

# **High-Definition CRT Display Video Output Applications**

### **Applications**

· High-definition CRT display video output, wide-band amplifier.

#### **Features**

- · High gain-bandwidth product :  $f_T$ =300MHz.
- · High breakdown voltage : V<sub>CEO</sub>=200Vmin.
- $\cdot$  Small reverse transfer capacitance and excellent high frequency characteristics : C  $_{re} = 1.5 pF/NPN, \ 1.8 pF/PNP$
- · Complementary PNP and NPN types.
- · Adoption of FBET process.
- · Micaless type: TO-126 plastic package.

#### (): 2SA1540

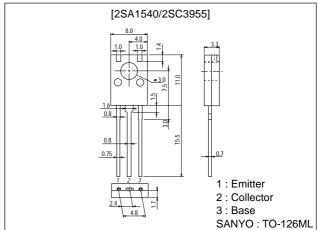
## **Specifications**

#### **Absolute Maximum Ratings** at $Ta = 25^{\circ}C$

## **Package Dimensions**

unit:mm

2042B



Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		(-)200	V
Collector-to-Emitter Voltage	VCEO		(–)200	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(–)3	V
Collector Current	lС		(-)100	mA
Peak Collector Current	I <sub>CP</sub>		(–)200	mA
Collector Dissipation	D.		1.3	W
	PC	Tc=25°C	7	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

#### **Electrical Characteristics** at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Collector Cutoff Current	I <sub>CBO</sub>	$V_{CB}=(-)150V, I_{E}=0$			(-)0.1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	$V_{EB}=(-)2V, I_{C}=0$			(-)1.0	μΑ
DC Current Gain	h <sub>FE</sub> 1	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)10mA	40*		320*	
	h <sub>FE</sub> 2	V <sub>CE</sub> =(-)10V, I <sub>C</sub> =(-)50mA	20			
Gain-Bandwidth Product	f <sub>T</sub>	$V_{CE}=(-)30V, I_{C}=(-)30mA$		300		MHz

 $^*h_{FE}1$  : The 2SA1540/2SC3955 are classified by 10mA  $h_{FE}$  as follows :

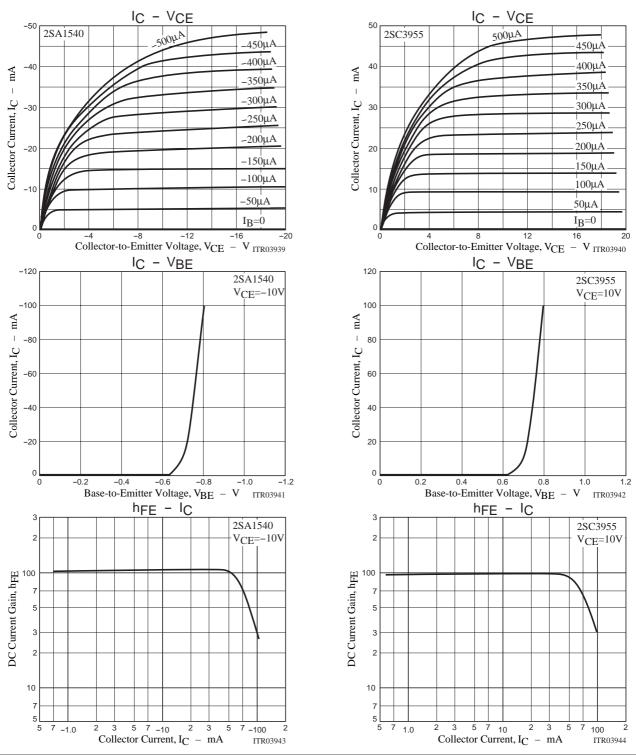
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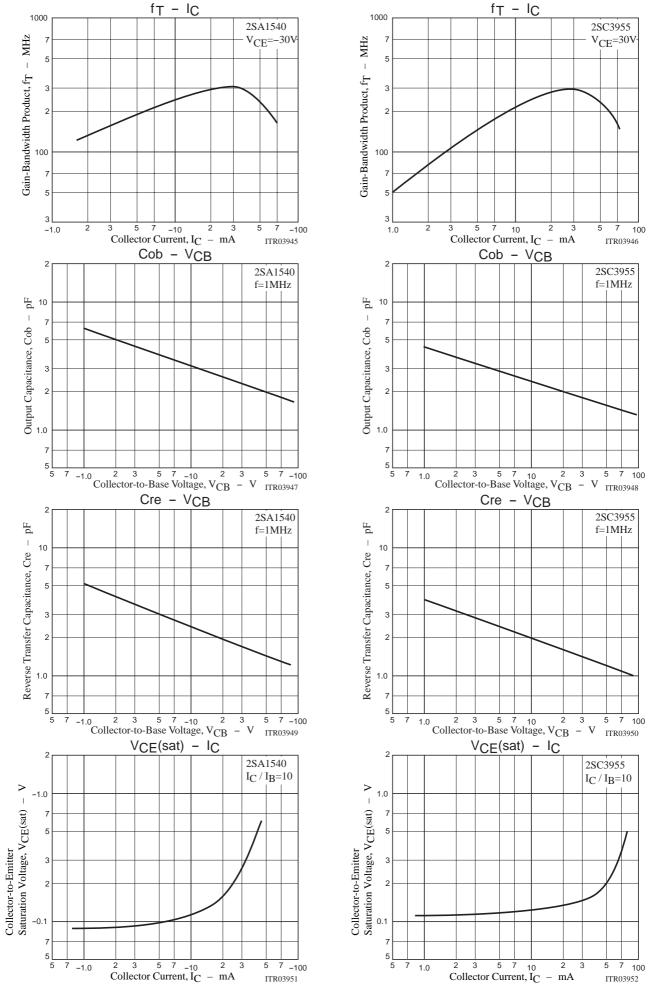
Rank	С	D	E	F
hFE	40 to 80	60 to 120	100 to 200	160 to 320

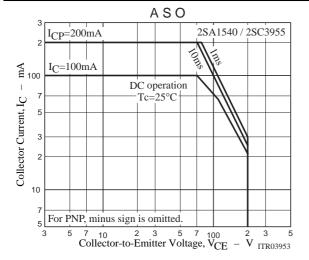
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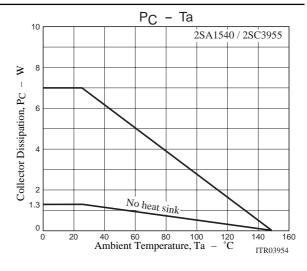
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)30V, f=1MHz		1.9		pF
				(2.4)		pF
Reverse Transfer Capacitance	C <sub>re</sub>	V <sub>CB</sub> =(-)30V, f=1MHz		1.5		pF
				(1.8)		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	I <sub>C</sub> =(-)20mA, I <sub>B</sub> =(-)2mA			(-)1.0	V
Emitter-to-Base Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =(-)20mA, I <sub>B</sub> =(-)2mA			(-)1.0	V









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