

PNP general purpose transistors

2PB710; 2PB710A

FEATURES

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

APPLICATIONS

Intended for general purpose switching or amplification.

DESCRIPTION

PNP transistor in a plastic SC59 package. Complementary pairs are 2PD602 and 2PD602A respectively.

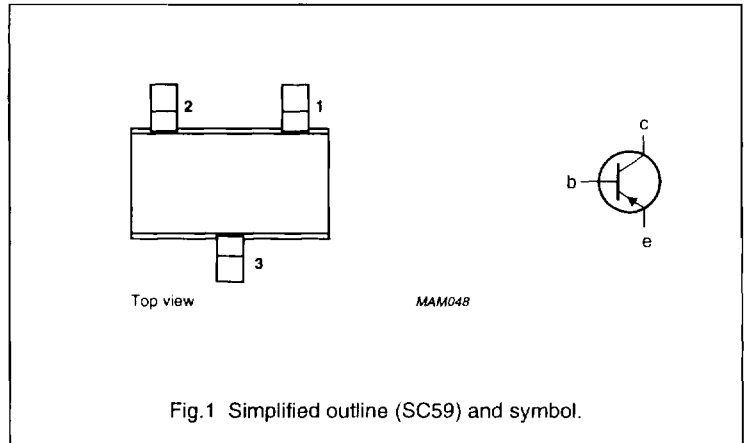


Fig.1 Simplified outline (SC59) and symbol.

MARKING

TYPE NUMBER	MARKING CODE
2PD710Q	CQ
2PD710R	CR
2PD710S	CS
2PD710AQ	DQ
2PD710AR	DR
2PD710AS	DS

PINNING SC59

PIN	DESCRIPTION
1	emitter
2	base
3	collector

QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter			
	2PB710		-	-30	V
	2PB710A		-	-60	V
$V_{CEO}$	collector-emitter voltage	open base			
	2PB710		-	-25	V
	2PB710A		-	-50	V
$I_{CM}$	peak collector current		-	-1	A
$P_{tot}$	total power dissipation	up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	-	250	mW
$h_{FE}$	DC current gain	$I_C = -150\text{ mA}$ ; $V_{CE} = -10\text{ V}$	85	340	
$f_T$	transition frequency	$I_E = 50\text{ mA}$ ; $V_{CB} = -10\text{ V}$			
	2PB710S		140	-	MHz
	2PB710AS		140	-	MHz

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**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter			
	2PB710		–	–30	V
	2PB710A		–	–60	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	2PB710		–	–25	V
	2PB710A		–	–50	V
V <sub>EB0</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–500	mA
I <sub>CM</sub>	peak collector current		–	–1	A
P <sub>tot</sub>	total power dissipation	up to T <sub>amb</sub> = 25 °C; note 1	–	250	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	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.

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**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	collector-base breakdown voltage 2PB710 2PB710A	open emitter; $I_C = -10\text{ }\mu\text{A}$ ; $I_E = 0$	-30	-	V
			-60	-	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage 2PB710 2PB710A	open base; $I_C = -2\text{ mA}$ ; $I_B = 0$ ; note 1	-25	-	V
			-50	-	V
$V_{(BR)EBO}$	emitter-base breakdown voltage	open collector; $I_E = -10\text{ }\mu\text{A}$ ; $I_C = 0$	-5	-	V
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -300\text{ mA}$ ; $I_B = -30\text{ mA}$ ; note 1	-	-600	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -300\text{ mA}$ ; $I_B = -30\text{ mA}$ ; note 1	-	-1.5	V
$I_{CBO}$	collector cut-off current	$V_{CB} = -20\text{ V}$ ; $I_E = 0$	-	-100	nA
		$V_{CB} = -20\text{ V}$ ; $I_E = 0$ ; $T_J = 150\text{ °C}$	-	-5	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$V_{EB} = -4\text{ V}$ ; $I_C = 0$	-	-100	nA
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}$ ; $I_C = -500\text{ mA}$ ; note 1	40	-	
$h_{FE}$	DC current gain 2PB710Q; 2PB710AQ 2PB710R; 2PB710AR 2PB710S; 2PB710AS	$V_{CE} = -10\text{ V}$ ; $I_C = -150\text{ mA}$ ; note 1	85	170	
			120	240	
			170	340	
$f_T$	transition frequency 2PB710Q; 2PB710AQ 2PB710R; 2PB710AR 2PB710S; 2PB710AS	$V_{CB} = -10\text{ V}$ ; $I_E = 50\text{ mA}$ ; $f = 100\text{ MHz}$ ; note 1	100	-	MHz
			120	-	MHz
			140	-	MHz
$C_C$	collector capacitance	$V_{CB} = 10\text{ V}$ ; $I_E = I_C = 0$ ; $f = 1\text{ MHz}$	-	15	pF

**Note**

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