

2SD2133

Silicon NPN epitaxial planar type

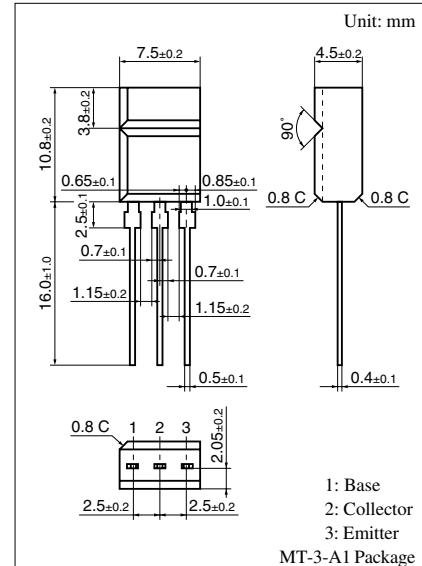
For low-frequency power amplification driver
Complementary to 2SB1413

■ Features

- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Output of 15 W can be obtained by a complementary pair with 2SB1413

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1.5	A
Collector current	I_C	1	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

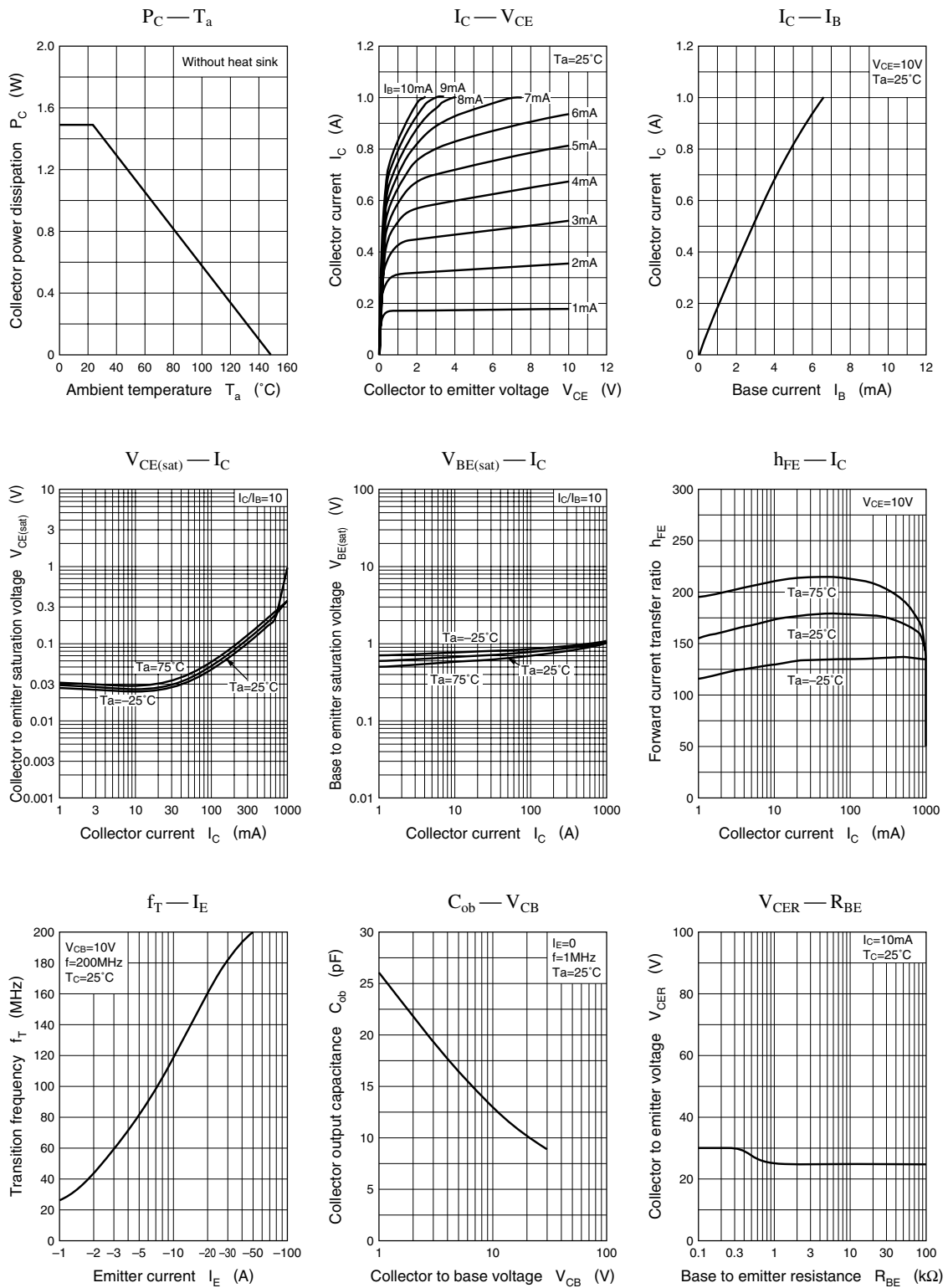


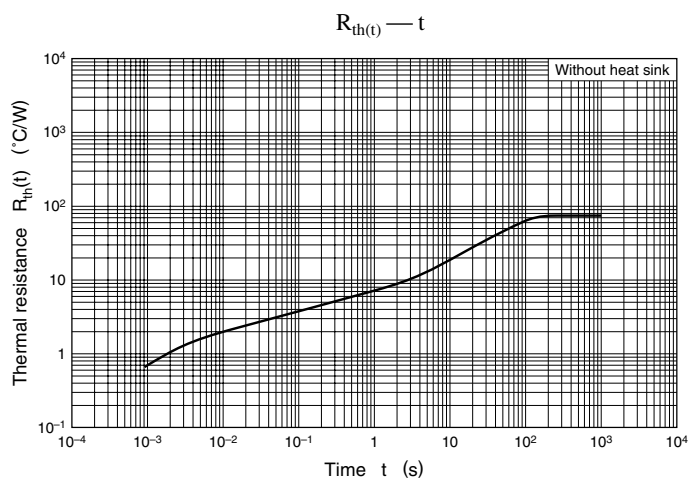
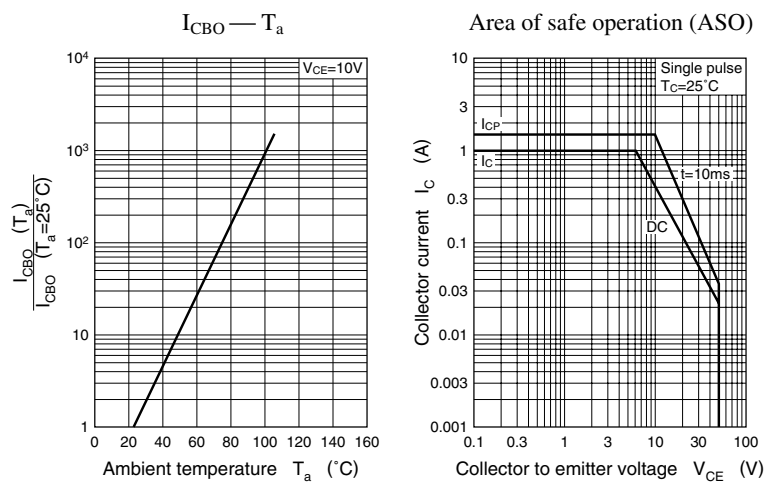
■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20\text{ V}, I_E = 0$			0.1	μA
Collector to base voltage	V_{CBO}	$I_C = 10\text{ }\mu\text{A}, I_E = 0$	60			V
Collector to emitter voltage	V_{CEO}	$I_C = 2\text{ mA}, I_B = 0$	50			V
Emitter to base voltage	V_{EBO}	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio	h_{FE1} *	$V_{CE} = 10\text{ V}, I_C = 500\text{ mA}$	85		340	
	h_{FE2}	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	50	100		
	h_{FE3}	$V_{CE} = 10\text{ V}, I_C = 1\text{ mA}$	35			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$		0.2	0.4	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$		0.85	1.2	V
Transition frequency	f_T	$V_{CB} = 10\text{ V}, I_E = -50\text{ mA}, f = 200\text{ MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		11		pF

Note) *: Rank classification

Rank	Q	R	S
h_{FE1}	85 to 170	120 to 240	170 to 340





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