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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# 2SC5993

## Silicon NPN epitaxial planar type

For power amplification

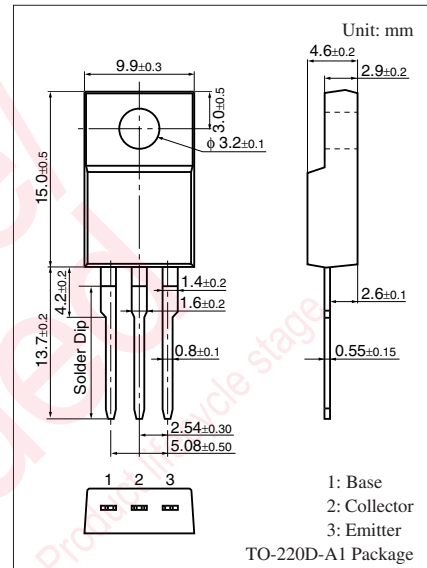
For TV VM circuit

### ■ Features

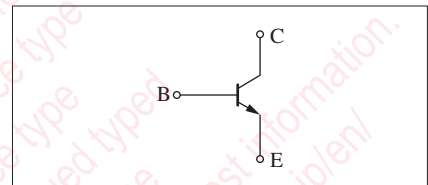
- Satisfactory linearity of forward current transfer ratio  $h_{FE}$
- High transition frequency ( $f_T$ )
- Full-pack package which can be installed to the heat sink with one screw.

### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	180	V
Collector-emitter voltage (Base open)	$V_{CEO}$	180	V
Emitter-base voltage (Collector open)	$V_{EBO}$	6	V
Collector current	$I_C$	1.5	A
Peak collector current	$I_{CP}$	3	A
Collector power dissipation	$P_C$	20	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



### Internal Connection



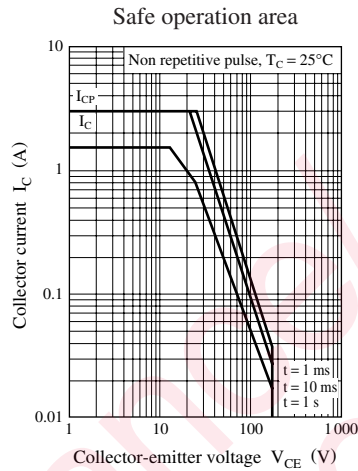
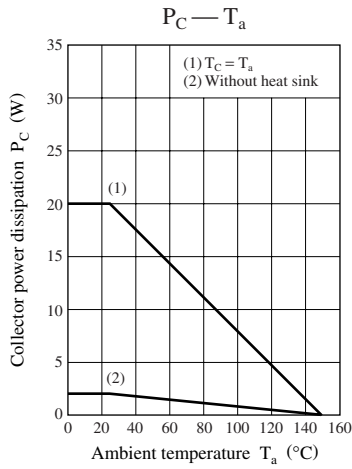
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	180			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 180 \text{ V}, I_E = 0$			100	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 6 \text{ V}, I_C = 0$			100	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE}$	$V_{CE} = 5 \text{ V}, I_C = 0.1 \text{ A}$	60		240	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1 \text{ A}, I_B = 0.1 \text{ A}$			0.5	V
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_C = 0.2 \text{ A}, f = 10 \text{ MHz}$		130		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		10		pF
Turn-on time	$t_{on}$	$I_C = 0.4 \text{ A}, \text{Resistance loaded}$		0.1		$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = 0.04 \text{ A}, I_{B2} = -0.04 \text{ A}$		1.5		$\mu\text{s}$
Fall time	$t_f$	$V_{CC} = 100 \text{ V}$		0.1		$\mu\text{s}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

Rank	Q	P
$h_{FE}$	60 to 140	120 to 240



Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.  
 planned maintenance type  
 maintenance type  
 planned discontinued type  
 discontinued type  
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