



## High-Definition CRT Display Applications

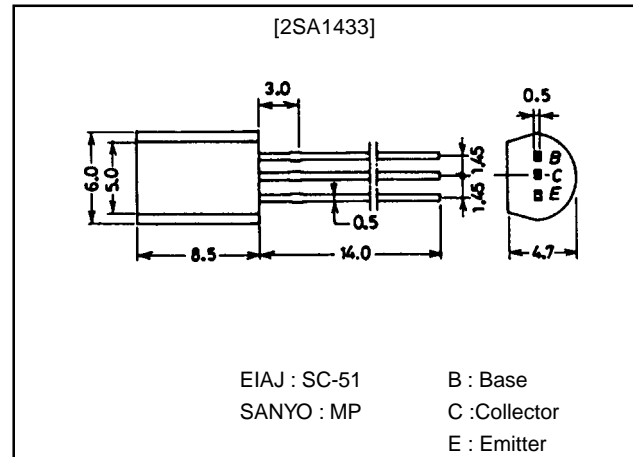
### Features

- High  $f_T$  (Gain-Bandwidth Product).
- Small reverse transfer capacitance ( $C_{re}=1.3\text{pF}$ ).
- Adoption of FBET process.

### Package Dimensions

unit:mm

2006A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		-70	V
Collector-to-Emitter Voltage	$V_{CEO}$		-60	V
Emitter-to-Base Voltage	$V_{EBO}$		-4	V
Collector Current	$I_C$		-50	mA
Collector Current (Pulse)	$I_{CP}$		-100	mA
Collector Dissipation	$P_C$		900	mW
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

#### Electrical Characteristics at $T_a = 25^\circ\text{C}$

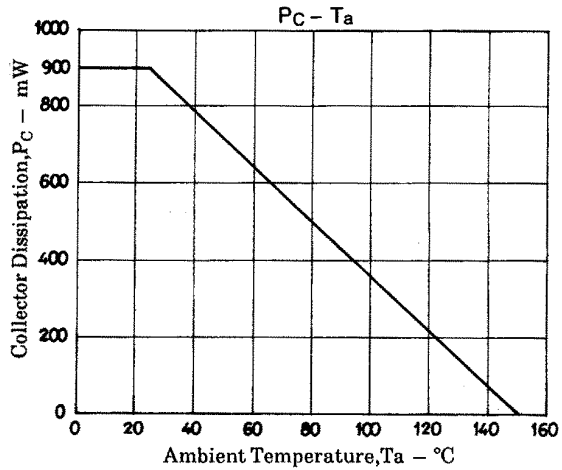
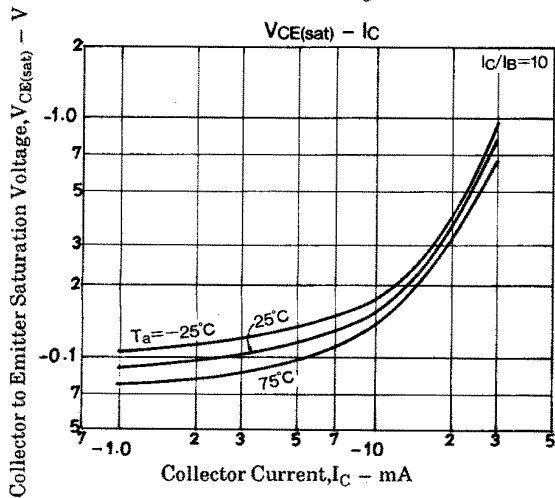
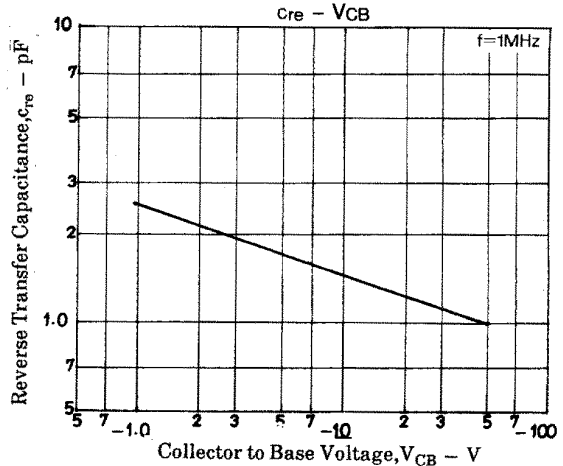
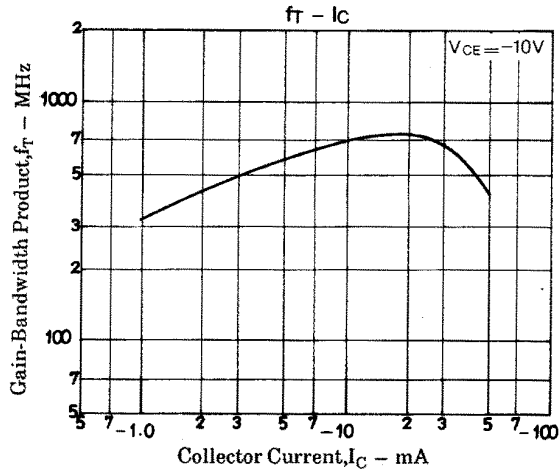
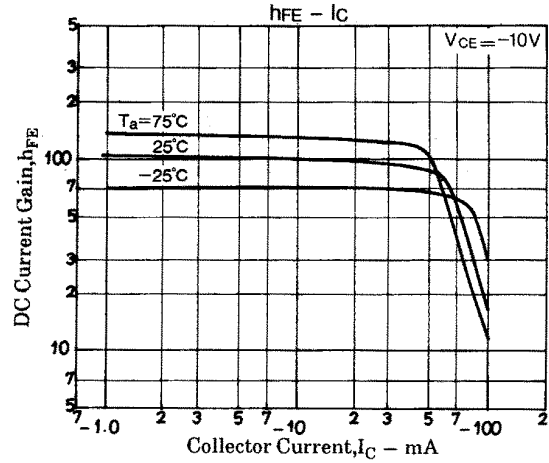
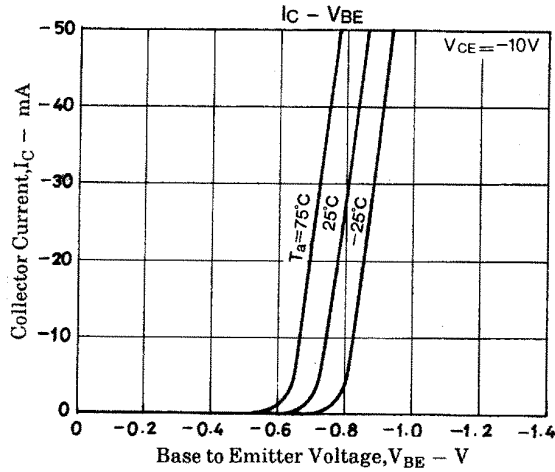
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=-40\text{V}, I_E=0$			(-)0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=-3\text{V}, I_C=0$			(-)1.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	60*		320*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	350	700		MHz
Base-to-Collector Time Constant	$\tau_{bb}, \tau_c$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$		8		
Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, f=1\text{MHz}$		1.7		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=-10\text{V}, f=1\text{MHz}$		1.3		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$			-0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$			-1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-70			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	-60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-4			V

\* : The 2SA1433 is classified by 10mA  $h_{FE}$  as follows :

60	D	120	100	E	200	160	F	320
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$h_{FE}$  rank : D, E, F

# 2SA1433



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