

**2SA1682**

## TV Camera Deflection, High-Voltage Driver Applications

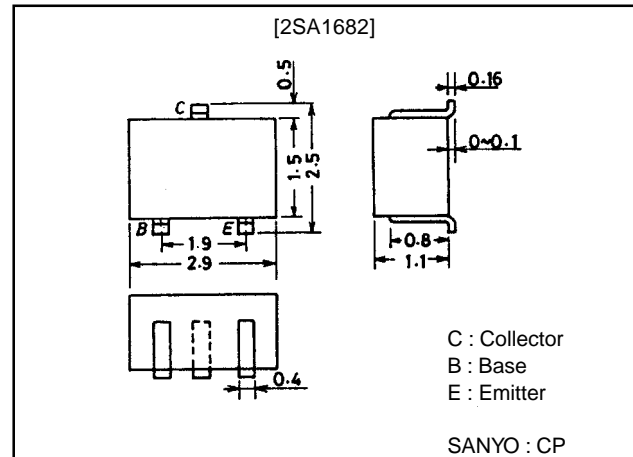
### Features

- High breakdown voltage ( $V_{CE0} \geq 300V$ ).
- Small reverse transfer capacitance and excellent high frequency characteristic ( $C_{re} : 1.5pF$  typ).
- Excellent DC current gain ratio ( $h_{FE}$  ratio : 1.0 typ).
- Adoption of FBET process.

### Package Dimensions

unit:mm

2018A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-300	V
Collector-to-Emitter Voltage	$V_{CE0}$		-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	$P_C$		250	mW
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	$I_{CBO}$	$V_{CB} = -200V, I_E = 0$			-0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = -4V, I_C = 0$			-0.1	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = -6V, I_C = -0.1mA$	100*		320*	
	$h_{FE2}$	$V_{CE} = -6V, I_C = -1mA$	100			
Gain-Bandwidth Product	$f_T$	$V_{CE} = -30V, I_C = -10mA$		70		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10mA, I_B = -1mA$			-1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10mA, I_B = -1mA$			-1.0	V

\* : The 2SA1682 is classified by 0.1mA  $h_{FE}$  as follows :

100	4	200	160	5	320
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Note : Marking : CS

