

2SA2140

Silicon PNP epitaxial planar type

For power amplification

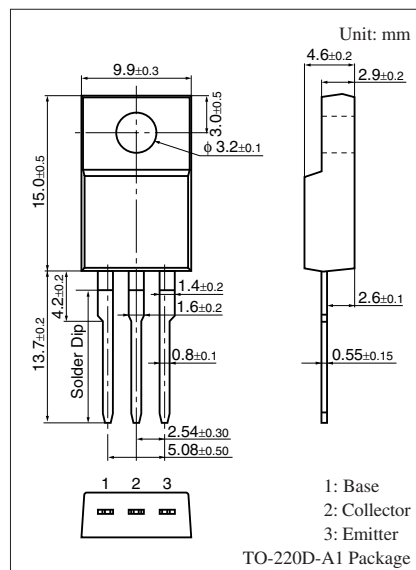
For TV VM circuit

■ Features

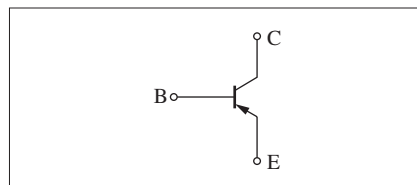
- Satisfactory linearity of forward current transfer ratio h_{FE}
- High transition frequency (f_T)
- Full-pack package which can be installed to the heat sink with one screw.

■ 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
	$T_a = 25^\circ\text{C}$	2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Internal Connection



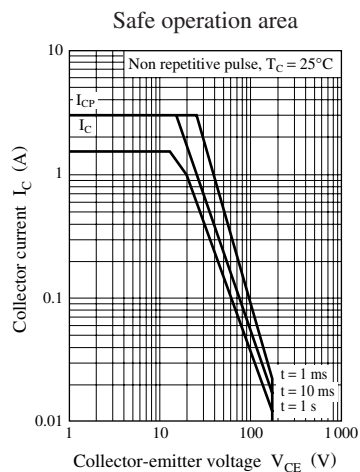
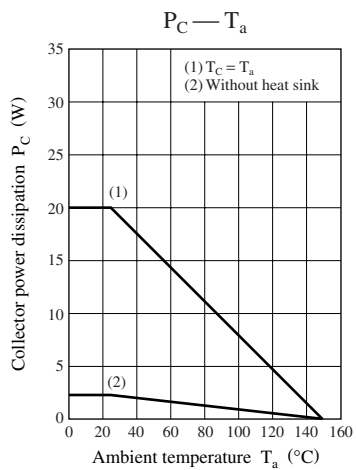
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

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	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -6 \text{ V}, I_C = 0$			-100	μA
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	$V_{CE} = -10 \text{ V}, I_C = -0.2 \text{ A}, f = 10 \text{ MHz}$		100		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		30		pF
Turn-on time	t_{on}	$I_C = -0.4 \text{ A}, \text{Resistance loaded}$		0.1		μs
Storage time	t_{stg}	$I_{B1} = 0.04 \text{ A}, I_{B2} = -0.04 \text{ A}$		1.0		μs
Fall time	t_f	$V_{CC} = 100 \text{ V}$		0.1		μs

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



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