

2SD1850

Silicon NPN Triple-Diffused Planar Type

Horizontal Deflection Output

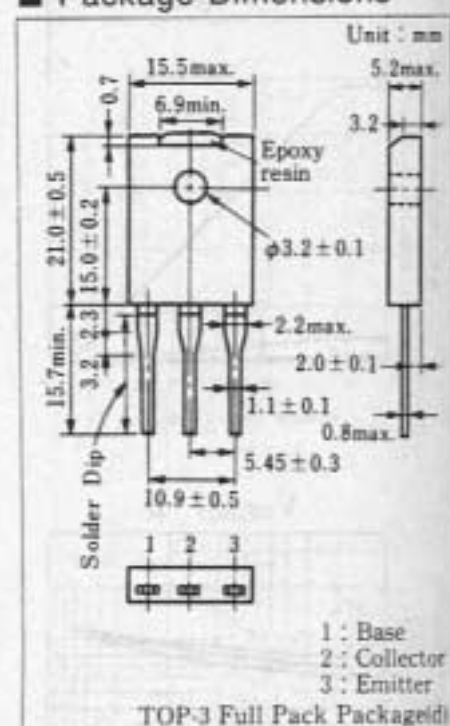
■ Features

- High breakdown voltage, high reliability
- High speed switching
- Wide area of safety operation (ASO)
- "Full Pack" package for simplified mounting on a heat sink with one screw

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

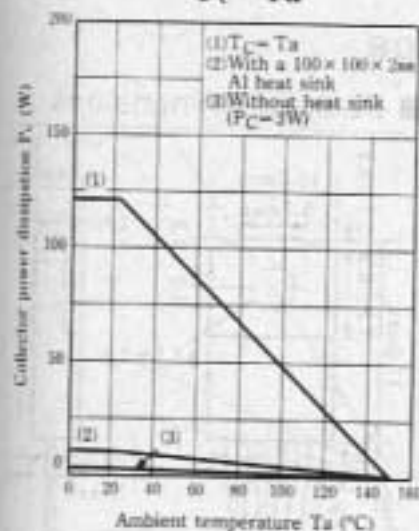
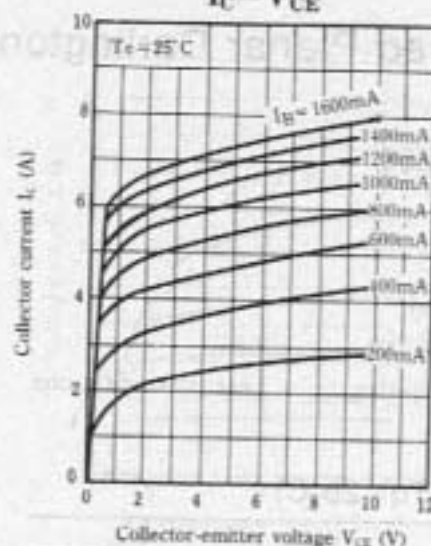
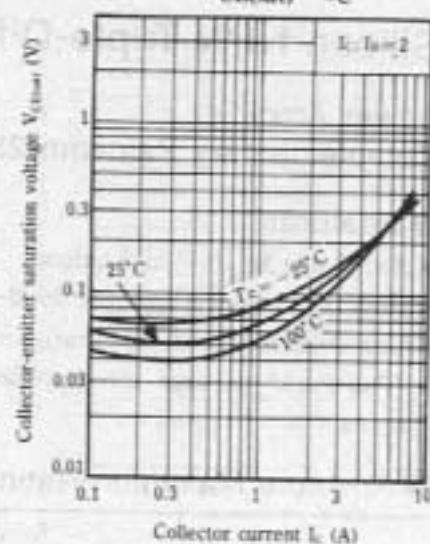
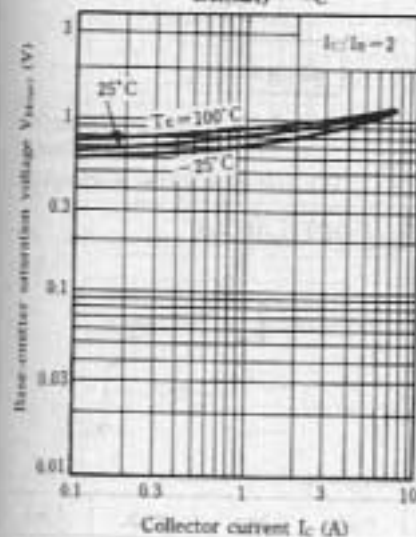
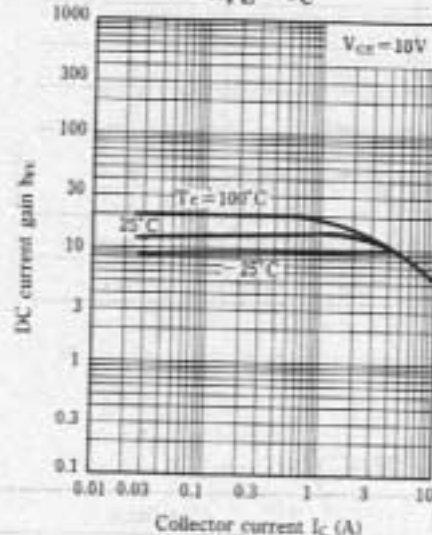
Item		Symbol	Value	Unit
Collector-base voltage		V_{CBO}	1500	V
Collector-emitter voltage		V_{CES}	1500	V
		V_{CEO}	700	V
Emitter-base voltage		V_{EBO}	7	V
Peak collector current		I_{CP}	20	A
Collector current		I_C	7	A
Base current		I_B	3	A
Collector power dissipation	$T_C = 25^{\circ}\text{C}$	P_C	120	W
	$T_a = 25^{\circ}\text{C}$		3	
Junction temperature		T_j	150	$^{\circ}\text{C}$
Storage temperature		T_{sta}	$-55 \sim +150$	$^{\circ}\text{C}$

