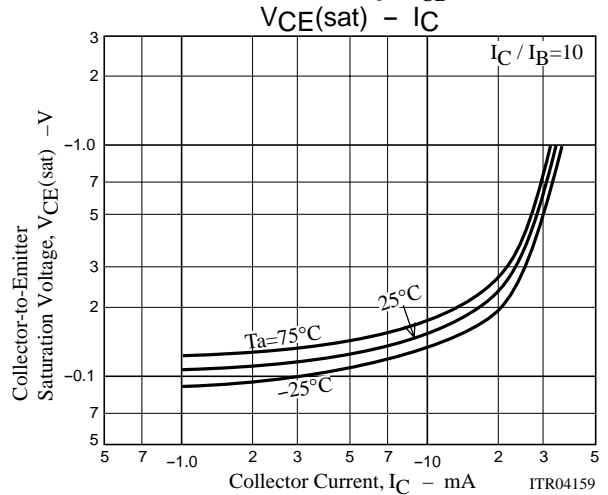
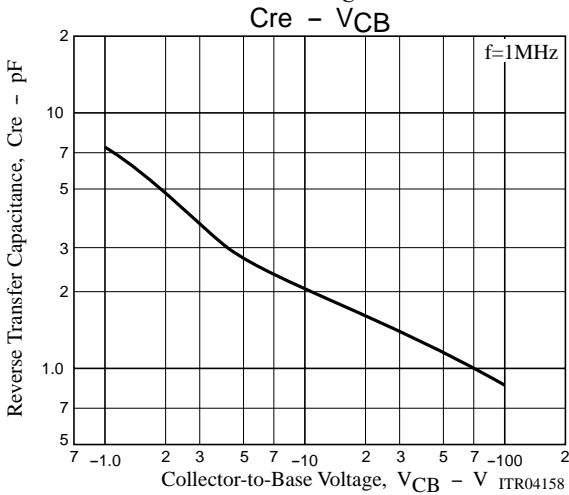
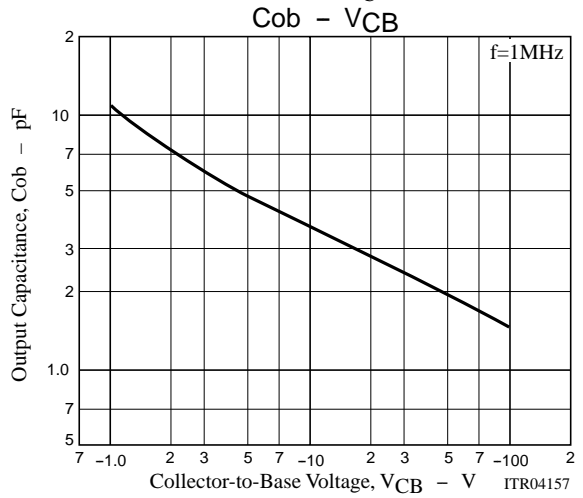
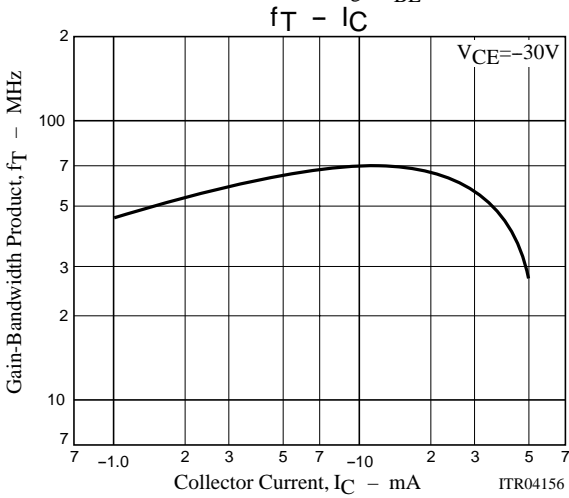
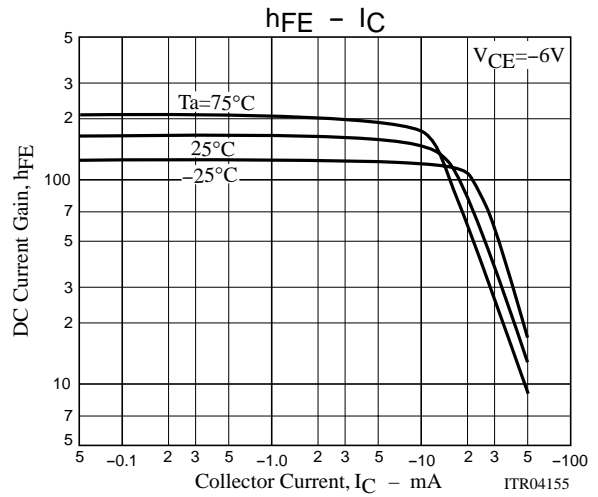
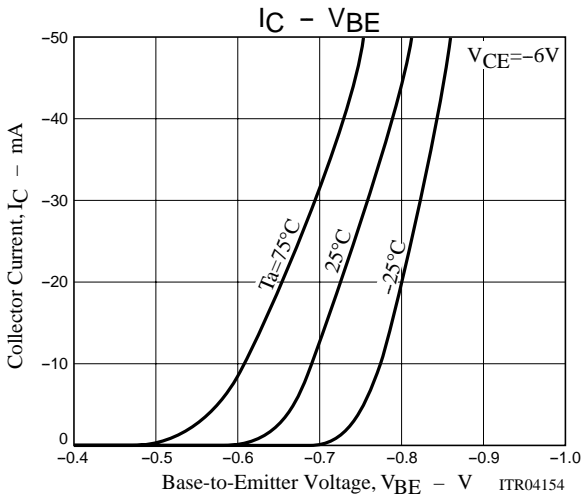
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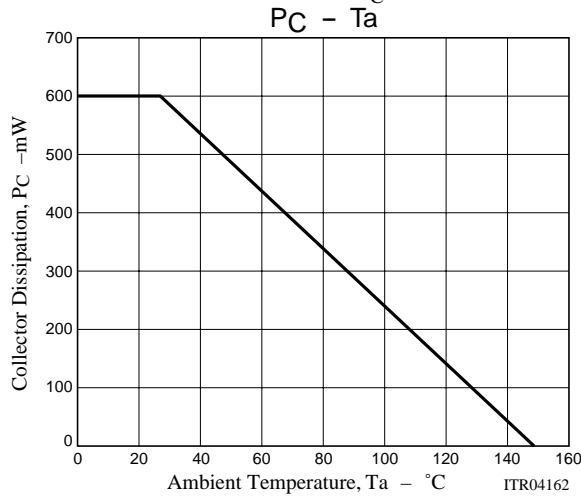
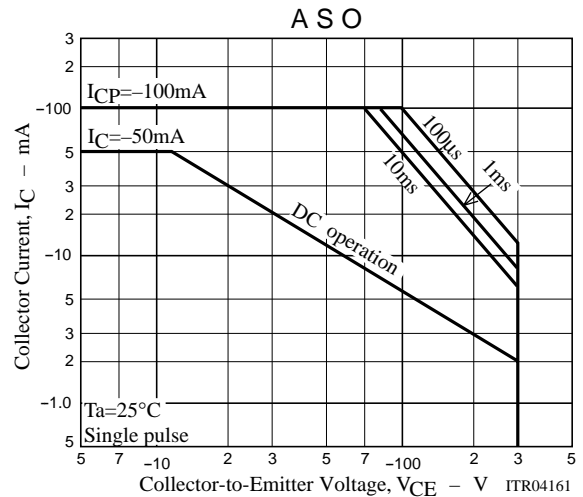
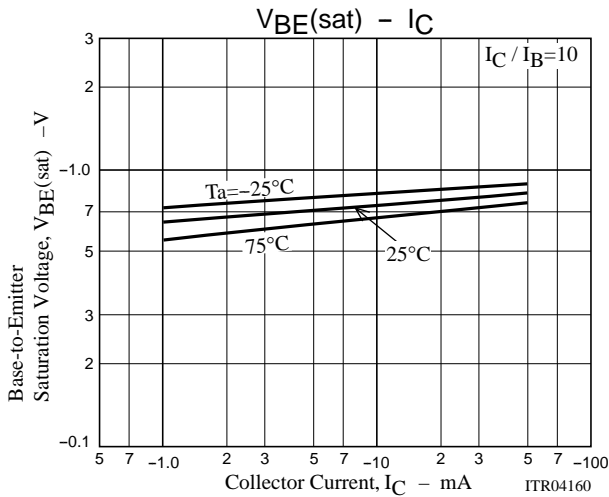
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}$, $I_B = -1\text{mA}$			-1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10\text{mA}$, $I_B = -1\text{mA}$			-1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-300			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}$, $R_{BE} = \infty$	-300			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}$, $I_C = 0$	-5			V
Collector Output Capacitance	C_{ob}	$V_{CB} = -30\text{V}$, $f = 1\text{MHz}$		2.4		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = -30\text{V}$, $f = 1\text{MHz}$		1.5		pF
DC Current Gain Ratio	h_{FE} ratio	h_{FE1}/h_{FE2}		1.0		





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