

2SD1978

Silicon NPN Epitaxial, Darlington

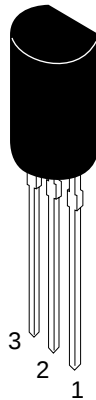
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Application

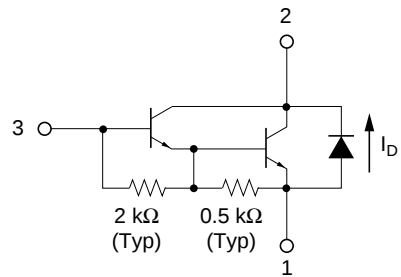
- Low frequency power amplifier
- Complementary pair with 2SB1387

Outline

TO-92MOD



1. Emitter
2. Collector
3. Base



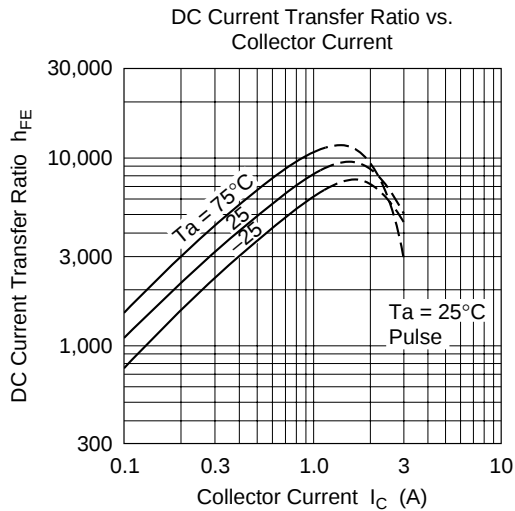
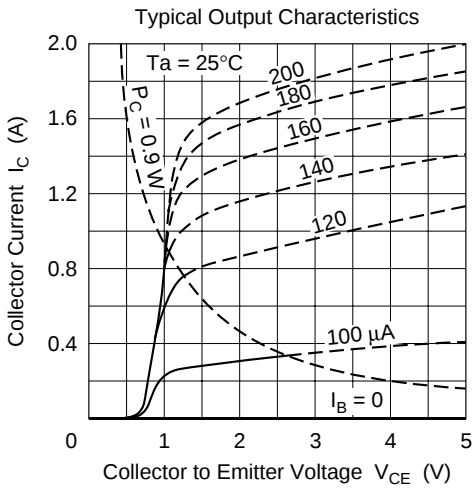
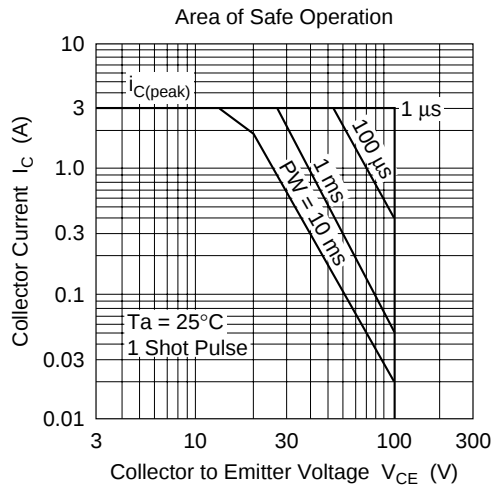
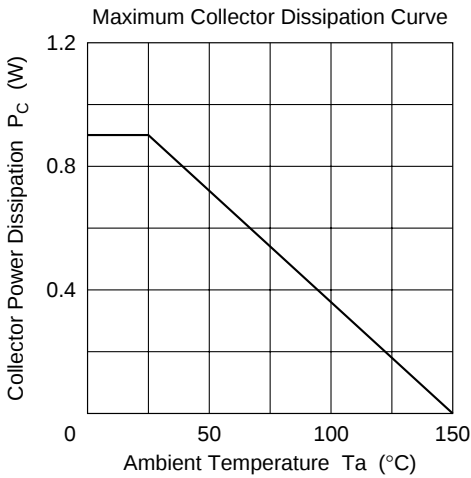
Absolute Maximum Ratings (Ta = 25°C)

