



## 2SA1475/2SC3781

### Ultrahigh-Definition CRT Display Video Output Applications

#### Applications

- Video output.
- Color TV chroma output.
- Wide-band amp.

#### Features

- High  $f_T$  ( $f_T$  typ=500MHz).
- High breakdown voltage ( $V_{CEO} \geq 120V$ ).
- Small reverse transfer capacitance and excellent HF response
  - :  $C_{re} = 2.6pF$  (NPN),  $3.9pF$  (PNP).
- Complementary PNP and NPN types.
- Adoption of FBET process.

( ) : 2SA1475

#### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		(-)120	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)120	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)4	V
Collector Current	$I_C$		(-)400	mA
Peak Collector Current	$I_{CP}$		(-)600	mA
Collector Dissipation	$P_C$		1.5	W
		$T_c = 50^\circ C$	15	W
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	$I_{CBO}$	$V_{CB} = (-)80V, I_E = 0$			(-)0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)2V, I_C = 0$			(-)1.0	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)10V, I_C = (-)50mA$	40*		320*	
	$h_{FE2}$	$V_{CE} = (-)10V, I_C = (-)250mA$	20			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)50mA$		500		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)70mA, I_B = (-)7mA$			0.6	V
					(-)0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)70mA, I_B = (-)7mA$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0$	(-)120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)120			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu A, I_C = 0$	(-)4			V
Output Capacitance	$C_{ob}$	$V_{CB} = (-)30V, f = 1MHz$		3.0		pF
				(4.4)		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = (-)30V, f = 1MHz$		2.6		pF
				(3.9)		pF

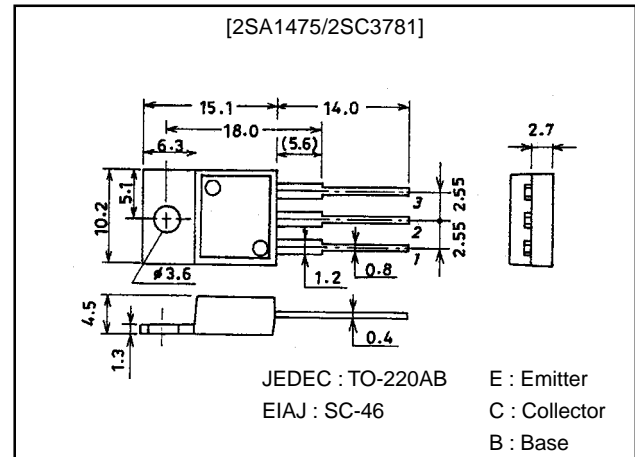
\*: The 2SA1475/2SC3781 are classified by 50mA  $h_{FE}$  as follows :

