

2SD1510

Silicon PNP Triple-Diffused Planar Darlington Type

Power Amplifier

■ Features

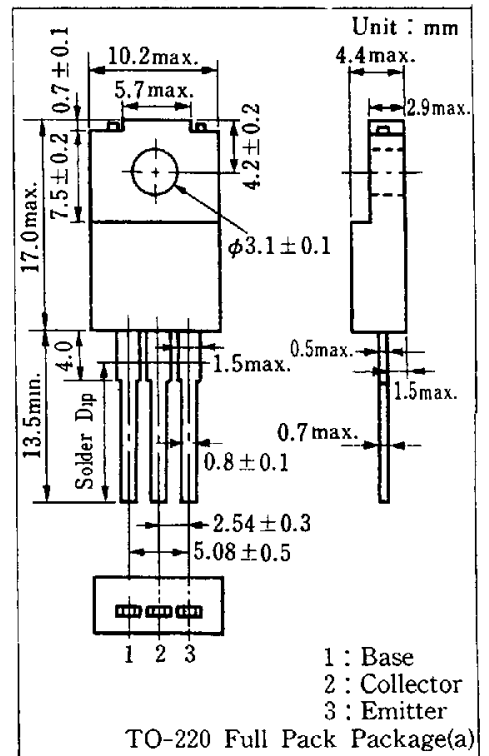
- High DC current gain (h_{FE})
- High speed switching
- "Full Pack" package for simplified mounting on a heat sink with one screw

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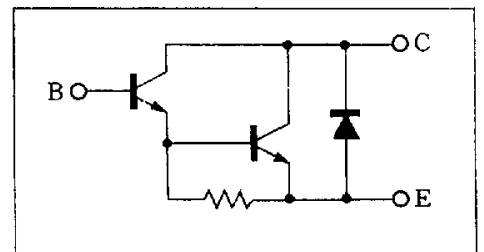
■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CE0}	60	V
Emitter-base voltage	V_{EB0}	6	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Collector power dissipation	$T_c=25^\circ\text{C}$	35	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



■ Inner Circuit



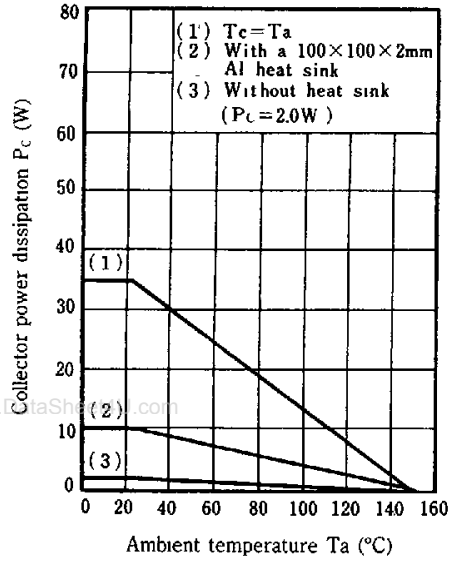
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CB0}	$V_{CB}=60\text{ V}, I_E=0$			100	μA
Emitter cutoff current	I_{EB0}	$V_{EB}=6\text{ V}, I_C=0$			2	mA
Collector-emitter voltage	V_{CE0}	$I_C=30\text{ mA}, I_B=0$	60			V
DC current gain	h_{FE1}	$V_{CE}=3\text{ V}, I_C=0.5\text{ A}$	1000			
	h_{FE2}^*	$V_{CE}=3\text{ V}, I_C=3\text{ A}$	1000		10000	
Base-emitter voltage	V_{BE}	$V_{CE}=3\text{ V}, I_C=3\text{ A}$			2.5	V
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=3\text{ A}, I_B=12\text{ mA}$			2	V
	$V_{CE(sat)2}$	$I_C=5\text{ A}, I_B=20\text{ mA}$			4	V
Transition frequency	f_T	$V_{CE}=10\text{ V}, I_C=0.5\text{ A}, f=1\text{ MHz}$		20		MHz

