2SD1277, 2SD1277A

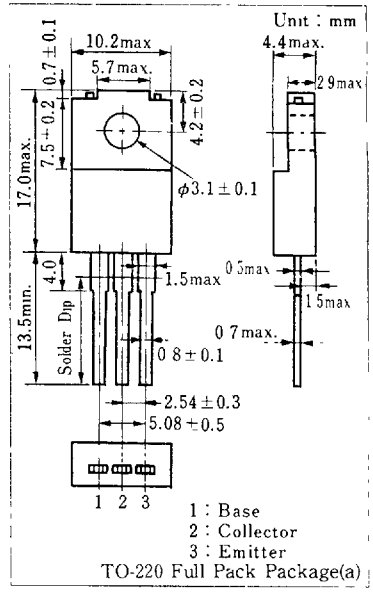
Silicon NPN Triple-Diffused Planar Darlington Type

Medium Speed Switching
Complementary Pair with 2SB951, 2SB951A

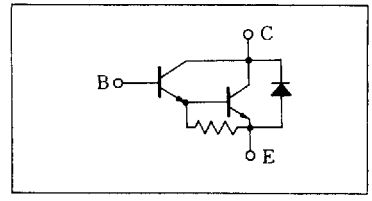
■ Features

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

■ Package Dimensions



■ Inner Circuit



■ Absolute Maximum Ratings (Tc=25°C)

Item		Symbol	Value	Unit
Collector-base voltage	2SD1277	V_{CBO}	60	V
	2SD1277A		80	
Collector-emitter voltage	2SD1277	V_{CEO}	60	V
	2SD1277A		80	
Emitter-base voltage		V_{EBO}	7	V
Peak collector current		I_{CP}	12	A
Collector current		I_C	8	A
Collector power dissipation	Tc=25 °C	P_C	45	W
	Ta=25 °C		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55~+150	°C

■ Electrical Characteristics (Tc=25°C)

Item		Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SD1277	I_{CBO}	V_{CB}=60 V, I_E=0			100	μA
	2SD1277A		V_{CB}=80 V, I_E=0			100	
Emitter cutoff current		I_{EBO}	V_{EB}=7 V, I_C=0			2	mA
Collector-emitter voltage	2SD1277	V_{CEO}	I_C=30 mA, I_B=0	60			V
	2SD1277A			80			
DC current gain		h_{FE1}*	V_{CE}=3 V, I_C=4 A	1000		10000	
		h_{FE2}	V_{CE}=3 V, I_C=8 A	500			
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=4 A, I_B=8 mA			1.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=4 A, I_B=8 mA			2	V
Transition frequency		f_T	V_{CE}=10V, I_C=0.5A, f=1MHz	20			MHz
Turn-on time		t_{on}	I_C=4A, I_{B1}=8mA, I_{B2}=−8mA, V_{CC}=50V		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