# 2SD1893

## Silicon NPN triple diffusion planar type Darlington

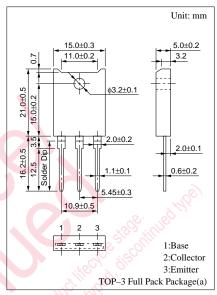
For power amplification Complementary to 2SB1253

#### Features

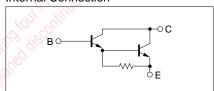
- Optimum for 40W HiFi output
- High foward current transfer ratio h<sub>FE</sub>: 5000 to 30000
- Low collector to emitter saturation voltage V<sub>CE(sat)</sub>: <2.5V
- Full-pack package which can be installed to the heat sink with one screw

### Absolute Maximum Ratings (T<sub>C</sub>=25°C)

Parameter		Symbol	Ratings	Unit	
Collector to base voltage		$V_{CBO}$	130	V	
Collector to emitter voltage		$V_{CEO}$	110	V	
Emitter to base voltage		$V_{\rm EBO}$	5	V	
Peak collector current		$I_{CP}$	10	A	
Collector current		$I_{C}$	6	A	
Collector power	T <sub>C</sub> =25°C	D.	50	W	
dissipation	Ta=25°C	$P_{C}$	3	W	
Junction temperature		$T_{\rm j}$	150	°C	
Storage temperature		T <sub>stg</sub>	-55 to +150	°C	



#### Internal Connection



### Electrical Characteristics (T<sub>C</sub>=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
C-11	I <sub>CBO</sub>	$V_{CB} = 130V, I_E = 0$			100	μΑ
Collector cutoff current	$I_{CEO}$	$V_{CE} = 110V, I_{B} = 0$			100	μΑ
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			100	μΑ
Collector to emitter voltage	V <sub>CEO</sub>	$I_C = 30 \text{mA}, I_B = 0$	110			V
Forward current transfer ratio	h <sub>FE1</sub>	$V_{CE} = 5V$ , $I_C = 1A$	2000			
	h <sub>FE2</sub> *	$V_{CE} = 5V$ , $I_C = 5A$	5000		30000	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	$I_C = 5A, I_B = 5mA$			2.5	V
Base to emitter saturation voltage	V <sub>BE(sat)</sub>	$I_C = 5A$ , $I_B = 5mA$			3.0	V
Transition frequency	$f_T$	$V_{CE} = 10V, I_{C} = 0.5A, f = 1MHz$		20		MHz
Turn-on time	t <sub>on</sub>	I 5 A I 5 A I 5 A		1.4		μs
Storage time	t <sub>stg</sub>	$I_C = 5A$ , $I_{B1} = 5mA$ , $I_{B2} = -5mA$ ,		4.5		μs
Fall time	t <sub>f</sub>	$V_{CC} = 50V$		0.8		μs

#### \*h<sub>FE2</sub> Rank classification

Rank	Q	P
h <sub>FE2</sub>	5000 to 15000	8000 to 30000

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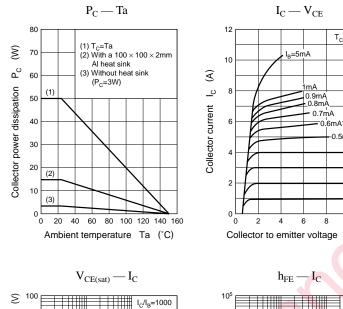
T<sub>C</sub>=25°C

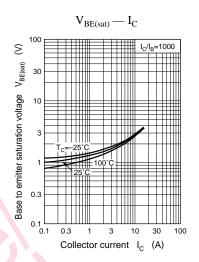
3mA

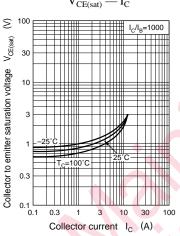
0.2mA

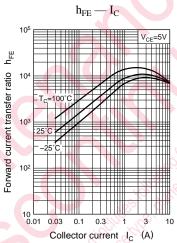
.1mA

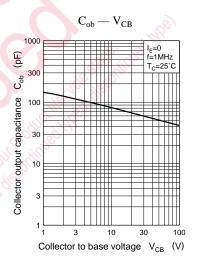
V<sub>CE</sub> (V)

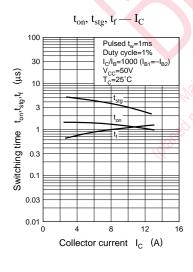


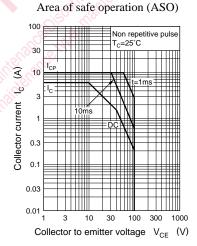






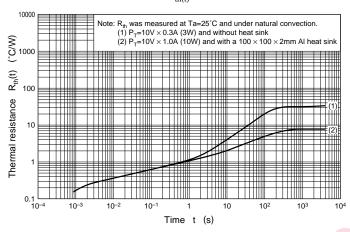






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