

# 2SD2156, 2SD2156A

## Silicon NPN Triple-Diffused Planar Type

High DC Current Gain ( $h_{FE}$ ), Power Amplifier

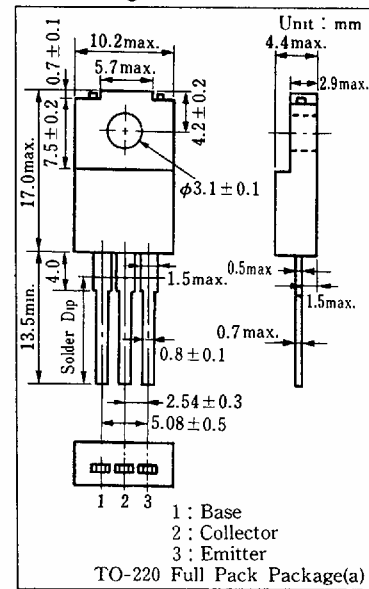
### ■ Features

- High DC current gain ( $h_{FE}$ )
- Good linearity of DC current gain ( $h_{FE}$ )
- "Full Pack" package for simplified mounting on a heat sink with one screw

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

Item	Symbol	Value	Unit
Collector-base voltage	2SD2156	80	V
	2SD2156A	100	
Collector-emitter voltage	2SD2156	60	V
	2SD2156A	80	
Emitter-base voltage	$V_{EBO}$	6	V
Peak collector current	$I_{CP}$	6	A
Collector current	$I_C$	3	A
Base current	$I_B$	1	A
Collector power dissipation	$T_c=25^\circ\text{C}$	25	W
	$T_a=25^\circ\text{C}$	2	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

### ■ Package Dimensions



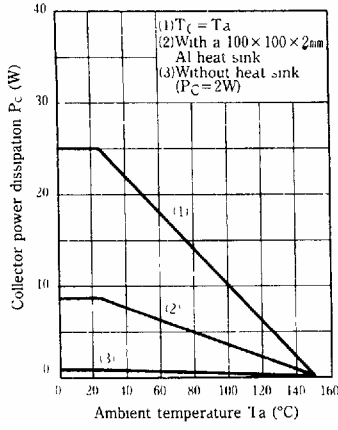
### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SD2156	$V_{CB}=80\text{V}, I_E=0$			100	$\mu\text{A}$
	2SD2156A	$V_{CB}=100\text{V}, I_E=0$			100	
Collector cutoff current	$I_{CEO}$	$V_{CE}=40\text{V}, I_B=0$			100	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			100	$\mu\text{A}$
Collector-emitter voltage	2SD2156	$I_C=25\text{mA}, I_B=0$	60			V
	2SD2156A		80			
DC current gain	$h_{FE}^*$	$V_{CE}=4\text{V}, I_C=0.5\text{A}$	500		2500	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.05\text{A}$			1	V
Transition frequency	$f_T$	$V_{CE}=12\text{V}, I_C=0.2\text{A}, f=10\text{MHz}$		50		MHz

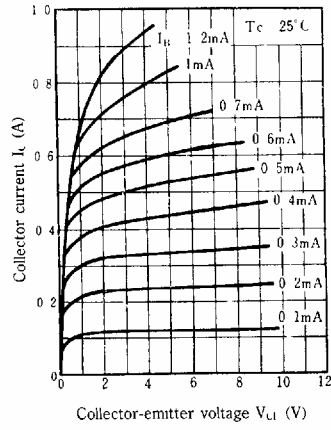
### \* $h_{FE}$ Classifications

Class	Q	P	O
$h_{FE}$	500 ~ 1000	800 ~ 1500	1200 ~ 2500

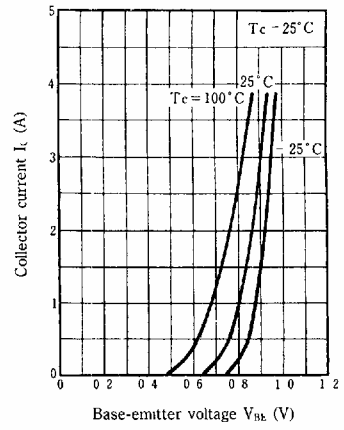
$P_C - T_a$



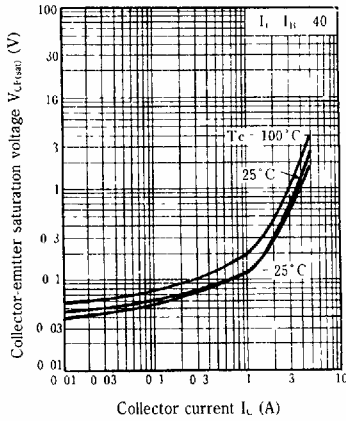
$I_C - V_{CE}$



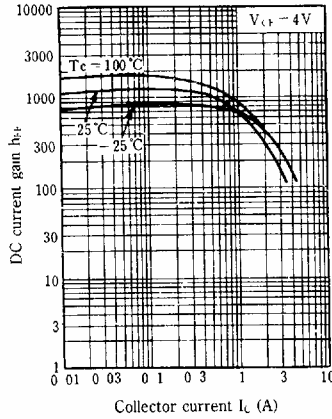
$I_C - V_{BE}$



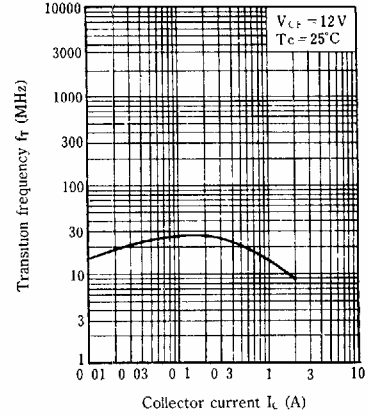
$V_{CE(sat)} - I_C$



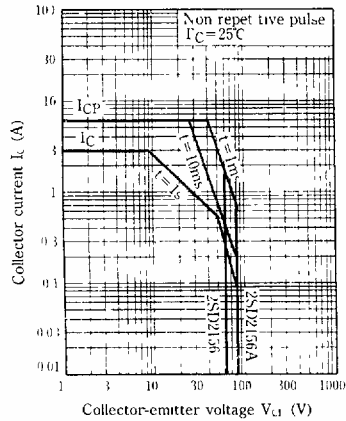
$h_{FE} - I_C$



$f_T - I_C$



Safety operation area-forward bias (ASO)



$R_{th(t)} - t$