40	C	80	60	D	120	100	E	200	160	F	320
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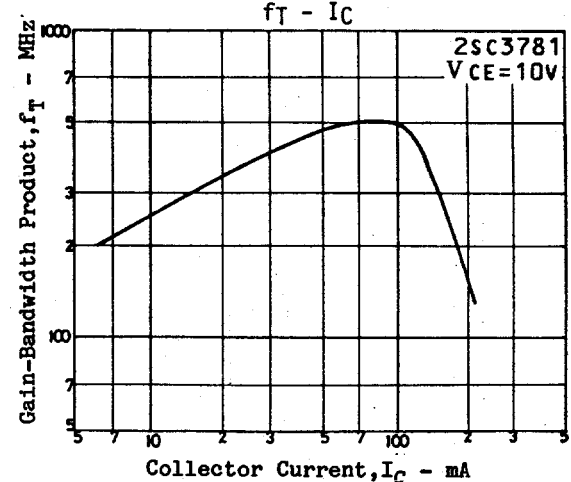
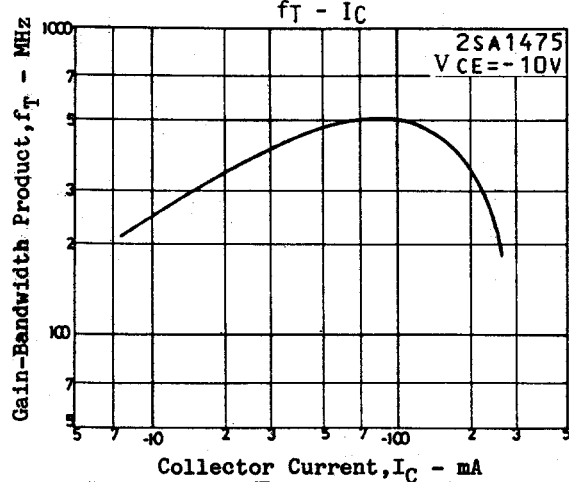
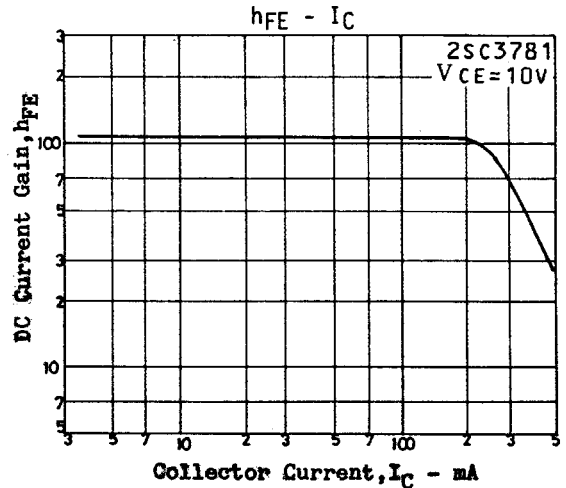
