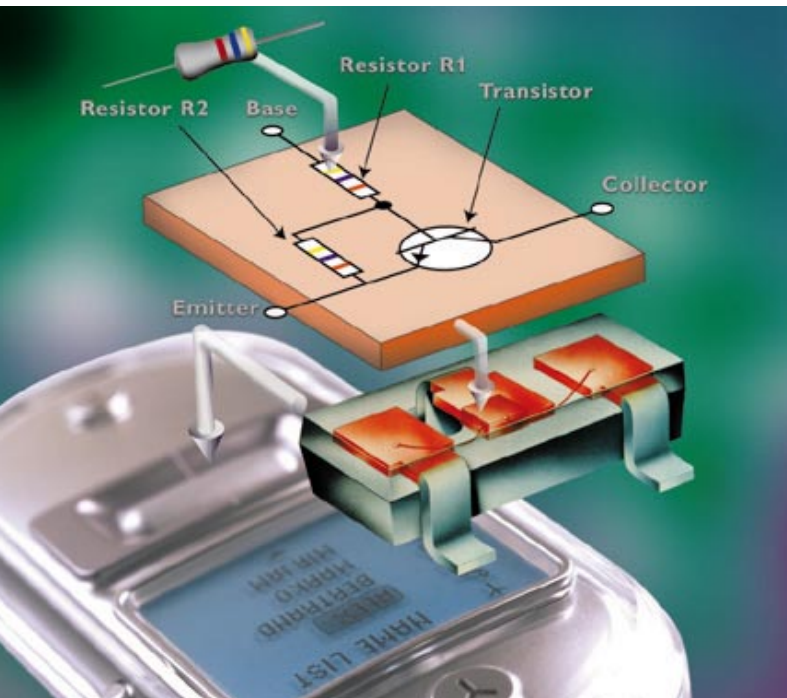


Philips Semiconductors' family of resistor-equipped transistors offers a cost-effective solution for next-generation consumer products. These small-signal devices integrate up to two bias resistors – diffused with the transistor in a single die – to save board space and handling costs. The family is ideal for telecom, audio-video and multimedia applications.



Benefits

- Reduced handling costs — a single device replaces up to three components
- Increased product quality through higher reliability, due to higher integration level
- Reduced inventory and assembly costs
- Reduced board space for smaller and lighter products.

Features

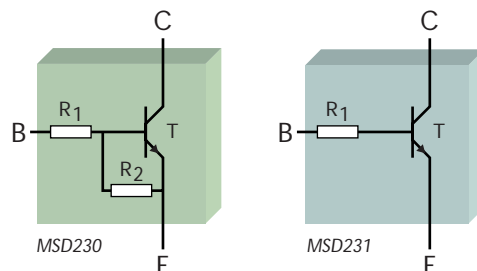
- Broad range of resistor values and resistor combinations available: **now also 100kOhm resistors and new package SOT666 in the portfolio** (see Product Overview table overleaf)
- Conventional and SMD packages available with maximum power dissipation ratings from 150 to 500 mW
- Types available in one of the smallest discrete transistor packages in the world — SC-89 and SC-75
- Ideal for digital applications in many market segments.

Resistor-equipped transistors

Small-signal transistors that reduce handling costs

Description

Building on Philips Semiconductors' reputation for adding value to discrete components, this range of resistor-equipped transistors offers a three-in-one solution for digital applications. Integrating up to two biasing resistors on a small-signal transistor die, these devices are available in both npn and pnp polarities. The bias arrangements for types with two or just one integrated resistor are shown below:



The integrated resistors, combined with state-of-the-art compact packaging, make these transistors ideal for new high-tech products where board space is at a premium.

The full type range is listed in the table overleaf, together with package outline drawings.

Applications

Our resistor-equipped transistors are primarily intended for digital applications such as switching transistors, level translators and driver stages, to name just a few examples. Covering most consumer equipment applications they can, for instance, be used in TV sets and PC motherboards, but they are already being used in high-volumes for products in all other market segments.

Added Value

Philips Semiconductors' comprehensive range of resistor-equipped transistors offers a wide variety of resistor combinations, to ensure maximum flexibility in hardware design. Presently, our product portfolio includes 102 different types, and the range is still growing. Furthermore, types are available in conventional and the latest SMD packages, with maximum power dissipation ratings between 150 and 500 mW. Package types include the SC-89 and SC-75, currently one of the smallest discrete transistor packages in the world.

Double resistor-equipped transistors are also available for applications where board space reduction is a key factor.

Ordering

To order or receive more information, please contact your local Philips Semiconductors Sales Office, or browse our Website for technical data sheets.

