

Low Power Bipolar Transistors – Leaded  
(P<sub>tot</sub> to 1.0W) — continued

TO-18, TO-92 Low Noise

Suitable for applications requiring low noise and good h<sub>FE</sub> linearity, eg. audio pre-amplifiers, and instrumentation.

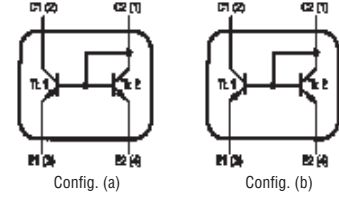
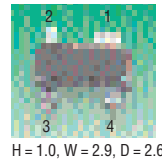
V <sub>CE0</sub> max. V	I <sub>C</sub> max. A	h <sub>FE</sub> min.	f <sub>T</sub> @ I <sub>C</sub> min. MHz	NF max. dB	f <sub>T</sub> min. MHz	P <sub>tot</sub> @ 25°C max. mW	Package and Pin Out	Mfr.	Mfrs. List No.	
20	0.1	200	2.0	4	150	600	TO-18(a)	MC	BC109	—
20	0.1	200	2.0	4	150	600	TO-18(a)	MC	BC109B	—
20	0.1	240	2.0	4	200*	300	TO-18(a)	—	—	BC179
20	0.1	240	2.0	2*	150	300	TO-92(f)	—	—	BC239
20	0.1	420	2.0	4	150	600	TO-18(a)	MC	BC109C	—
25	0.1	125	2.0	10	200*	300	TO-18(a)	—	—	BC178
30	0.1	125	2.0	1.2*	150*	500	TO-92(f)	PS	—	BC559
30	0.1	240	2.0	4	150	300	TO-92(e)	ZET	ZTX109	—
30	0.1	420	2.0	1.4*	300*	500	TO-92(f)	PS/FCH	BC549C	—
30	0.1	450	2.0	4	150	300	TO-92(e)	ZET	ZTX109C	—
30	0.2	140	2.0	10	200	500	TO-92(e)	ZET	—	ZTX214
30	0.2	350	2.0	10	200	500	TO-92(e)	ZET	—	ZTX214C
45	0.1	75	2.0	3	300*	625	TO-92(f)	FCH	—	BC560
45	0.1	200	2.0	3	300*	625	TO-92(f)	FCH	—	BC550
50	0.05	250	0.1	2	40	350	TO-92(b)	FCH	—	2N5087

(\*typ.) FOR PACKAGE AND PIN-OUT DETAILS, SEE PAGE 358

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Order Multiple=5	Price Each				
Mfrs. List No.	Order Code	5+	25+	100+	1K+
BC109	301-0442				
BC109B	301-0454				
BC109C	301-0466				
BC178	356-463				
BC179	356-475				
BC239	356-888				
BC549C (FCH)	434-681				
BC549C (PS)	234-333				
BC550	434-838				
BC559	357-194				
BC560	434-863				
ZTX109	357-900				
ZTX109C	357-923				
ZTX214	357-960				
ZTX214C	357-972				
2N5087	359-014				

Current Mirror, Dual Transistors  
SOT-143

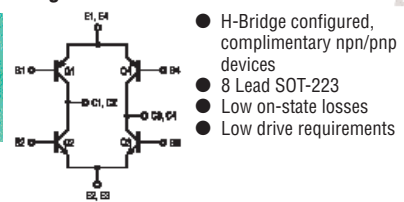
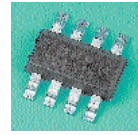


H = 1.0, W = 2.9, D = 2.6

V <sub>CE0</sub> max. V	NPN/PNP	I <sub>C</sub> max. mA	f <sub>T</sub> min. MHz	h <sub>FE</sub> min. @ I <sub>C</sub> mA	V <sub>CE(sat)</sub> @ I <sub>C</sub> mA	P <sub>tot</sub> max. mW	Pin Config.	Mfr.	Mfrs. List No.
30	NPN	100	250	110	2.0	0.60	a	INF	BCV61C
30	PNP	200	100	100	0.1	—	b	PS	BCV62B
30	PNP	100	250	125	2.0	0.65	b	INF	BCV62C

Order Multiple=5	Price Each			
Mfrs. List No.	Order Code	5+	100+	3K+
BCV61C	743-197			
BCV62B	316-2930			
BCV62C	743-203			

SM-8 Quad Packaged Transistors



- H-Bridge configured, complimentary npn/npn devices
- 8 Lead SOT-223
- Low on-state losses
- Low drive requirements