■ Package Dimensions

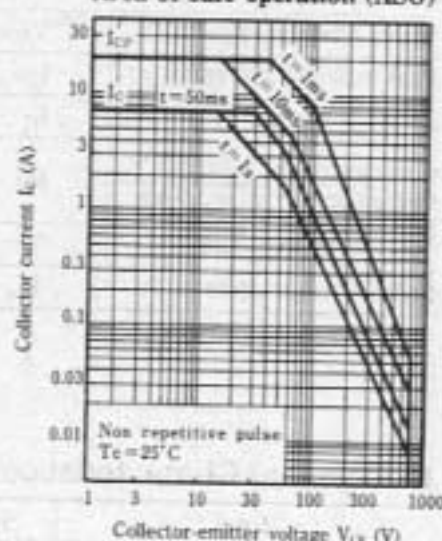


■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

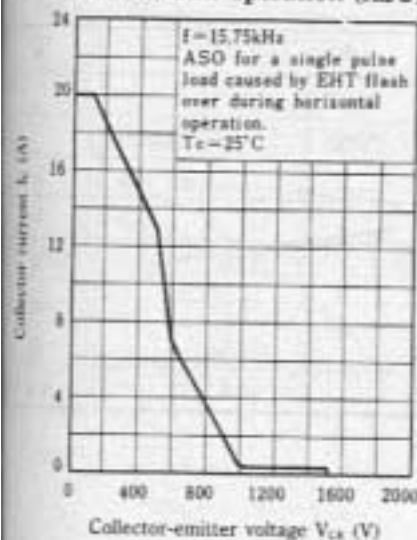
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CB0}	$V_{CB}=1000\text{V}, I_E=0$			10	μA
		$V_{CB}=1500\text{V}, I_E=0$			1	mA
Emitter-base voltage	V_{EBO}	$I_E=1\text{mA}, I_C=0$		7		V
DC current gain	h_{FE1}	$V_{CE}=5\text{V}, I_C=1\text{A}$	5		25	
	h_{FE2}	$V_{CE}=5\text{V}, I_C=6\text{A}$	4.5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=6\text{A}, I_B=1.5\text{A}$			8	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=6\text{A}, I_B=1.5\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=1\text{A}, f=0.5\text{MHz}$		2		MHz
Storage time (L load)	t_{stg}	$I_C=6\text{A}, I_{B1}=1.5\text{A}$			11	μs
Collector current fall time (L load)	t_f	$I_{B2}=-1.5\text{A}, L_{load}=5\mu\text{H}$			0.8	μs
Storage time (R load)	t_{stg}	$I_C=6\text{A}, I_{B1}=1.5\text{A}$		1.5		μs
Collector current fall time (R load)	t_f	$I_{B2}=-3\text{A}, V_{CC}=200\text{V}$		0.2		μs

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

Area of safe operation (ASO)



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 $R_{th(t)} - t$ 