



No.3160A

**2SC4504**

NPN Epitaxial Planar Silicon Transistor  
**High-Definition CRT Display**  
**Video Output Driver Applications**

**Features**

- High  $f_T$  ( $f_T=2.2\text{GHz}$  typ).
- Large current ( $I_C=300\text{mA}$ ).
- Adoption of FBET process.

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

			unit
Collector-to-Base Voltage	$V_{CB0}$	30	V
Collector-to-Emitter Voltage	$V_{CEO}$	20	V
Emitter-to-Base Voltage	$V_{EBO}$	3	V
Collector Current	$I_C$	300	mA
Collector Current (Pulse)	$I_{CP}$	600	mA
Collector Dissipation	$P_C$	0.5	W
	$P_C$	1.3	W
		Mounted on ceramic board ( $250\text{mm}^2 \times 0.8\text{mm}$ )	
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

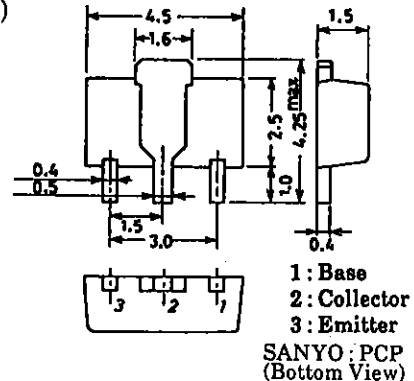
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=2\text{V}, I_C=0$			5.0	$\mu\text{A}$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=50\text{mA}$	40*		200*	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=300\text{mA}$	20			
Gain-Bandwidth Product	$f_T$	$V_{CE}=5\text{V}, I_C=50\text{mA}$		2.2		GHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		2.9		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		2.6		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$	0.15	0.5		V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$	0.9	1.2		V

\* : The 2SC4504 is classified by 50mA  $h_{FE}$  as follows :