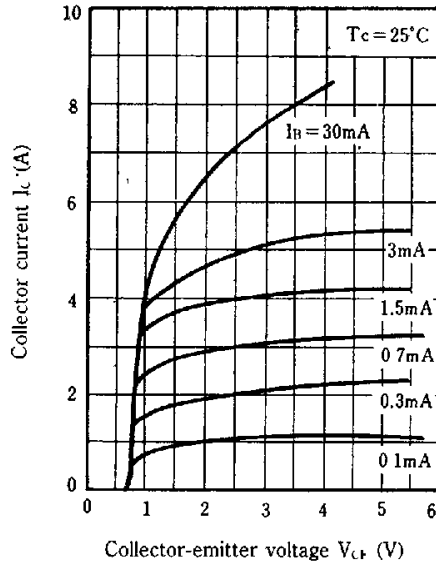
* h_{FE2} Classifications

Class	R	Q	P
h_{FE2}	1000 ~ 2500	2000 ~ 5000	4000 ~ 10000

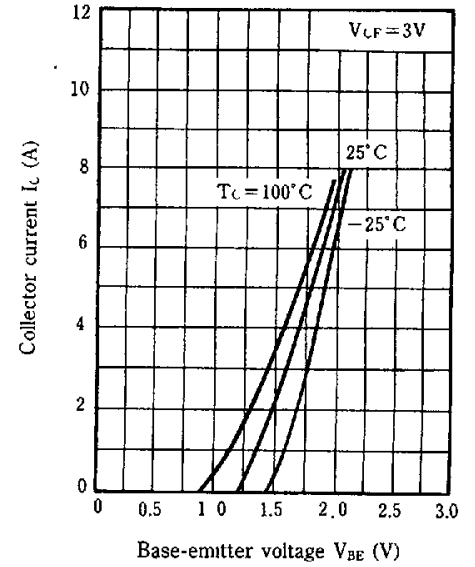
$P_C - T_a$



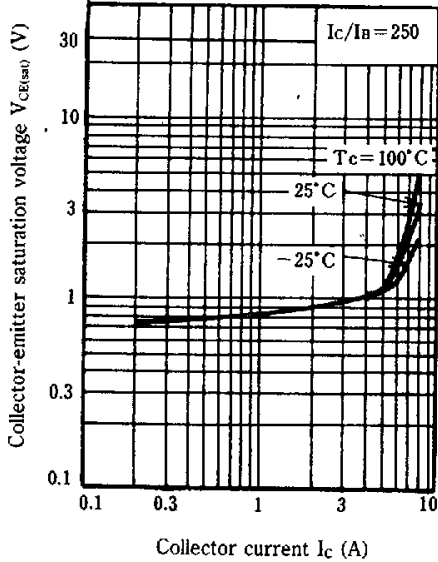
$I_C - V_{CE}$



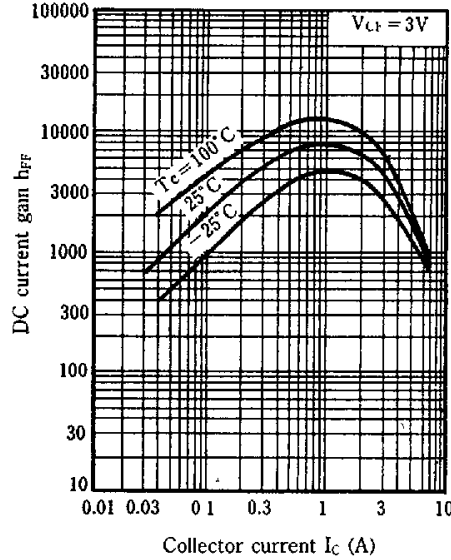
$I_C - V_{BE}$



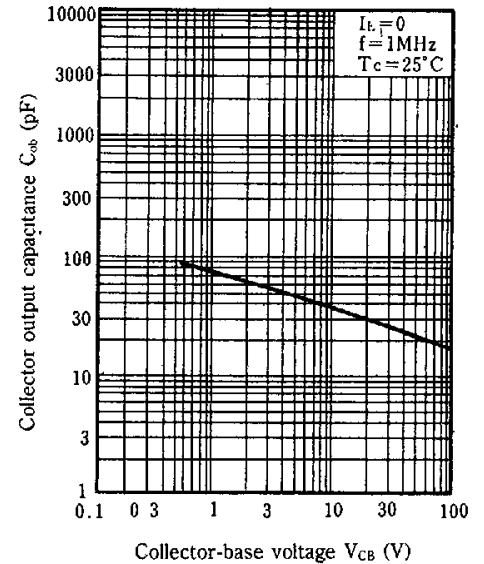
$V_{CE(sat)} - I_C$



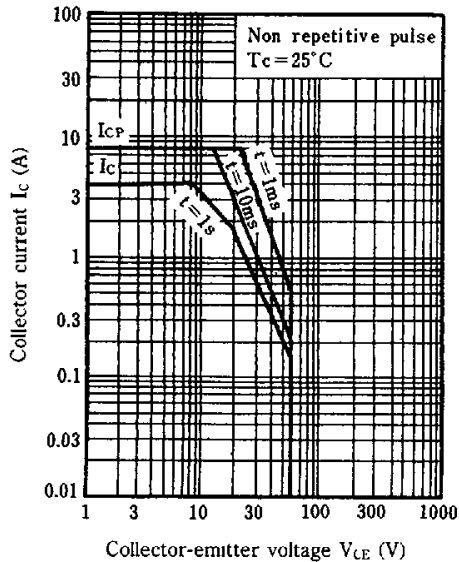
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$

