

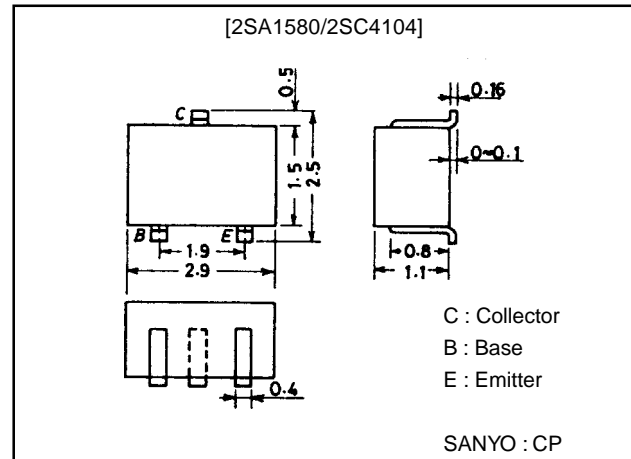
**High-Definition CRT Display Applications****Features**

- High  $f_T$ .
- Small reverse transfer capacitance.
- Adoption of FBET process.

**Package Dimensions**

unit:mm

2018A



() : 2SA1580

**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	$P_C$		200	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*		270*	
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10\text{V}, I_C = (-)10\text{mA}$	350	700		MHz
Base-to-Collector Time Constant	$\tau_{bb',c_c}$	$V_{CE} = (-)10\text{V}, I_C = (-)10\text{mA}$		8		ps
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		1.3		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(1.7)		pF
				1.0		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)20\text{mA}, I_B = (-)2\text{mA}$			0.5	V
					(-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 2SA1580/2SC4104 are classified by 10mA  $h_{FE}$  as follows :

60	3	120	90	4	180	135	5	270
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Marking 2SA1580 : QL

2SC4104 : YY

 $h_{FE}$  rank : 3,4,5

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