Resistor-equipped Transistors Product Overview										
Resistors R1, R2 (kΩ)	Polarity	Single						Double		
		SOT54 (TO92) P _{tot} = 500 mW	SOT23 P _{tot} = 250 mW	SOT346 (SC-59) P _{tot} = 250 mW	SOT323 (SC-70) P _{tot} = 200 mW	SOT416 (SC-75) P _{tot} = 150 mW	SOT490 (SC-89) P _{tot} = 250 mW	SOT457 (SC-74) P _{tot} = 600 mW	SOT363 (SC-88) P _{tot} = 300 mW	SOT666 P _{tot} = 300 mW
2.2, 2.2	pnp npn/pnp npn		PDTA123ET — PDTCT123ET							
4.7, 4.7	pnp npn/pnp npn	PDTA143ES — PDTCT143ES	PDTA143ET — PDTCT143ET	PDTA143EK — PDTCT143EK	PDTA143EU — PDTCT143EU	PDTA143EE — PDTCT143EE				
10, 10	pnp npn/pnp npn	PDTA114ES — PDTCT114ES	PDTA114ET — PDTCT114ET	PDTA114EK — PDTCT114EK	PDTA114EU — PDTCT114EU	PDTA114EE — PDTCT114EE	PDTA114EEF — PDTCT114EEF		PUMB11 PUMD3 PUMH11	PEMB11 PEMD3 PEMH11
22, 22	pnp npn/pnp npn	PDTA124ES — PDTCT124ES	PDTA124ET — PDTCT124ET	PDTA124EK — PDTCT124EK	PDTA124EU — PDTCT124EU	PDTA124EE — PDTCT124EE	PDTA124EEF — —		PUMB2 PUMH1	PEMB2 PEMH1
47, 47	pnp npn/pnp npn	PDTA144ES — PDTCT144ES	PDTA144ET — PDTCT144ET	PDTA144EK — PDTCT144EK	PDTA144EU — PDTCT144EU	PDTA144EE — PDTCT144EE	PDTA144EEF — PDTCT144EEF		PUMB2 PUMD12 PUMH2	PEMB2 PEMD12 PEMH2
100, 100	pnp npn/pnp npn					— — PDTCT115EE				
2.2, 47	pnp npn/pnp npn		PDTA123JT — PDTCT123JT			PDTA123JE — PDTCT123JE	PDTA123JEF — PDTCT123JEF		— PUMD10 PUMH10	— PEMD10 PEMH10
4.7, open	pnp npn/pnp npn		— — PDTCT143TT						PUMB3 PUMD6 PUMH7	PEMB3 PEMD6 PEMH7
4.7, 10	pnp npn/pnp npn		PDTA143XT — PDTCT143XT			PDTA143XE — PDTCT143XE				
4.7, 47	pnp npn/pnp npn		PDTA143ZT — PDTCT143ZT	PDTA143ZK — PDTCT143ZK					— PUMD13 —	— PEMD13 —
10, open	pnp npn/pnp npn	PDTA114TS — PDTCT114TS	PDTA114TT — PDTCT114TT	PDTA114TK — PDTCT114TK	PDTA114TU — PDTCT114TU	PDTA114TE — PDTCT114TE			PUMB4 — PUMH4	PEMB4 — PEMH4
10, 47	pnp npn/pnp npn		PDTA114YT — PDTCT114YT		— — PDTCT114YU	— — PDTCT114YE		PIMH9	PUMD9 PUMH9	— PEMD9 PEMH9
22, 47	pnp npn/pnp npn					PDTA124XE — PDTCT124XE	PDTA124XEF — PDTCT124XEF			
47, 22	pnp npn/pnp npn		— — PDTCT144WT		PDTA144WU — PDTCT144WU					
npn: 47, 47 pnp: 2.2, 47	npn/pnp								PUMD48*	PEMD48*










For all products: V_{CE} = 50 V, I_{Cmax} = 100 mA.
* Complementary type with two different resistor combinations.
Continuous type range expansion offers an ever-increasing choice.

NEW

products are marked in red

For all products: V_{CE0} = 50 V, I_{CMAX} = 100 mA.
 * Complementary type with two different resistor combinations.
 Continuous type range expansion offers an ever-increasing choice.

NEW products are marked in red


SOT54 (TO-92) — 5.1 x 4.6 x 3.9

SOT23 — 2.9 x 1.3 x 1.0

SOT346 (SC-59) — 2.9 x 1.5 x 1.15

SOT323 (SC-70) — 2 x 1.25 x 0.95

SOT416 (SC-75) — 1.6 x 0.8 x 0.75

SOT490 (SC-89) — 1.6 x 0.85 x 0.7

SOT457 (SC-74) — 2.9 x 1.5 x 1.0

SOT363 (SC-88) — 2 x 1.25 x 0.95

SOT666 — 1.6 x 1.6 x 0.55
dimensions in mm: length x width x height

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