 $h_{FE}$  rank : 4, 5

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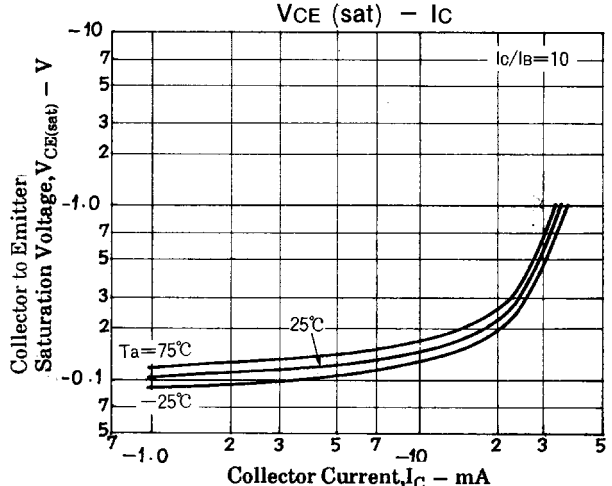
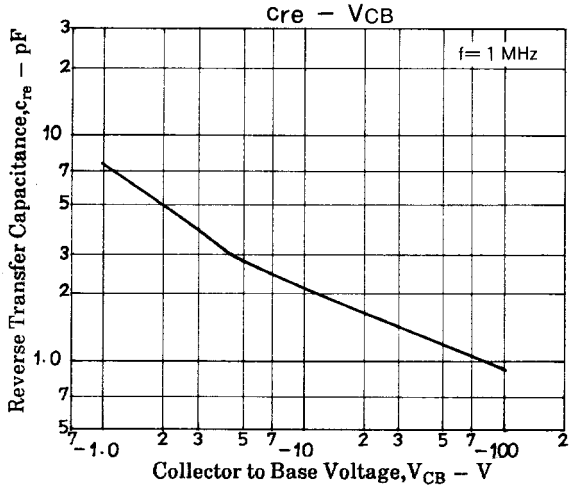
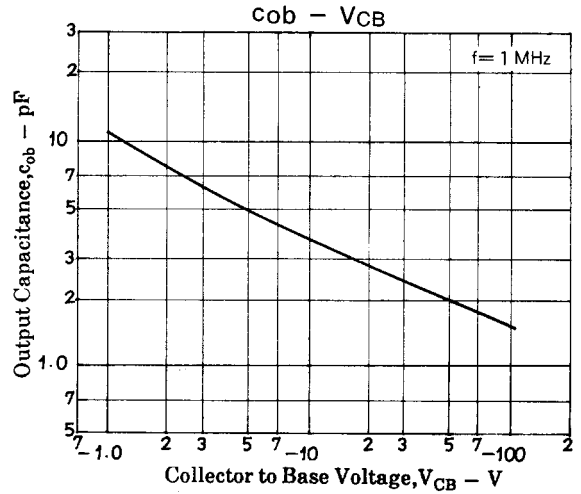
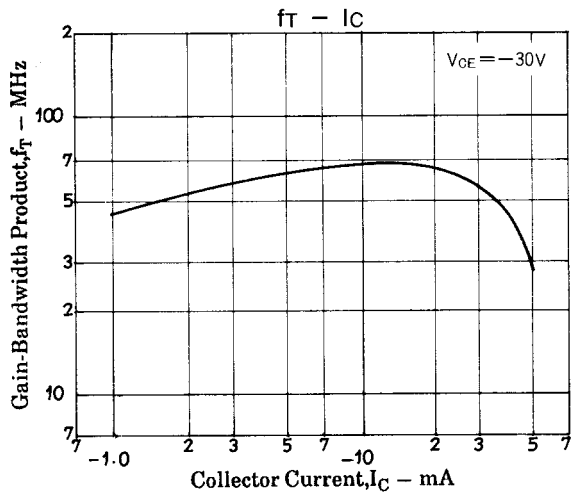
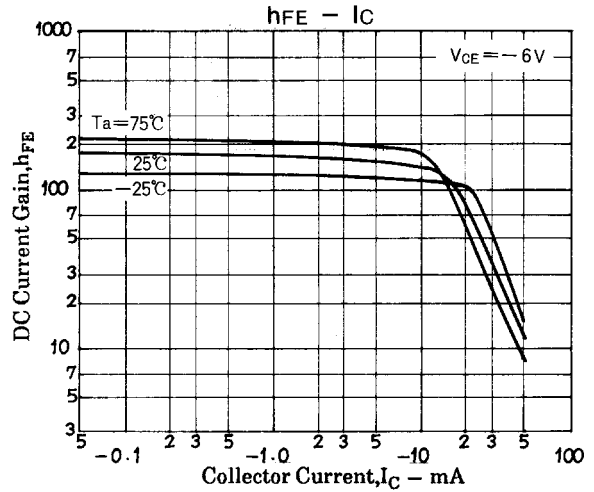
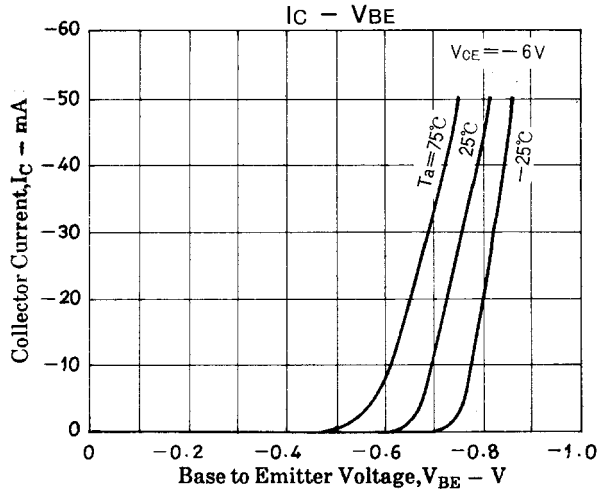
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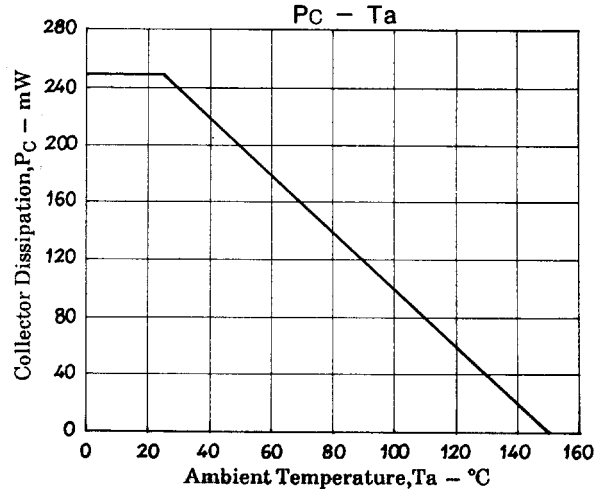
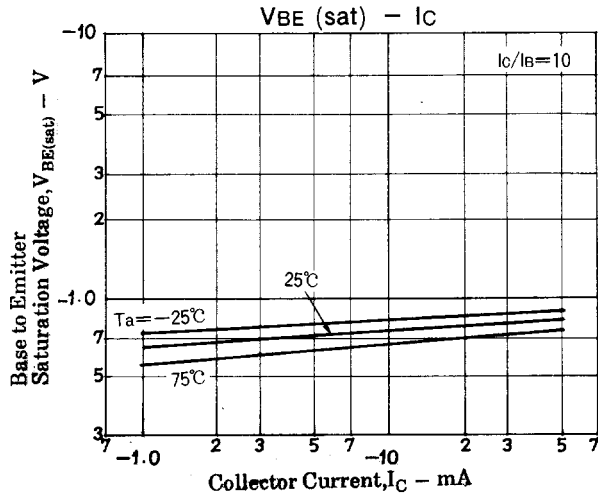
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# 2SA1682

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





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