

2SD1276, 2SD1276A

Silicon NPN Triple-Diffused Planar Darlington Type

Power Amplifier

Complementary Pair with 2SB950, 2SB950A

■ 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}	60	V
		80	
Collector-emitter voltage	V_{CE0}	60	V
		80	
Emitter-base voltage	V_{EB0}	5	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Collector power dissipation	P_C	40	W
		2	
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

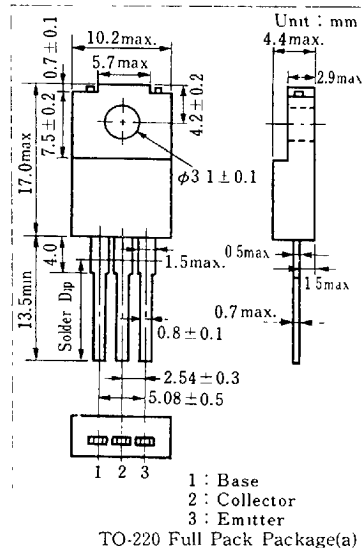
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CB0}	$V_{CB}=60\text{ V}, I_E=0$			200	μA
		$V_{CB}=80\text{ V}, I_E=0$			200	
Collector cutoff current	I_{CE0}	$V_{CE}=30\text{ V}, I_B=0$			500	μA
		$V_{CE}=40\text{ V}, I_B=0$			500	
Emitter cutoff current	I_{EB0}	$V_{EB}=5\text{ V}, I_C=0$			2	mA
Collector-emitter voltage	V_{CE0}	$I_C=30\text{ mA}, I_B=0$	60			V
			80			
DC current gain	h_{FE1}	$V_{CE}=3\text{ V}, I_C=0.5\text{ A}$	1000			
	h_{FE2}^*	$V_{CE}=3\text{ V}, I_C=3\text{ A}$	1000		10000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{ A}, I_B=12\text{ mA}$			2	V
		$I_C=5\text{ A}, I_B=20\text{ mA}$			4	
Base-emitter voltage	V_{BE}	$V_{CE}=3\text{ V}, I_C=3\text{ A}$			2.5	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}	$I_C=3\text{ A}, I_{B1}=12\text{ mA}, I_{B2}=-12\text{ mA}$ $V_{CC}=50\text{ V}$		0.5		μs
Storage time	t_{stg}			4		μs
Fall time	t_f			1		μs

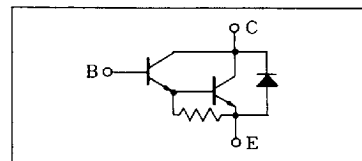
* h_{FE2} Classifications

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

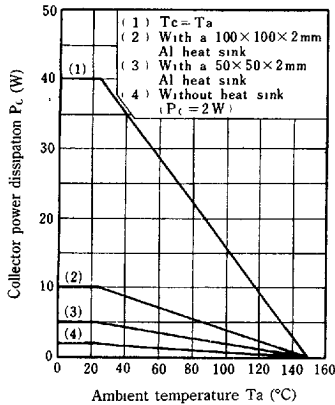
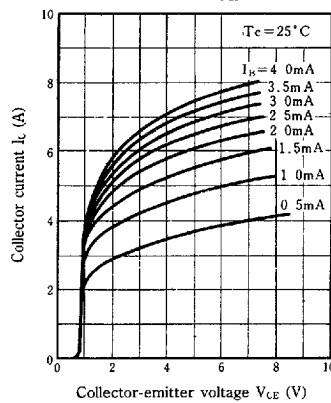
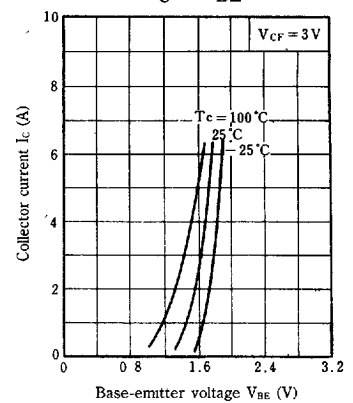
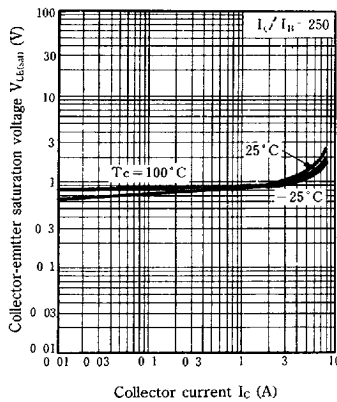
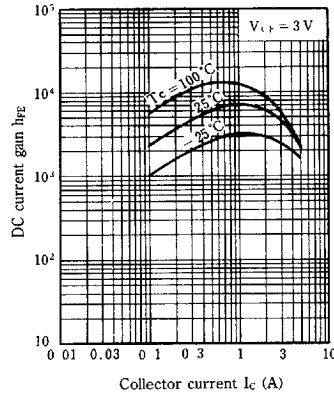
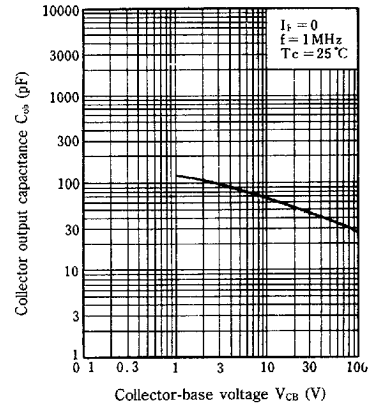
■ Package Dimensions



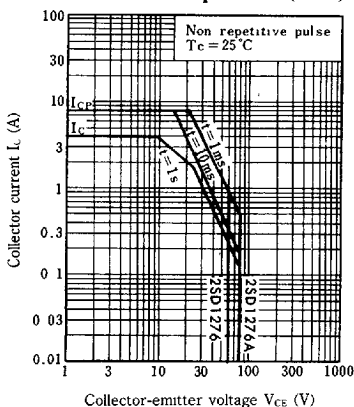
■ Inner Circuit



6932852 0016682 8T9

$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 