

New MultiMarket Products Quarterly highlights

VOLUME 4

ISSUE 3

SEPTEMBER 2005

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Welcome to the latest issue of Philips' New MultiMarket Products – Quarterly highlights.

In addition to discovering some of the key features and benefits of some of our most recent products, you will find a quick reference listing of all our multimarket semiconductors released during the last quarter.

Quarterly focus product

LPC214x

Microcontrollers

Fully-compliant USB 2.0 Full Speed ARM7 microcontroller

The LPC214x devices are the industry's first USB 2.0 Full Speed-compliant 32-bit ARM™-based microcontrollers. This innovative family offers significant space and power savings, perfect for applications where miniaturization is a key requirement. It lets both PC and consumer manufacturers take full advantage of the explosive growth in USB-connected devices predicted for the next few years.

Based on the ARM7TDMI-S™ core, the LPC214x range builds on Philips' extensive experience with ARM microcontrollers to provide a solution that really stands out from the crowd. For full compliance with the USB 2.0 Full Speed standard, the devices incorporate 32 double-buffered endpoints with maximum

packet size support and flexible direct memory access (DMA). This enables higher data transfer rates than previously possible, cutting download times for consumers. In addition, the LPC214x provides Good Link™ LED output and Soft Connect™ programmable resistor functionality for increased manufacturing flexibility.



continued on next page

LPC214x

Further information:
<http://www.standardics.philips.com/news/lpc214x>

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Key features

- USB 2.0 Full-Speed Device capability with full standard compliance, built-in PHY and DMA capability
- 60 MHz zero-wait-state operation from Flash
- Fast I/O capability accelerates software-driven GPIO operations by a factor of 3.5
- Enhanced UART with automatic hardware handshake
- Enhanced 10-bit ADC with individual result registers

Key benefits

- Small size
- Low power consumption
- High level of integration

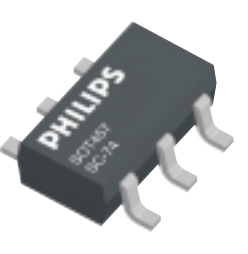
Key applications

- Industrial control
- In-car entertainment
- Medical systems
- Connectivity
- Access control
- Point-of-sales terminals
- General-purpose embedded applications

3rd generation BISS transistors

Further information:
www.semiconductors.philips.com/pip/PBSS301ND
www.semiconductors.philips.com/pip/PBSS301PD

Discretes



Ultra-low V_{CEsat} (BISS) transistors in SOT457 (SC-74)
Our latest BISS transistors feature a much lower saturation voltage than previous low V_{CEsat} transistor generations. The collector current has been increased to 4 A but the package is still SOT23 sized. In addition, products in SOT89 (SC-62), SOT223 (SC-73) and SOT54 (TO-92) will be released later this year.

Key features

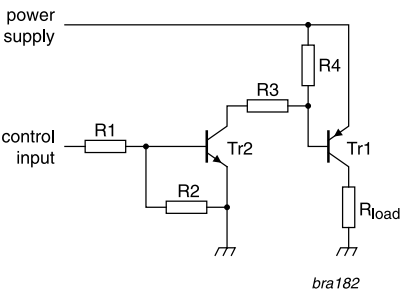
- Ultra-low collector emitter saturation voltage V_{CEsat} e.g. < 300 mV @ 4 A
- 40 % reduction of V_{CEsat} in SOT23 footprint
- 4 A collector current capability I_C
- Up to 15 A peak collector current I_{CM}
- High current gain h_{FE} , even at high I_C

Key benefits

- Improved efficiency
- Lower power consumption
- Cooler running end products
- Smaller end products

Key applications

- High side switches
- Power management functions
- Charging circuits
- DC/DC conversion
- MOSFET gate driving
- Power switches e.g. motors and fans
- TFT backlight inverter applications



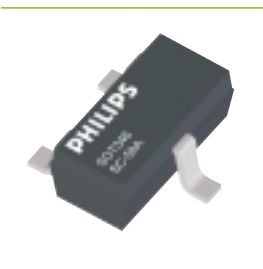
500 mA RETs

Further information:

www.semiconductors.philips.com/pip/PDTB113EK

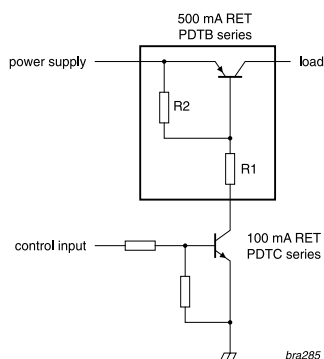
www.semiconductors.philips.com/pip/PDTD113EK

Discretes



Higher-power resistor-equipped transistors

Philips is continually expanding its extensive resistor-equipped transistor (RET) portfolio, and the latest 500 mA devices are the perfect complement to previous 100 mA types. Available in SOT23, SOT346 (SC-59) and SOT54 (TO-92), they are ideal for digital applications in all markets. These new higher-power devices are particularly suited to automotive applications and can be used as loadswitches or to drive LEDs, fans and power MOSFETs.



