

## SOT-23 Plastic-Encapsulate Transistors

### BCV27,BCV47 NPN Darlington transistors

#### FEATURES

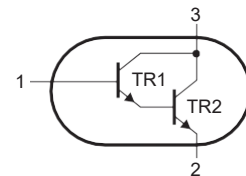
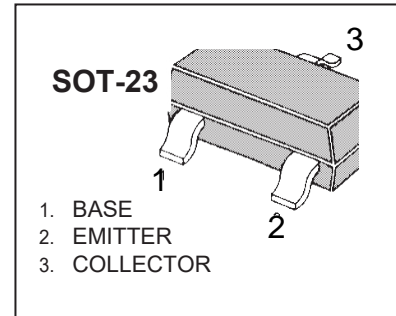
- Medium current (max. 500 mA)
- Low voltage (max. 60 V)
- High DC current gain (min. 20000).

#### APPLICATIONS

- Preampifier input applications.

#### MARKING

TYPE NUMBER	MARKING CODE
BCV27	FF
BCV47	FG



#### LIMITING VALUES

In accordance with the Absolute Maximum Rating System .

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter			
	BCV27		–	40	V
	BCV47		–	80	V
$V_{CES}$	collector-emitter voltage	open base			
	BCV27		–	30	V
	BCV47		–	60	V
$V_{EBO}$	emitter-base voltage	open collector	–	10	V
$I_C$	collector current (DC)		–	500	mA
$I_{CM}$	peak collector current		–	800	mA
$I_B$	base current		–	100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	–	250	mW
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$
$T_{amb}$	operating ambient temperature		–65	+150	$^\circ\text{C}$

#### Note

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

### THERMAL CHARACTERISTICS

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

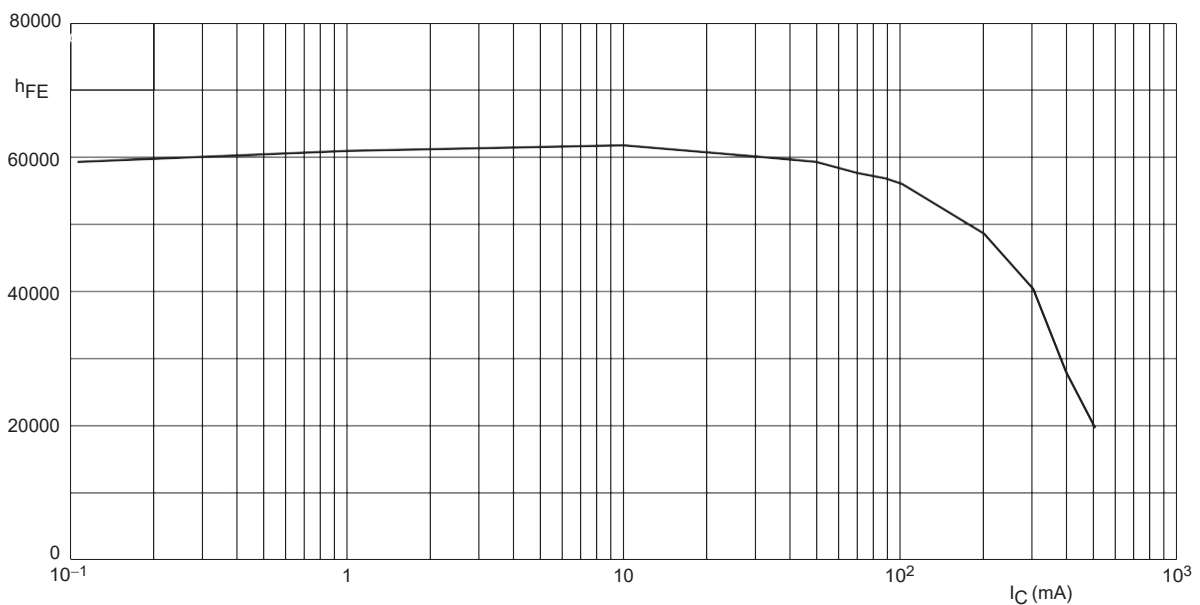
#### Note

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

### CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector cut-off current					
	BCV27	$I_E = 0; V_{CBO} = 30V$	–	–	100	nA
	BCV47	$I_E = 0; V_{CBO} = 60V$	–	–	100	nA
$I_{EBO}$	emitter cut-off current	$I_E = 0; V_{EB} = 10V$	–	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 5V$				
		$I_C = 1mA$	4 000	–	–	
		$I_C = 10mA$	10000	–	–	
		$I_C = 100mA$	20000	–	–	
	DC current gain	$V_{CE} = 5V$				
		$I_C = 1mA$	2 000	–	–	
		$I_C = 10mA$	4 000	–	–	
		$I_C = 100mA$	10000	–	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100mA; I_B = 0.1mA$	–	–	1	V
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 100mA; I_B = 0.1mA$	–	–	1.5	V
$V_{BEon}$	base-emitter on-state voltage	$I_C = 10mA; V_{CE} = 5V$	–	–	1.4	V
$f_T$	transition frequency	$I_C = 30mA; V_{CE} = 5V; f = 100MHz$	–	220	–	MHz



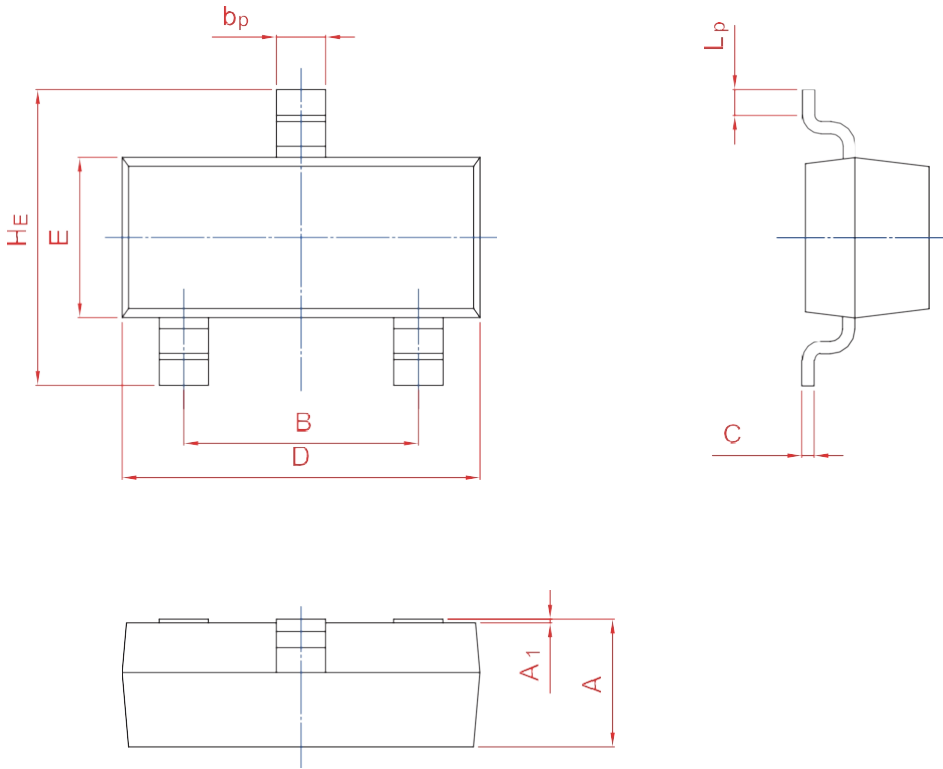
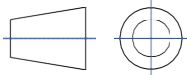
$V_{CE} = 2V$ .

DC current gain; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	HE	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20