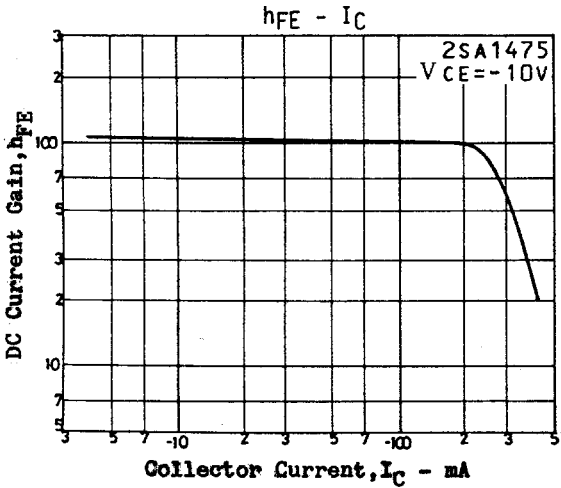
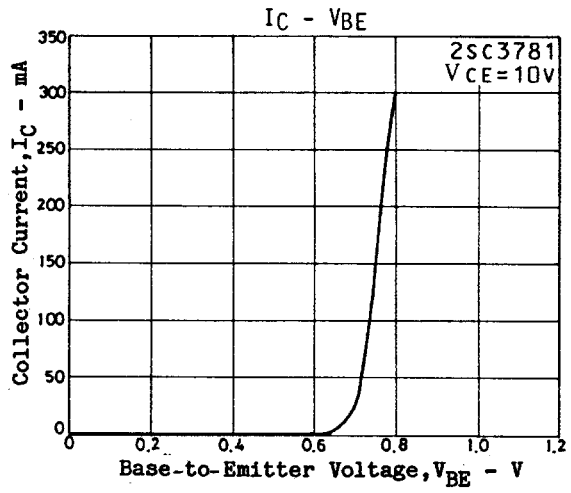
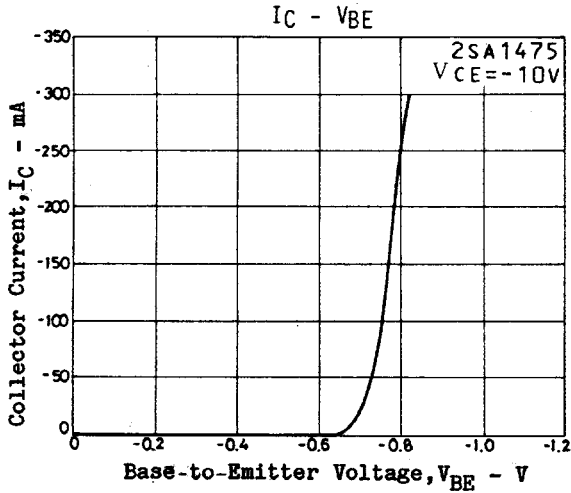
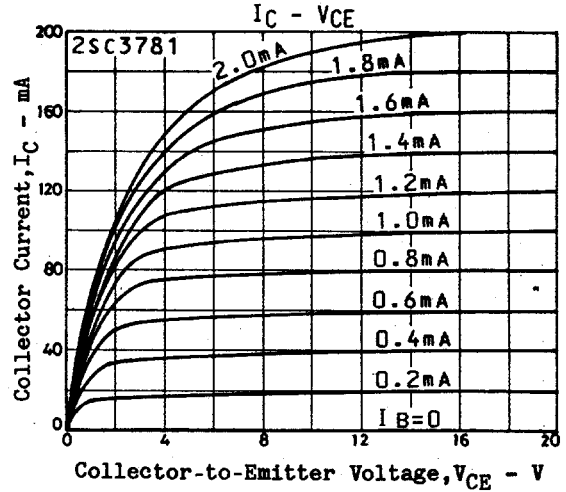
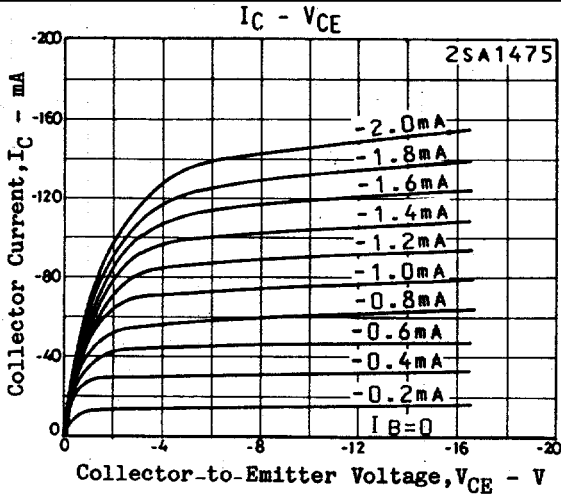
#### Package Dimensions