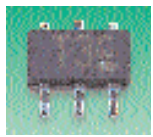
V <sub>CE0</sub> max. V	V <sub>CE0</sub> PNP V	I <sub>cm</sub> (pk) A	I <sub>C</sub> min. A	h <sub>FE</sub> (min) npn	h <sub>FE</sub> (min) pnp	@ I <sub>C</sub> mA	V <sub>CE(sat)</sub> max. (mV) npn	V <sub>CE(sat)</sub> max. (mV) pnp	@ I <sub>C</sub> A	Mfrs. List No.
20	20	6	2.5	300	300	100	150	200	1	ZHB6718
40	50	6	2.0	500	300	100	500	450	1	ZHB6790

Order Multiple=5	Price Each				
Mfrs. List No.	Order Code	1+	25+	100+	1K+
ZHB6718	996-166				
ZHB6790	996-178				

Low Power Transistor Arrays

General Purpose Dual Transistors

Philips Semiconductors



SOT-363

- Low collector capacitance
- Low V<sub>CE(sat)</sub>
- Matched current gain
- Reduced component count
- No mutual interference between transistors
- Supplied on 8mm tape



V <sub>CE0</sub> max. V	V <sub>CE0</sub> PNP max. V	I <sub>C</sub> (pk) max. mA	f <sub>T</sub> min. MHz	h <sub>FE</sub> min. @ I <sub>C</sub> mA	P <sub>tot</sub> per device mW	P <sub>tot</sub> per device mW	Device Marking	Mfrs. List No.
<b>Dual NPN</b>								
40	50	200	100	120	1	200	ZTZ	PUMX1
40	50	200	100	120	1	200	FZ	PUMZ1
45	50	200	100	200	2	200	1Ft	BC847BS
<b>Dual PNP</b>								
40	50	200	100	120	1	200	FtF	PUMT1
45	50	200	100	200	2	200	3Ft	BC857BS
<b>NPN/PNP Complement</b>								
45	50	200	100	200	2	200	13t	BC847BPN

SD255

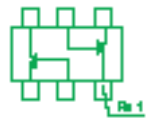
Order Multiple=5	Price Each				
Mfrs. List No.	Order Code	5+	25+	100+	1K+
BC847BPN	305-0476				
BC847BS	305-0488				
BC857BS	305-0518				
PUMT1	316-4895				
PUMX1	316-4950				
PUMZ1	316-4949				

Dual Transistors

Supplied on 8mm tape.



IMD H = 1.1, W = 2.9, D = 2.8



ROHM



Equivalent Devices	NPN/PNP	V <sub>CE0</sub> V	I <sub>C</sub> mA	h <sub>FE</sub> typ	I <sub>C</sub> mA	Device Marking	Mfrs. List No.
2SA1037AK	PNP	40	100	120	1	Z1	IMZ1A

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Order Multiple=5	Price Each			
Mfrs. List No.	Order Code	5+	100+	3K+
IMZ1A	663-098			

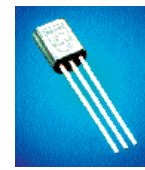
Low Power Digital Transistors

Resistor-Equipped Transistors (RET's)

Philips Semiconductors



SOT-23/SC-59

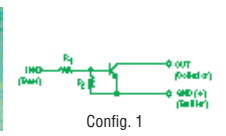
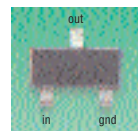


TO-92

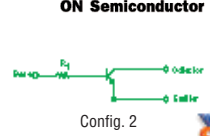
Order Multiple=10	Price Each							
V <sub>CE0</sub> max. V	I <sub>C</sub> max. mA	P <sub>tot</sub> W	Mfrs. List No.	Order Code	10+	100+	250+	1K+
<b>SOT-23, NPN</b>								
50	100	250	PDTC114ET	SMD 316-3015				
50	100	250	PDTC143ET	SMD 316-3027				
50	100	250	PDTC144ET	SMD 316-3039				
<b>SOT-23, PNP</b>								
50	100	250	PDTA114ET	SMD 316-3003				
<b>SC-59, NPN</b>								
50	100	250	PDTC144EK	SMD 316-4937				
<b>SC-59, PNP</b>								
50	100	250	PDTA114EK	SMD 316-4913				
50	100	250	PDTA144EK	SMD 316-4925				
<b>TO-92, NPN</b>								
50	100	500	PDTC124ES	316-4494				

SD470

SOT-23 Digital Transistors



Config. 1



Config. 2

ON Semiconductor



V <sub>(br)CEO</sub> min. V	I <sub>C</sub> max. mA	h <sub>FE</sub> min. @ I <sub>C</sub> mA	I <sub>C</sub> mA	Config.	R1 Ohm	R2 Ohm	Mfrs. List No.
50	100	35	5	1	10K	10K	MMUN2211LT1
50	100	60	5	1	22K	22K	MMUN2212LT1
50	100	80	5	1	47K	47K	MMUN2213LT1
50	100	80	5	1	10K	47K	MMUN2214LT1
50	100	160	5	2	10K	—	MMUN2215LT1
50	100	160	5	2	4.7K	—	MMUN2216LT1

SD422