PNP general purpose transistor 2PB709A

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 45 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in an SC-59 plastic package.
NPN complement: 2PB601A.

MARKING

TYPE NUMBER	MARKING CODE
2PB709AQ	BQ
2PB709AR	BR
2PB709AS	BS

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

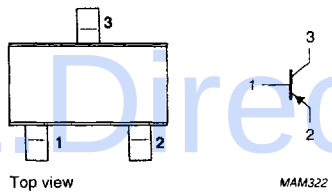

Fig.1 Simplified outline (SC-59) and symbol.

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	−45	V
V_{CEO}	collector-emitter voltage	open base	–	−45	V
I_{CM}	peak collector current		–	−200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	–	250	mW
h_{FE}	DC current gain	$I_C = -2$ mA; $V_{CE} = -10$ V	160	460	
f_T	transition frequency	$I_C = -1$ mA; $V_{CE} = -10$ V; f = 100 MHz			
	2PB709AQ		60	–	MHz
	2PB709AR		70	–	MHz
	2PB709AS		80	–	MHz

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	–	−45	V
V_{CEO}	collector-emitter voltage	open base	–	−45	V
V_{EBO}	emitter-base voltage	open collector	–	−6	V
I_C	collector current (DC)		–	−100	mA
I_{CM}	peak collector current		–	−200	mA
I_{BM}	peak base current		–	−100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	250	mW
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		−65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = -45$ V	–	−10	nA
		$I_E = 0$; $V_{CB} = -45$ V; $T_j = 150$ °C	–	−5	μA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = -5$ V	–	−10	nA
h_{FE}	DC current gain	$I_C = -2$ mA; $V_{CE} = -10$ V			
	2PB709AQ		160	260	
	2PB709AR		210	340	
	2PB709AS		290	460	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -100$ mA; $I_B = -10$ mA; note 1	–	−500	mV
C_c	collector capacitance	$I_E = i_e = 0$; $V_{CB} = -10$ V; f = 1 MHz	–	5	pF
f_T	transition frequency	$I_C = -1$ mA; $V_{CE} = -10$ V; f = 100 MHz			
	2PB709AQ		60	–	MHz
	2PB709AR		70	–	MHz
	2PB709AS		80	–	MHz

Note

1. Pulse test: $t_p \leq 300$ μs; $\delta \leq 0.02$.