unit:mm

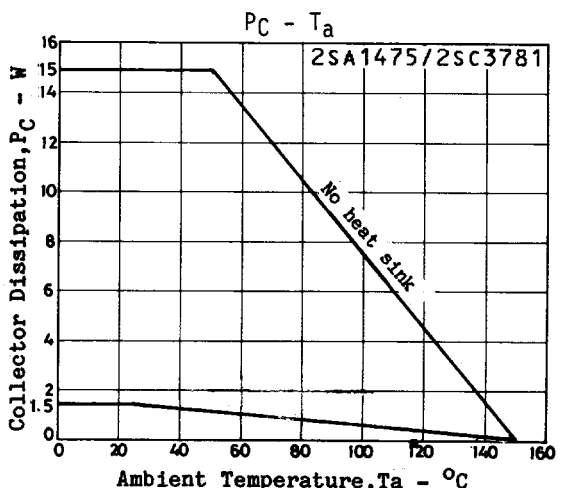
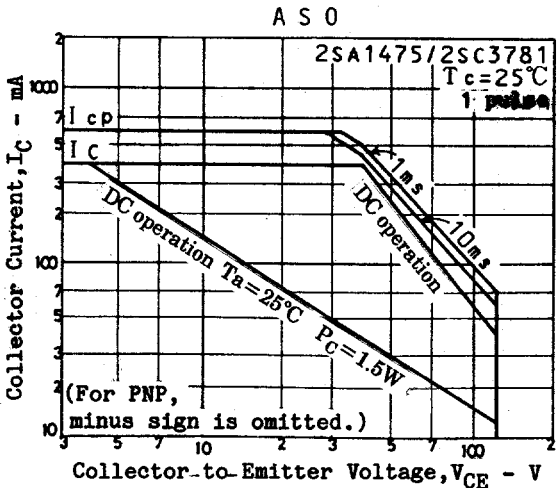
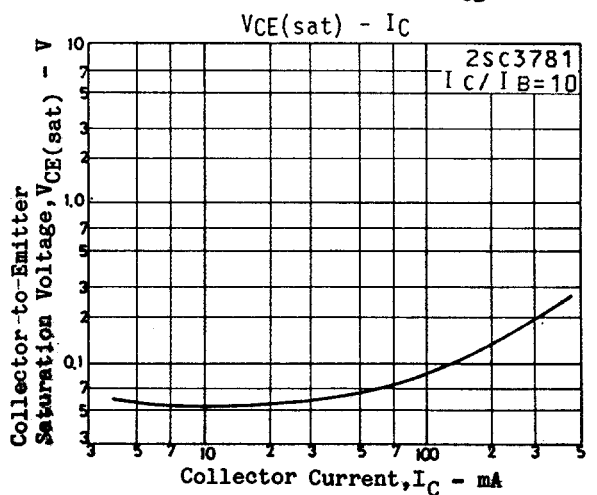
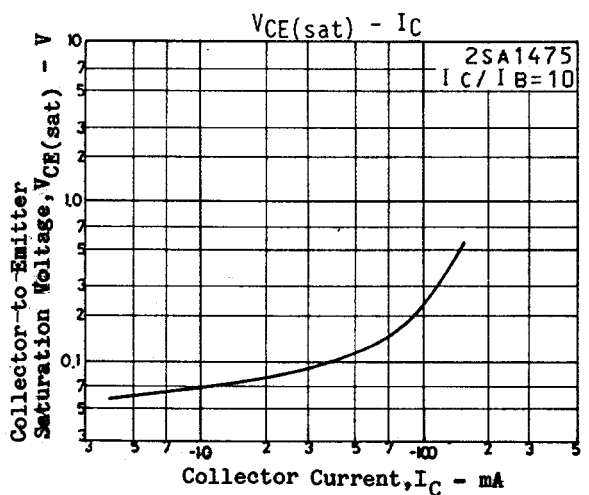
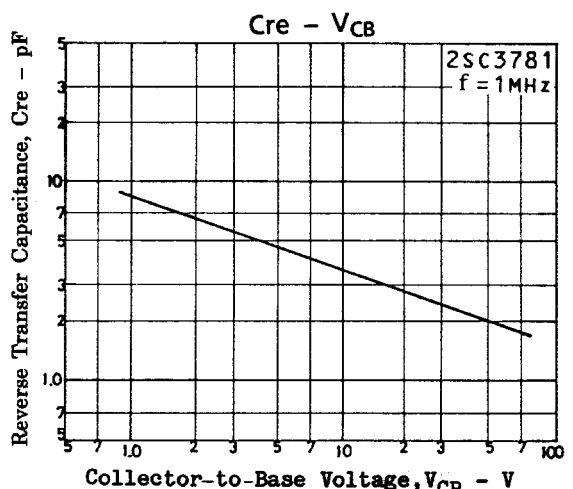
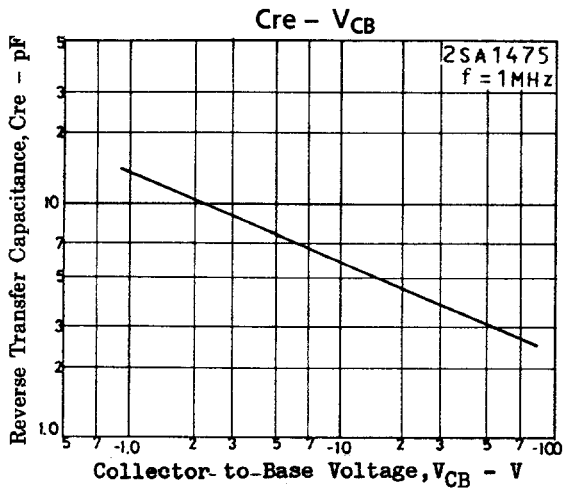
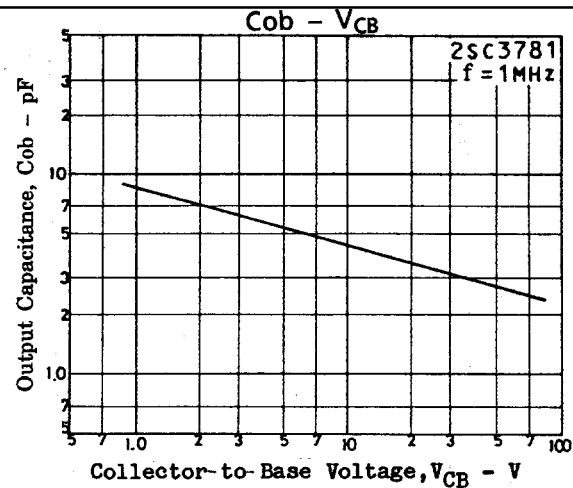
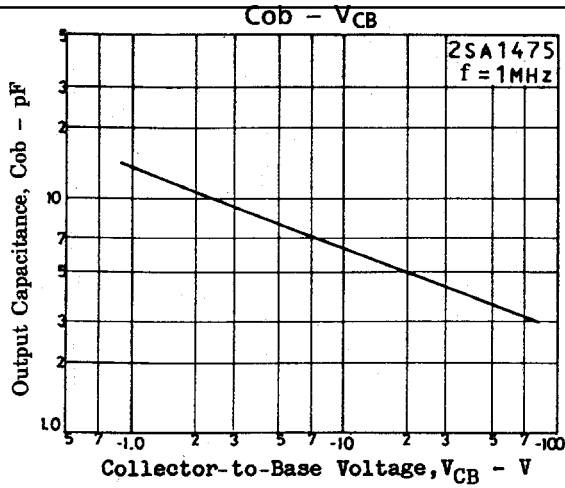
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