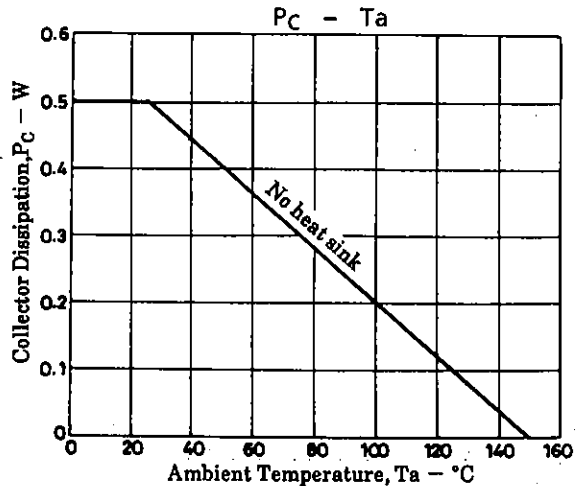
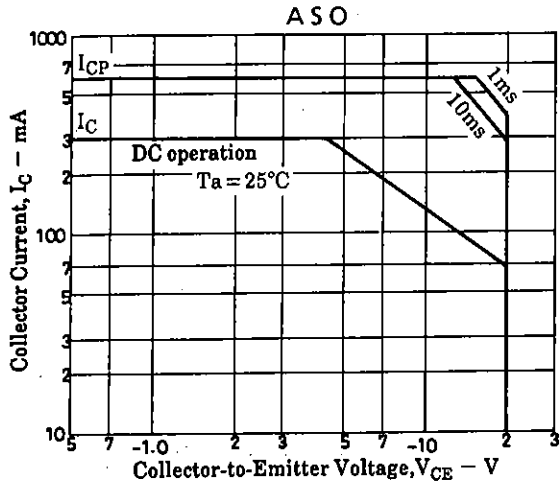
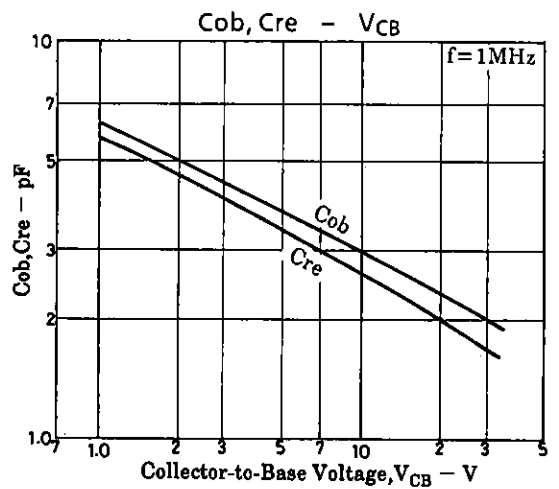
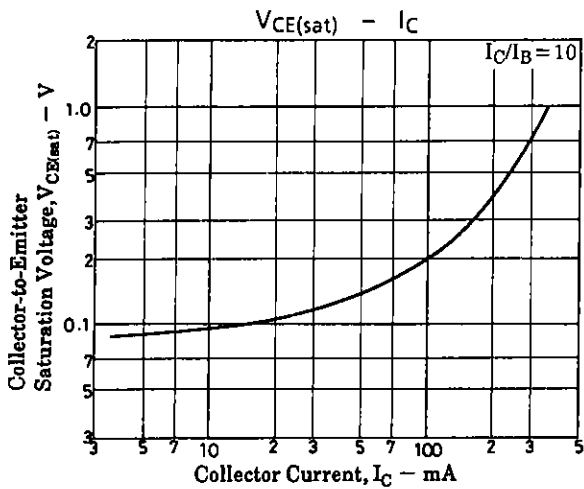
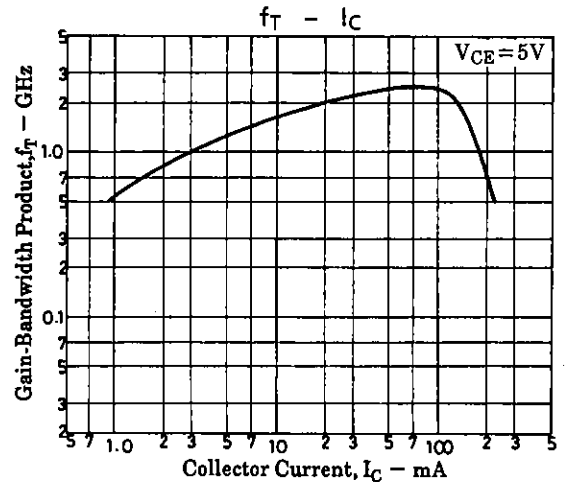
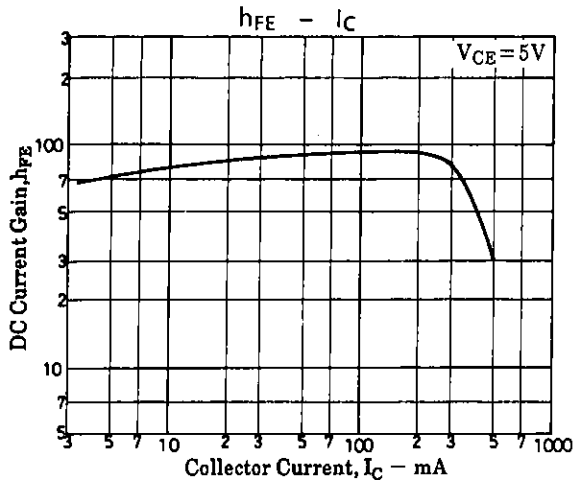
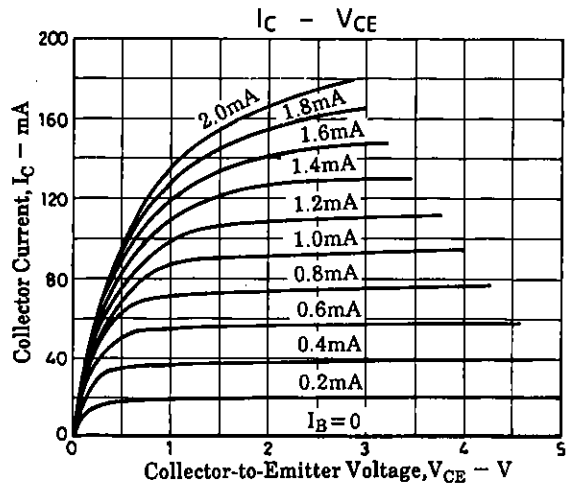
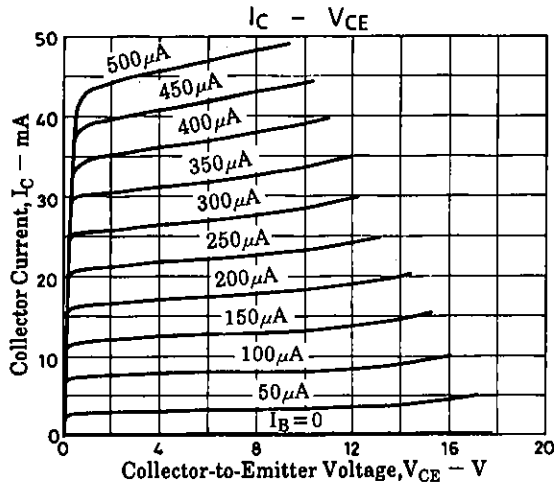
40	C	80	60	D	120	100	E	200
----	---	----	----	---	-----	-----	---	-----

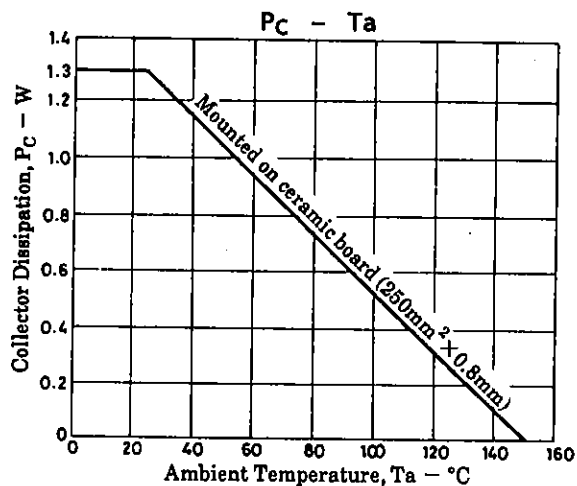
Marking : CM  
 $h_{FE}$  rank : C, D, E

**Package Dimensions 2038A**  
 (unit : mm)



**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**  
 TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
  - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
  - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of July, 1995. Specifications and information herein are subject to change without notice.