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# 2SD1978

Silicon NPN Epitaxial, Darlington

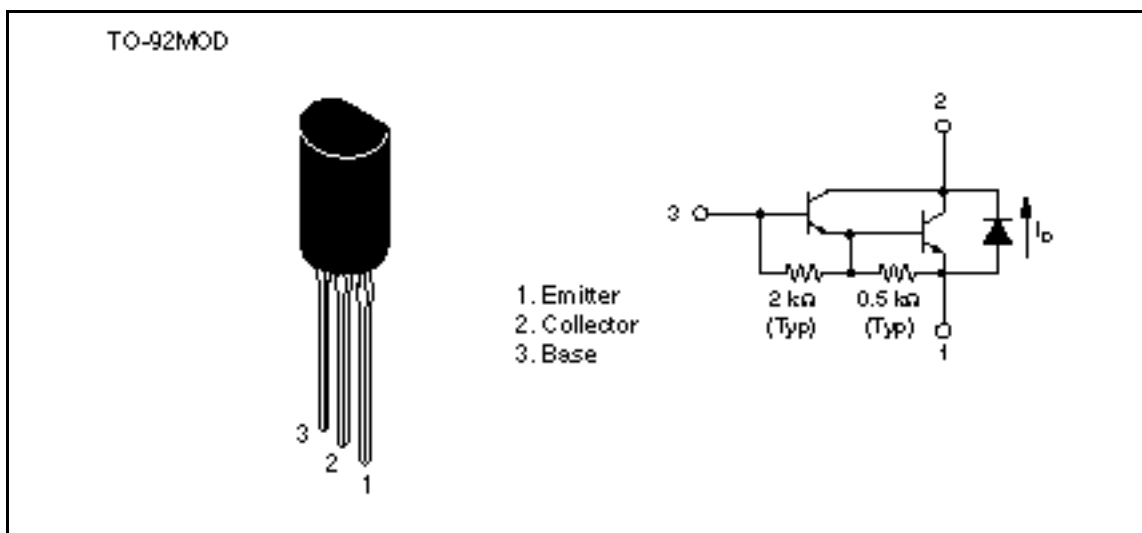
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## Application

- Low frequency power amplifier
- Complementary pair with 2SB1387

## Outline



## 2SD1978

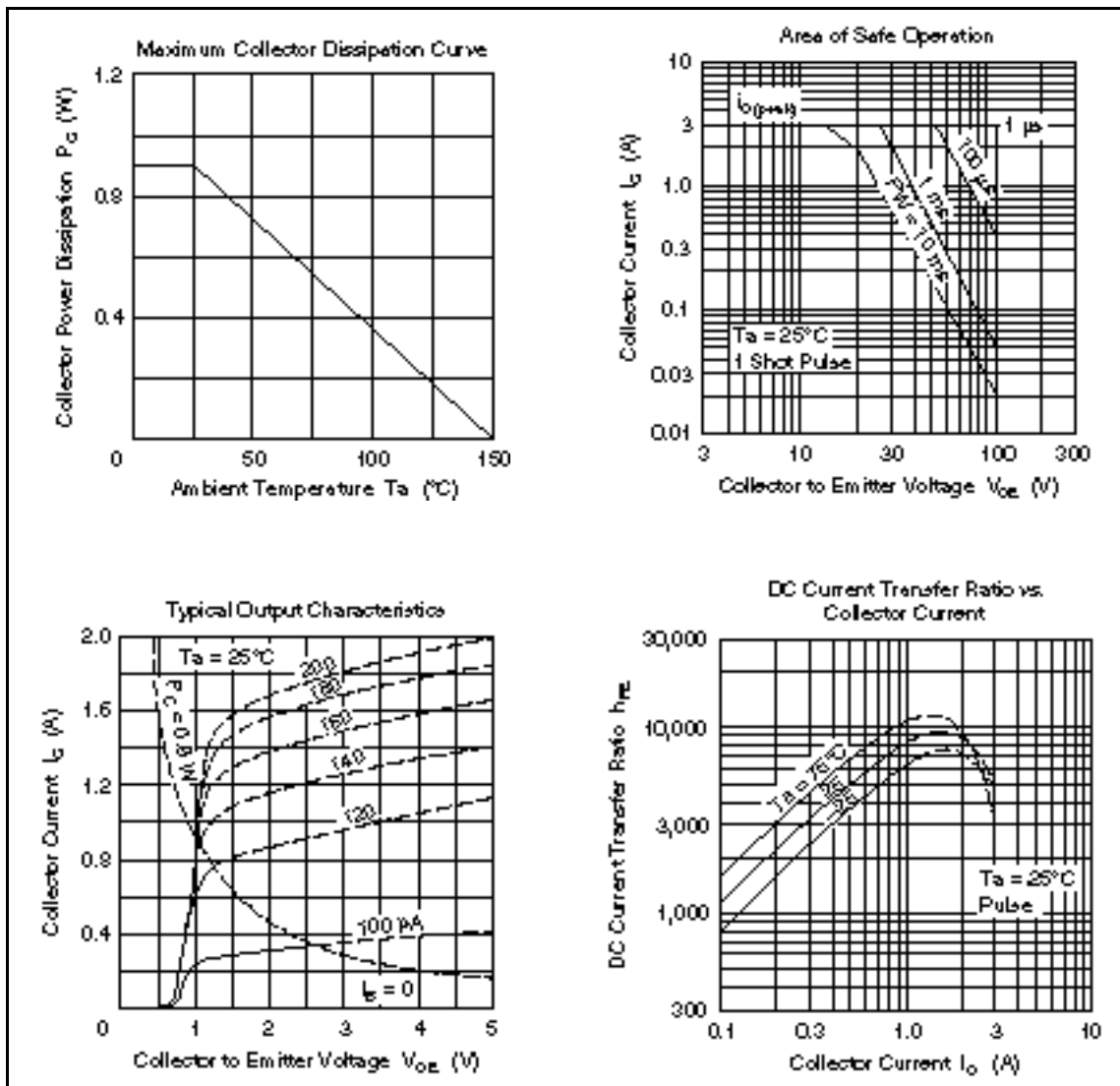
### Absolute Maximum Ratings (Ta = 25°C)

