PNP general purpose transistors 2PB709; 2PB709A

FEATURES

- High DC current gain
- Low collector-emitter saturation voltage
- S-mini package.

APPLICATIONS

Intended for general purpose switching and amplification.

DESCRIPTION

PNP transistor in a plastic SC59 package. Complementary pairs are 2PD601 and 2PD601A respectively.

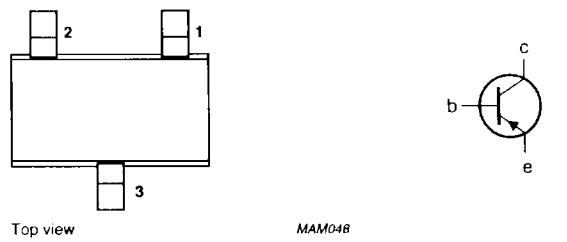

Fig.1 Simplified outline (SC59) and symbol.

MARKING

TYPE NUMBER	MARKING CODE
2PB709Q	AQ
2PB709R	AR
2PB709S	AS
2PB709AQ	BQ
2PB709AR	BR
2PB709AS	BS

PINNING SC59

PIN	DESCRIPTION
1	base
2	emitter
3	collector

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter			
	2PB709		–	–25	V
	2PB709A		–	–45	V
V_{CEO}	collector-emitter voltage	open base			
	2PB709		–	–25	V
	2PB709A		–	–45	V
I_{CM}	peak collector current		–	–200	mA
P_{tot}	total power dissipation	up to T_{amb} = 25 °C	–	250	mW
h_{FE}	DC current gain	I_C = –2 mA; V_{CE} = –10 V	160	460	
f_T	transition frequency	I_E = 2 mA; V_{CB} = –10 V			
	2PB709S		80	–	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			
	2PB709		–	−25	V
	2PB709A		–	−45	V
V_{CEO}	collector-emitter voltage	open base			
	2PB709		–	−25	V
	2PB709A		–	−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
P_{tot}	total power dissipation	up to T_{amb} = 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

THERMAL CHARACTERISTICS

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

Note to the "Limiting values" and "Thermal characteristics"

1. Refer to SC59 standard mounting conditions.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage	open emitter; I_C = −10 μA; I_E = 0			
	2PB709		−25	–	V
	2PB709A		−45	–	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	open base; I_C = −2 mA; I_B = 0; note 1			
	2PB709		−25	–	V
	2PB709A		−45	–	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; I_E = −10 μA; I_C = 0	−6	–	V
V_{CEsat}	collector-emitter saturation voltage	I_C = −100 mA; I_B = −10 mA; note 1	–	−500	mV
I_{CBO}	collector cut-off current	V_{CB} = −20 V; I_E = 0	–	−100	nA
		V_{CB} = −20 V; I_E = 0; T_j = 150 °C	–	−5	μA
I_{EBO}	emitter cut-off current	V_{EB} = −5 V; I_C = 0	–	−100	nA
h_{FE}	DC current gain	V_{CE} = −10 V; I_C = −2 mA			
	2PB709Q; 2PB709AQ		160	260	
	2PB709R; 2PB709AR		210	340	
	2PB709S; 2PB709AS		290	460	
f_T	transition frequency	V_{CB} = −10 V; I_E = 1 mA; f = 100 MHz			
	2PB709Q; 2PB709AQ		60	–	MHz
	2PB709R; 2PB709AR		70	–	MHz
	2PB709S; 2PB709AS		80	–	MHz
C_c	collector capacitance	V_{CB} = −10 V; $I_E = i_E$ = 0; f = 1 MHz	–	5	pF

Note

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