

2SD1643, 2SD1643A

Silicon PNP Triple-Diffused Planar Type

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

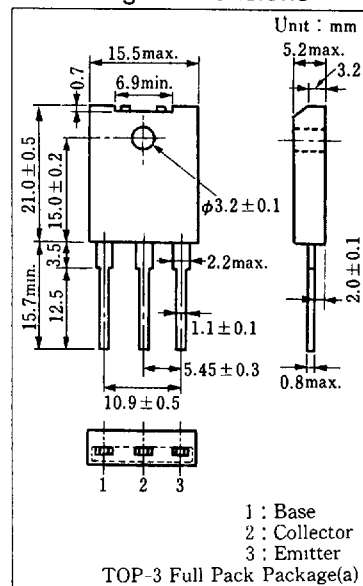
Features

- 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	2SD1643	80	V
	2SD1643A	100	
Collector-emitter voltage	2SD1643	60	V
	2SD1643A	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	$T_c = 25^\circ\text{C}$	50	W
	$T_a = 25^\circ\text{C}$	3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

Package Dimensions



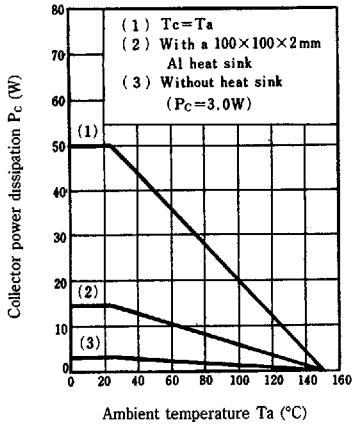
Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=80\text{ V}, I_E=0$			100	μA
		$V_{CB}=100\text{ V}, I_E=0$			100	
Collector cutoff current	I_{CEO}	$V_{CE}=40\text{ V}, I_B=0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=6\text{ V}, I_C=0$			100	μA
Collector-emitter voltage	V_{CEO}	$I_C=25\text{ mA}, I_B=0$	60			V
			80			
DC current gain	h_{FF}^*	$V_{CE}=4\text{ V}, I_C=0.5\text{ A}$	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

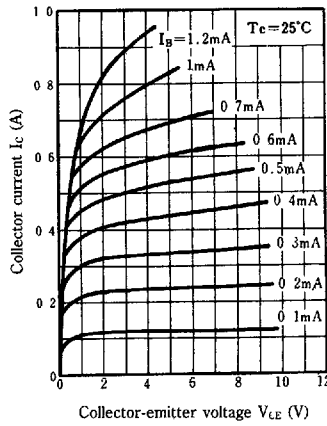
* h_{FE} Classifications

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

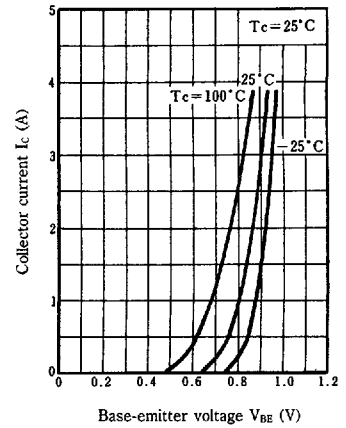
$P_C - T_a$



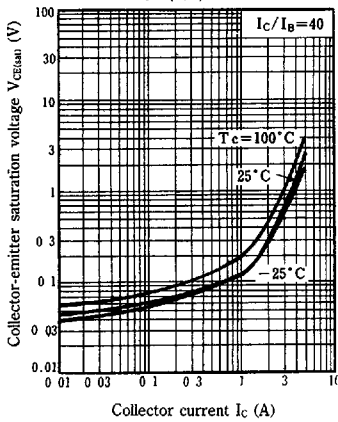
$I_C - V_{CE}$



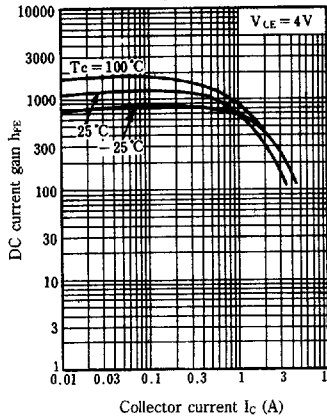
$I_C - V_{BE}$



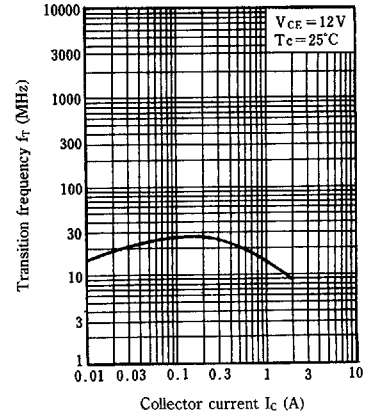
$V_{CE(sat)} - I_C$



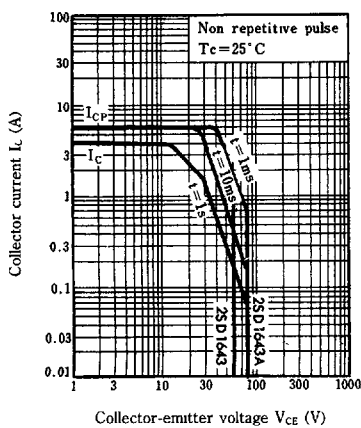
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

