

2SD1277, 2SD1277A

Silicon NPN Triple-Diffused Planar Darlington Type

Medium Speed Switching

Complementary Pair with 2SB951, 2SB951A

■ Features

- High DC current gain (h_{FE})
- High speed switching
- "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	V_{CB0}	2SD1277	60	V
		2SD1277A	80	
Collector-emitter voltage	V_{CE0}	2SD1277	60	V
		2SD1277A	80	
Emitter-base voltage	V_{EB0}	7	V	
Peak collector current	I_{CP}	12	A	
Collector current	I_C	8	A	
Collector power dissipation	P_C	$T_c = 25^\circ\text{C}$	45	W
		$T_a = 25^\circ\text{C}$	2	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$	

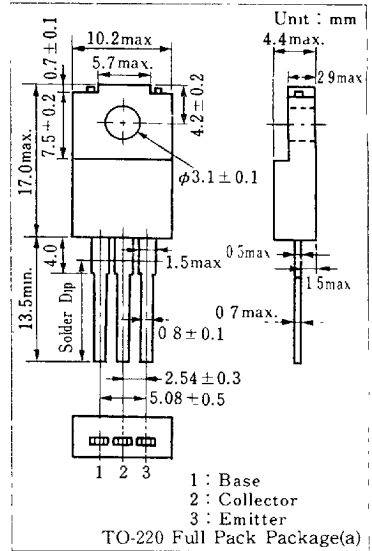
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 60\text{V}, I_B = 0$			100	μA
		$V_{CB} = 80\text{V}, I_B = 0$			100	
Emitter cutoff current	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$			2	mA
Collector-emitter voltage	V_{CE0}	$I_C = 30\text{mA}, I_B = 0$	60			V
			80			
DC current gain	h_{FE1}^*	$V_{CE} = 3\text{V}, I_C = 4\text{A}$	1000		10000	
	h_{FE2}	$V_{CE} = 3\text{V}, I_C = 8\text{A}$	500			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$			2	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}, f = 1\text{MHz}$	20			MHz
Turn-on time	t_{on}	$I_C = 4\text{A}, I_{B1} = 8\text{mA}, I_{B2} = -8\text{mA}$ $V_{CC} = 50\text{V}$		0.5		μs
Storage time	t_{stg}			4		μs
Fall time	t_f			1		μs

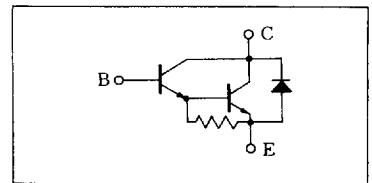
* h_{FE1} Classifications

Class	R	Q	P
h_{FE1}	1000 ~ 2500	2000 ~ 5000	4000 ~ 10000

■ Package Dimensions



■ Inner Circuit



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