

# 2SD2133

## Silicon NPN Epitaxial Planar Type

AF Power Amplifier, Driver  
Complementary Pair with 2SB1413

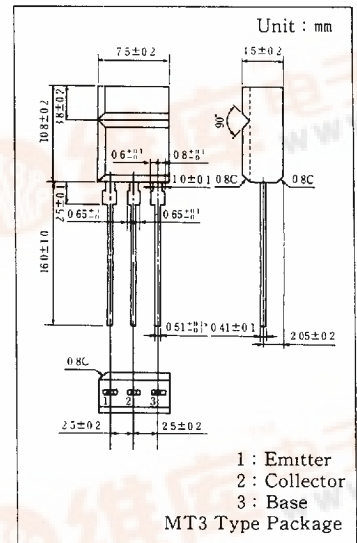
### ■ Features

- Low collector-emitter saturation voltage ( $V_{CE(sat)}$ )
- 15W output in complementary pair with 2SB1413

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

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CB0}$	60	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-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	$T_{stg}$	$-55 \sim +150$	$^{\circ}\text{C}$

### ■ Package Dimensions



### ■ Electrical Characteristics ( $T_c=25^{\circ}\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CB0}$	$V_{CB}=20\text{V}, I_E=0$			0.1	$\mu\text{A}$
Collector-base voltage	$V_{CB0}$	$I_C=10\mu\text{A}, I_E=0$	60			V
Collector-emitter voltage	$V_{CEO}$	$I_C=2\text{mA}, I_B=0$	50			V
Emitter-base voltage	$V_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	5			V
DC current gain	$h_{FE1}^{*1}$	$V_{CE}=10\text{V}, I_C=500\text{mA}^{*2}$	85	160	340	
	$h_{FE2}$	$V_{CE}=5\text{V}, I_B=1\text{A}^{*2}$	50	100		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}^{*2}$		0.2	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}^{*2}$		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

\*2 Pulse measurement

### \*1 $h_{FE1}$ Classifications

Class	Q	R	S
$h_{FE1}$	85~170	120~240	170~340