Key features

- 500 mA collector current capability
- 10% resistor tolerance
- Choice of three packages (SMD and leaded)
- Five different resistor combinations with more available on request

Key benefits

- Reduced component count and pick-and-place costs
- Smaller systems
- Improved reliability

Key applications

- Digital applications in automotive and industrial segments
- Load switching
- Controlling IC inputs
- Lower-cost alternative to BC807 / BC817

BUK7510-55AL and BUK7610-55AL

Further information:

www.semiconductors.philips.com/pip/BUK7510-55AL

www.semiconductors.philips.com/pip/BUK7610-55AL

Power management



N-channel GPA TrenchMOS™ FETs

The new BUK7510-55AL and BUK7610-55AL are ideal for driving electric motors in simple linear mode circuits without expensive Pulse Width Modulation (PWM) strategies. Thanks to a unique chip design using Philips' renowned General Purpose Automotive (GPA) TrenchMOS technology, these 55 V devices deliver stable operation throughout the linear mode with full protection across the Safe Operating Area curve.

Key features

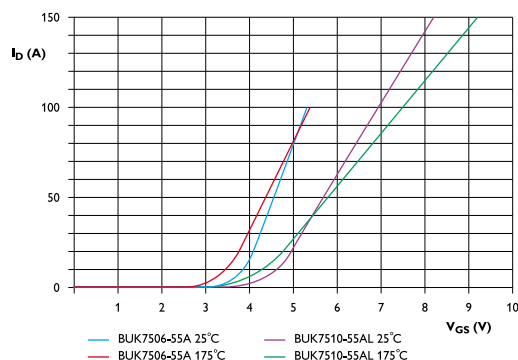
- Automotive-qualified GPA TrenchMOS™ technology
- Rated to 175 °C
- Q101 compliant

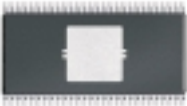
Key benefits

- Stable operation in linear mode
- Easier design-in

Key applications

- Automotive systems
- DC linear motor control
- Repetitive clamped inductive switching
- 12 and 24 V loads





SA56203

Further information:
www.semiconductors.philips.com/pip/SA56203.html

One-chip motor driver IC

The compact and efficient SA56203 motor driver delivers all the performance needed for the highest-speed optical media applications. A highly integrated solution, it reduces component count, system cost and design complexity. In addition, its advanced package construction helps simplify the assembly process and reduce time-to-market.

Key features

- Single-chip solution capable of driving all motors in CD / DVD system
- High efficiency

Key benefits

- Cooler running end products
- Compact, Pb-free package
- Reduced assembly costs
- Maximum design freedom

Key applications

- DVD+RW, DVD-RW and DVD-RAM
- CD-RW
- Other compact disc media



SA58643DP

Further information:
<http://www.standardics.philips.com/products/switchesrf/all/~SA58643/#SA58643>

Wideband RF SPDT switch

The SA58643DP is a wideband RF single pole double throw (SPDT) switch fabricated in BiCMOS technology and incorporating CMOS/TTL-compatible drivers. Its primary function is to switch signals in the frequency range DC - 1 GHz from one 50-Ω channel to another. Highly versatile, the SA58643DP can be used in many applications. It has low current and power consumption, making it ideal for portable and handheld devices such as CT2 cordless phones. It can also be used to generate Amplitude Shift Keying (ASK) or On-Off Keying (OOK) and Frequency Shift Keying (FSK) signals for digital RF communications systems.

Key features

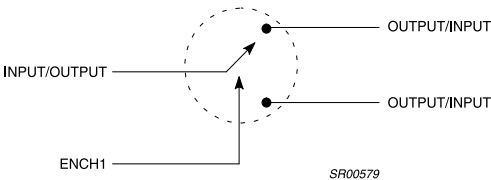
- Low through loss (typically 1 dB at 200 MHz)
- Unused input terminated internally at 50 Ω
- Excellent overload performance (1 dB gain compression point +18 dBm at 300 MHz)
- Fast switching (typically 20 ns)
- Full ESD protection
- Compact TSOP8 package

Key benefits

- Low power consumption
- Ideal replacement for PIN diode

Key applications

- Digital transceiver front-end switch
- Antenna switch
- Filter selection
- Video switch
- FSK transmitter



SC16CxxxB

Further information:

www.semiconductors.philips.com/logic/products/16c/hvqfn

Interface products



UARTs in compact packages

Philips now offers the world's smallest UARTs. Our micro-sized, advanced UARTs are available in a range of ultra-small packages providing dramatic space savings compared to traditional devices. These flexible, lead-free, high-performance and low-voltage products are ideal for space-constrained environments. They are register-compatible with industry standard 16C650, 16C750, 16C652, and 16C752 UARTs. Additionally they are fully compatible with existing code and drivers when used with operating systems such as Microsoft® Windows® (98, NT, 2000, XP, and CE) and Linux.

