

NPN general purpose transistor

2PC4081

FEATURES

- S-mini package
- Low output capacitance,
 $C_{ob} = 2 \text{ pF}$ (typ.).

DESCRIPTION

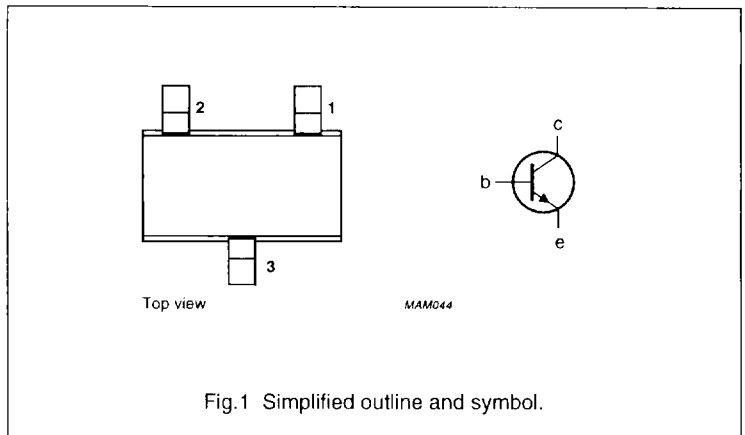
NPN transistor in a plastic three lead SC70 (S-mini) package. It is intended for general purpose switching and small signal amplification.

PINNING SC70

PIN	DESCRIPTION
1	base
2	emitter
3	collector

MARKING

TYPE NUMBER	MARKING CODE
2PC4081Q	ZQ
2PC4081R	ZR
2PC4081S	ZS



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	50	V
V_{CEO}	collector-emitter voltage	open base	–	40	V
I_C	collector current (DC)		–	100	mA
P_{tot}	total power dissipation	up to $T_{amb} = 25 \text{ }^\circ\text{C}$	–	200	mW
h_{FE}	DC current gain	$I_C = 1 \text{ mA}$; $V_{CE} = 6 \text{ V}$	120	560	
f_T	transition frequency	$I_E = -2 \text{ mA}$; $V_{CE} = 12 \text{ V}$; $f = 100 \text{ MHz}$; $T_{amb} = 25 \text{ }^\circ\text{C}$	100	–	MHz

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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	–	50	V
V_{CEO}	collector-emitter voltage	open base	–	40	V
V_{EBO}	emitter-base voltage	open collector	–	5	V
I_C	collector current (DC)		–	100	mA
P_{tot}	total power dissipation	up to $T_{amb} = 25\text{ °C}$; note 1	–	200	mW
T_{amb}	operating ambient temperature		–65	+150	°C
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air; note 1	625	K/W

Note to the “Limiting values” and “Thermal characteristics”

1. In accordance with standard mounting conditions SC70, three lead version.

CHARACTERISTICS $T_{amb} = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	open emitter; $I_C = 50\text{ }\mu\text{A}$; $I_E = 0$	50	–	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; $I_C = I_E = 1\text{ mA}$; $I_B = 0$	40	–	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; $I_E = 50\text{ }\mu\text{A}$; $I_C = 0$	5	–	–	V
V_{CEsat}	saturation voltage	$I_C = 50\text{ mA}$; $I_B = 5\text{ mA}$; note 1	–	–	400	mV
I_{CBO}	collector-base cut-off current	$V_{CB} = 30\text{ V}$; $I_E = 0$	–	–	100	nA
		$V_{CB} = 30\text{ V}$; $I_E = 0$; $T_j = 150\text{ °C}$	–	–	5	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = 4\text{ V}$; $I_C = 0$	–	–	100	nA
h_{FE}	DC current gain 2PC4081Q 2PC4081R 2PC4081S	$I_C = 1\text{ mA}$; $V_{CE} = 6\text{ V}$	120	–	270	
			180	–	390	
			270	–	560	
f_T	transition frequency	$I_E = -2\text{ mA}$; $V_{CE} = 12\text{ V}$; $f = 100\text{ MHz}$	100	–	–	MHz
C_c	output capacitance	$I_E = I_C = 0$; $V_{CB} = 12\text{ V}$; $f = 1\text{ MHz}$	–	2	3.5	pF

Note to the “Characteristics”

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.