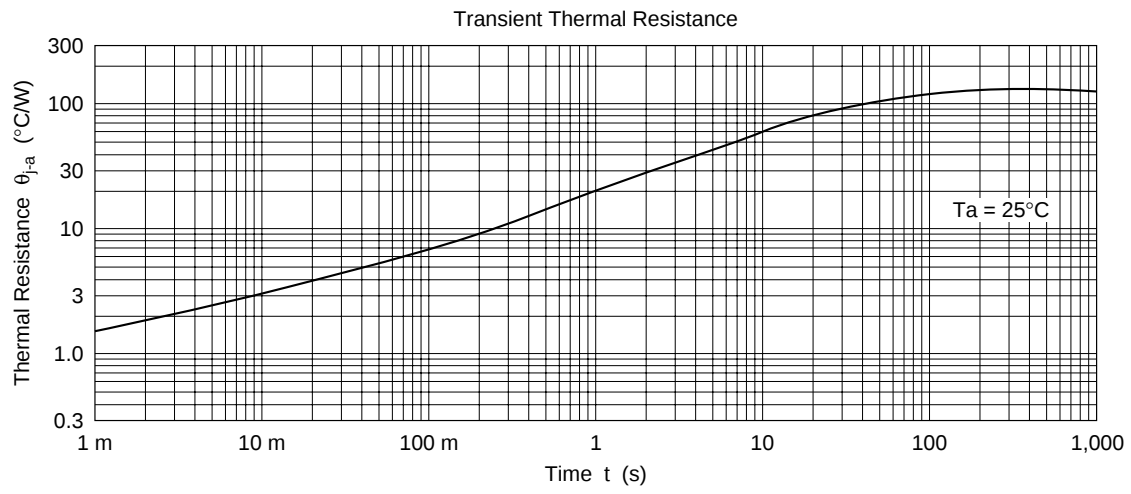
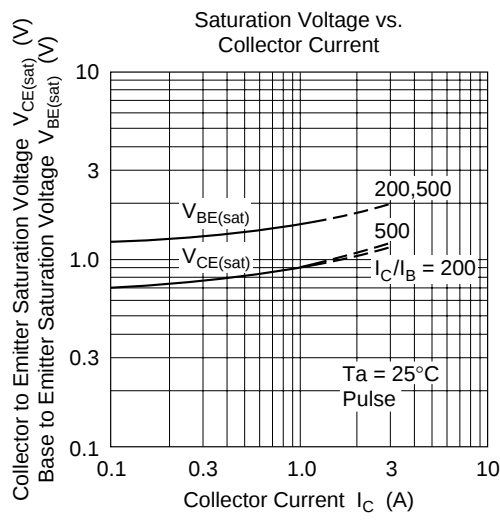
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	1.5	A
Collector peak current	$i_{c\text{ (peak)}}$	3.0	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	°C
Storage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

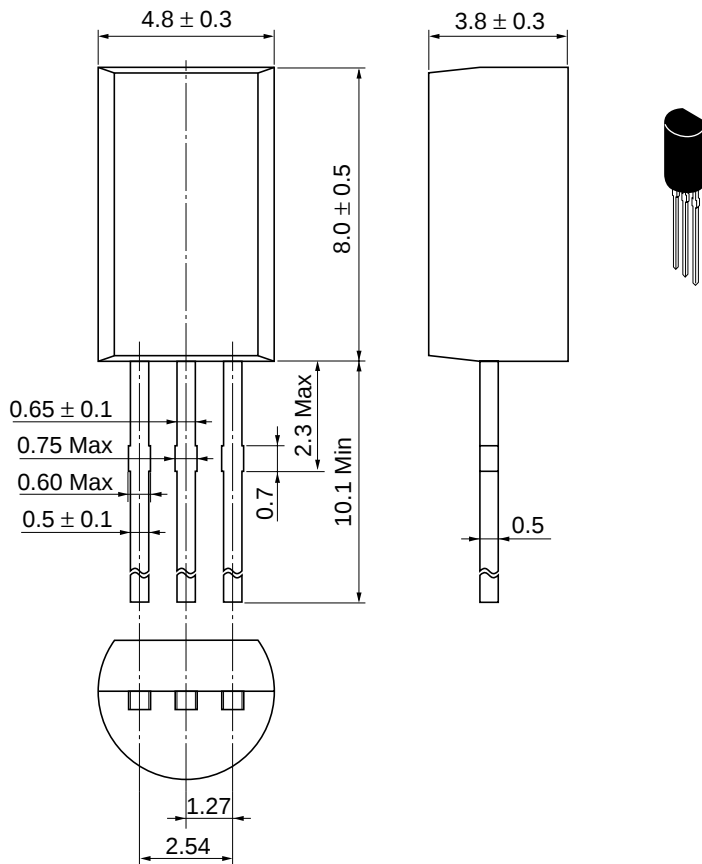
Electrical Characteristics (Ta = 25°C)

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	$I_C = 10\text{ mA}$, $R_{BE} = \infty$
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	μA	$V_{CB} = 100\text{ V}$, $I_E = 0$
	I_{CEO}	—	—	10	μA	$V_{CE} = 100\text{ V}$, $R_{BE} = \infty$
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







Hitachi Code	TO-92 Mod
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.35 g

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