



PRODUCT NAME : 2N1893 NPN Medium Power Transistor

PRICE : Rs 30.00

SKU : RM1797



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DESCRIPTION

Features

- Collector-Emitter Volt (V_{ce0}): 80V
- Collector-Base Volt (V_{cb0}): 120V
- Collector Current (I_c): 0.5A
- h_{fe} : 40-120 @ 150mA
- Power Dissipation (P_{tot}): 3000mW
- Current-Gain-Bandwidth (f_{total}): 70MHz
- Type: NPN

NPN medium power transistor

2N1893

FEATURES

- Low current (max. 500 mA)
- Low voltage (max. 80 V).

APPLICATIONS

- High performance amplifiers
- Oscillator and switching applications.

DESCRIPTION

NPN medium power transistor in a TO-39 metal package.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector, connected to case

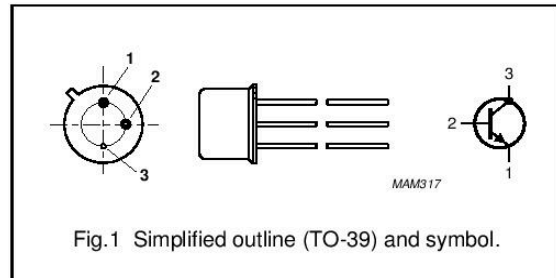


Fig.1 Simplified outline (TO-39) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	120	V
V_{CEO}	collector-emitter voltage	open base	–	80	V
I_{CM}	peak collector current		–	1	A
P_{tot}	total power dissipation	$T_{case} \leq 25\text{ °C}$	–	3	W
h_{FE}	DC current gain	$I_C = 150\text{ mA}; V_{CE} = 10\text{ V}$	40	120	

NPN medium power transistor

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LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter	–	120	V
V _{CEO}	collector-emitter voltage	open base	–	80	V
V _{EBO}	emitter-base voltage	open collector	–	7	V
I _C	collector current (DC)		–	500	mA
I _{CM}	peak collector current		–	1	A
I _{BM}	peak base current		–	200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	–	800	mW
		T _{case} ≤ 100 °C	–	1.7	W
		T _{case} ≤ 25 °C	–	3	W
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	200	°C
T _{amb}	operating ambient temperature		–65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	in free air	219	K/W
R _{th j-c}	thermal resistance from junction to case		58.3	K/W

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I _{CBO}	collector cut-off current	I _E = 0; V _{CB} = 90 V	–	10	nA
		I _E = 0; V _{CB} = 90 V; T _{amb} = 150 °C	–	15	μA
I _{EBO}	emitter cut-off current	I _C = 0; V _{EB} = 5 V	–	10	nA
h _{FE}	DC current gain	I _C = 0.1 mA; V _{CE} = 10 V	20	–	
		I _C = 10 mA; V _{CE} = 10 V; T _{amb} = –55 °C	20	–	
		I _C = 10 mA; V _{CE} = 10 V; note 1	35	–	
		I _C = 150 mA; V _{CE} = 10 V; note 1	40	120	
V _{CEsat}	collector-emitter saturation voltage	I _C = 50 mA; I _B = 5 mA; note 1	–	900	mV
		I _C = 150 mA; I _B = 15 mA; note 1	–	500	mV
V _{BEsat}	base-emitter saturation voltage	I _C = 50 mA; I _B = 5 mA; note 1	–	1.2	V
		I _C = 150 mA; I _B = 15 mA; note 1	–	1.3	V
C _c	collector capacitance	I _E = i _e = 0; V _{CB} = 10 V; f = 1 MHz	–	15	pF
C _e	emitter capacitance	I _C = i _c = 0; V _{EB} = 0.5 V; f = 1 MHz	–	85	pF

Note

1. Pulse test: t_p ≤ 300 μs; δ = 0.02.

