

2SD2136

Silicon NPN triple diffusion planar type

For power amplification

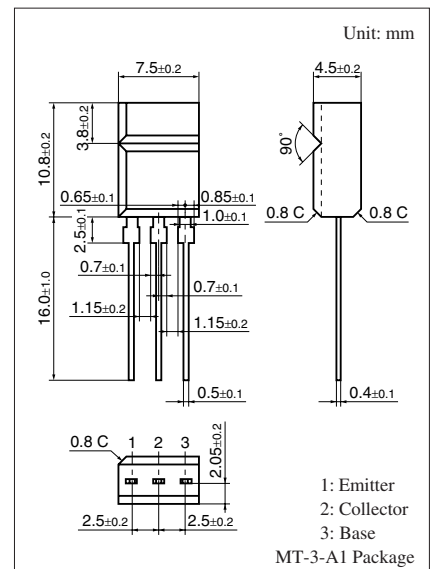
Complementary to 2SB1416

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity.
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Allowing supply with the radial taping

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	60	V
Collector-emitter voltage (Base open)	V_{CEO}	60	V
Emitter-base voltage (Collector open)	V_{EBO}	6	V
Collector current	I_C	3	A
Peak collector current	I_{CP}	5	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



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

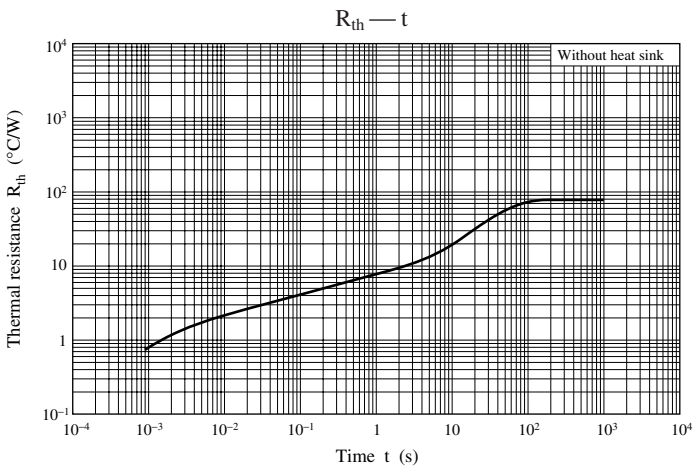
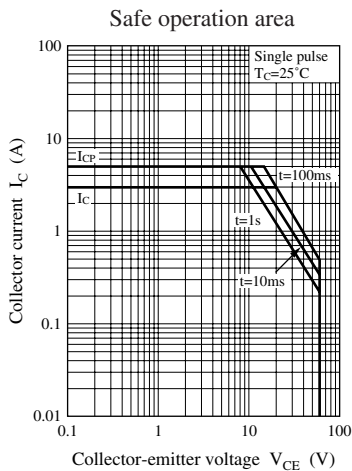
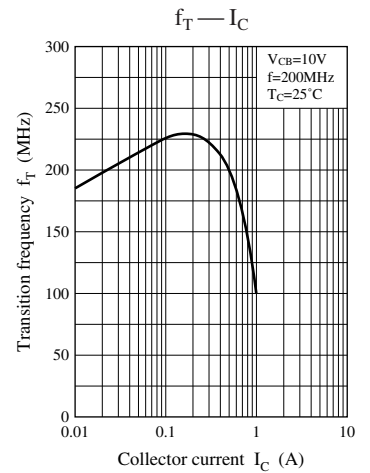
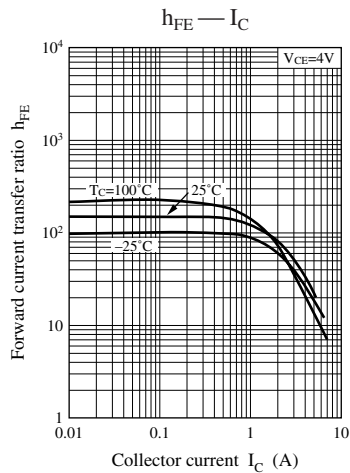
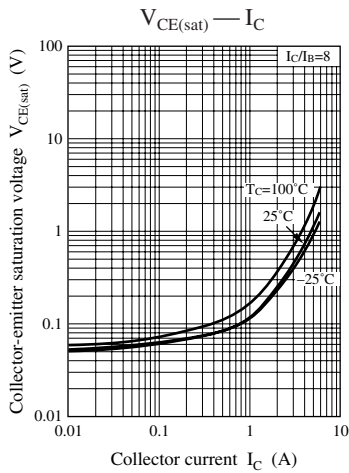
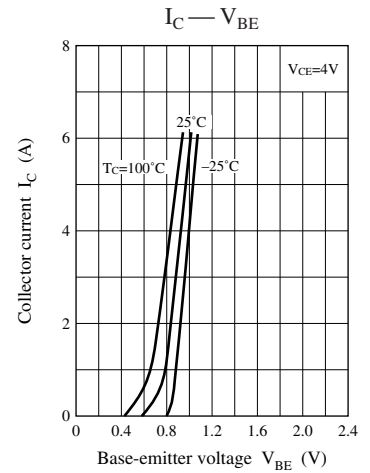
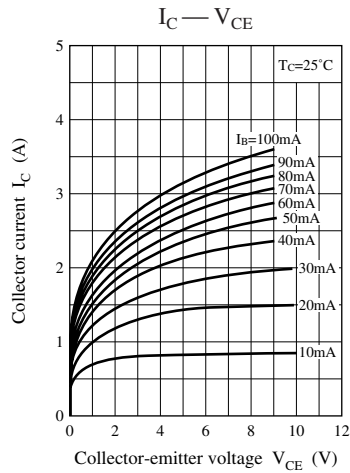
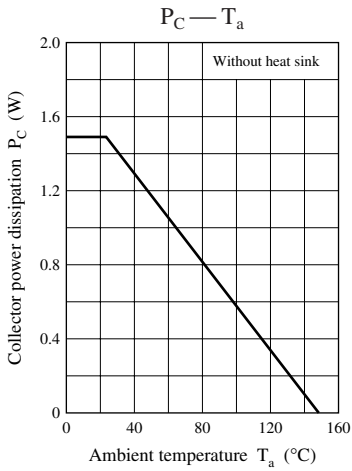
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 30\text{ mA}, I_B = 0$	60			V
Base-emitter voltage *1	V_{BE}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$			1.8	V
Collector-emitter cutoff current (Emitter-base short)	I_{CES}	$V_{CE} = 60\text{ V}, V_{BE} = 0$			200	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 30\text{ V}, I_B = 0$			300	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$			1	mA
Forward current transfer ratio	h_{FE1} *2	$V_{CE} = 4\text{ V}, I_C = 1\text{ A}$	40		250	—
	h_{FE2} *1	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	10			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.375\text{ A}$			1.2	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_E = -0.1\text{ A}, f = 200\text{ MHz}$		220		MHz
Turn-on time	t_{on}	$I_C = 1\text{ A}, I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}$		0.5		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			0.4		μs

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

2. *1: Pulse measurement

*2: Rank classification

Rank	P	Q	R
h_{FE1}	40 to 90	70 to 150	120 to 250



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