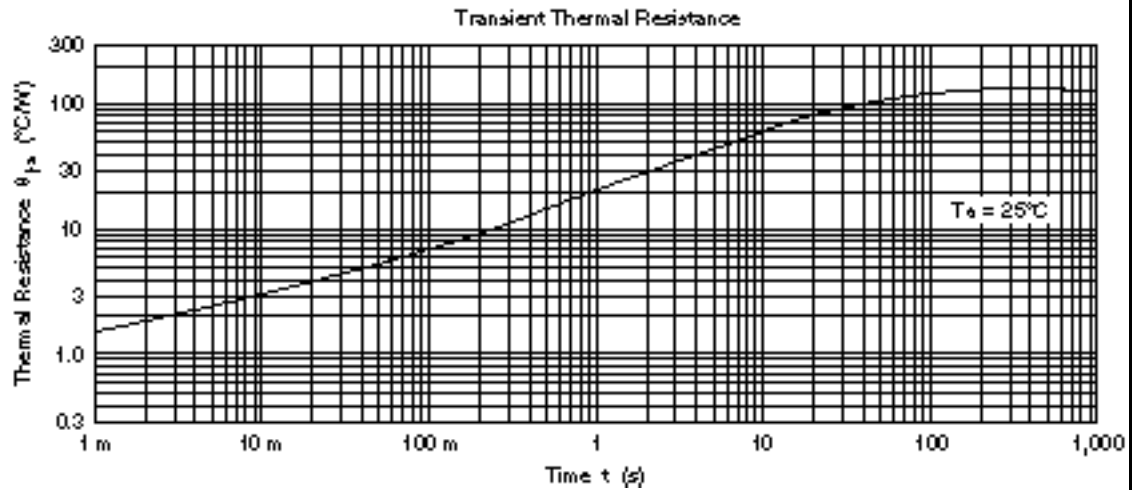
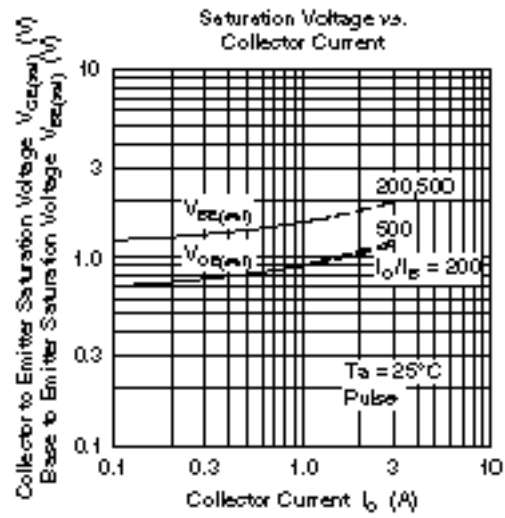
Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	120	V
Collector to emitter voltage	$V_{CEO}$	120	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	1.5	A
Collector peak current	$i_{c (peak)}$	3.0	A
Collector power dissipation	$P_C$	0.9	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C
E to C diode forward current	$I_D$	1.5	A

### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	$I_C = 0.1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	$I_C = 10 \text{ mA}, R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	1.0	$\mu\text{A}$	$V_{CB} = 100 \text{ V}, I_E = 0$
	$I_{CEO}$	—	—	10	$\mu\text{A}$	$V_{CE} = 100 \text{ V}, R_{BE} =$
DC current transfer ratio	$h_{FE}$	2000	—	30000		$V_{CE} = 3 \text{ V}, I_C = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
	$V_{CE(sat)2}$	—	—	2.0	V	$I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	2.0	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
	$V_{BE(sat)2}$	—	—	2.5	V	$I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$
E to C diode forward voltage	$V_D$	—	—	3.0	V	$I_D = 1.5 \text{ A}^{*1}$

Note: 1. Pulse test





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