Key features

- 1-, 2- and 4-channel devices
- Choice of compact packages - HVQFN, shrunk LQFP and BGA
- High data rates (up to 5 Mbps)
- Deep FIFOs (up to 64 bytes)
- Wide operating range (2.5 to 5 V)
- Extended temperature range at commercial pricing
- Short-range wireless capability (IrDA)

Key benefits

- Huge space savings
- High performance
- Low power consumption

Key applications

- Mobile phones and PDAs
- Bluetooth-based applications
- GPS
- Gaming
- Hubs and routers
- Telecomms and networking applications
- Industrial control
- Medical systems

New MultiMarket Products List

Q2 2005

In the following overview you will find all Philips MultiMarket Semiconductors released in the last quarter.
To ensure you can access more information quickly the type numbers are linked directly to their respective Product Information Page (PIP) on the Philips Semiconductors website.

Semiconductors

Discretes

Type Number	Description	Package
2PB1424	20 V, 3 A PNP low V_{CEsat} (BISS) transistor	SOT89 (SC-62)
2PD2150	20 V, 3 A NPN low V_{CEsat} (BISS) transistor	SOT89 (SC-62)
BAS116H	75 V low leakage diode	SOD123F
BAS16H	High-speed switching diode	SOD123F
BAS21H	Single high-voltage switching diode	SOD123F
BAS40H	General purpose Schottky diode	SOD123F
BAS70H	General purpose Schottky diode	SOD123F
BAT54H	Schottky barrier single diode	SOD123F
PBL56001D	60 V PNP BISS loadswitch	SOT457 (SC-74)
PBSS2515E	15 V, 0.5 A NPN low V_{CEsat} (BISS) transistor	SOT416 (SC-75)
PBSS2540E	40 V, 0.5 A NPN low V_{CEsat} (BISS) transistor	SOT416 (SC-75)
PBSS301ND	20 V, 4 A NPN low V_{CEsat} (BISS) transistor	SOT457 (SC-74)
PBSS301PD	20 V, 4 A PNP low V_{CEsat} (BISS) transistor	SOT457 (SC-74)
PBSS302ND	40 V, 4 A NPN low V_{CEsat} (BISS) transistor	SOT457 (SC-74)
PBSS302PD	40 V, 4 A PNP low V_{CEsat} (BISS) transistor	SOT457 (SC-74)
PBSS3515E	15 V, 0.5 A PNP low V_{CEsat} (BISS) transistor	SOT416 (SC-75)
PBSS3540E	40 V, 0.5 A PNP low V_{CEsat} (BISS) transistor	SOT416 (SC-75)
PBSS8110X	100 V, 1 A NPN low V_{CEsat} (BISS) transistor	SOT89 (SC-62)
PBSS9110X	100 V, 1 A PNP low V_{CEsat} (BISS) transistor	SOT89 (SC-62)
PDTA115TE	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT416 (SC-75)
PDTA115TK	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT346 (SC-59)
PDTA115TM	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT883 (SC-101)
PDTA115TT	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT23
PDTA115TS	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT54
PDTA115TU	100 mA, 50 V PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = \text{open}$	SOT323 (SC-70)
PDTA323TK	500 mA, 15 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT346 (SC-59)
PDTB113EK	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT346 (SC-59)
PDTB113ES	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT54
PDTB113ET	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT23
PDTB113ZK	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT346 (SC-59)
PDTB113ZS	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT54
PDTB113ZT	500 mA, 50 V PNP RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT23
PDTB123EK	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT346 (SC-59)
PDTB123ES	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT54
PDTB123ET	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT23
PDTB123TK	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT346 (SC-59)
PDTB123YK	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT346 (SC-59)
PDTB123YS	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT54

Discretes (continued)

Type Number	Description	Package
PDTB123YT	500 mA, 50 V PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT23
PDTC323TK	500 mA, 15 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT346 (SC-59)
PDTD113EK	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT346 (SC-59)
PDTD113ES	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT54
PDTD113ET	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 1 \text{ k}\Omega$	SOT23
PDTD113ZK	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT346 (SC-59)
PDTD113ZS	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT54
PDTD113ZT	500 mA, 50 V NPN RET; $R_1 = 1 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT23
PDTD123EK	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT346 (SC-59)
PDTD123ES	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT54
PDTD123ET	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT23
PDTD123TK	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT346 (SC-59)
PDTD123TS	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT54
PDTD123TT	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = \text{open}$	SOT23
PDTD123YK	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT346 (SC-59)
PDTD123YS	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT54
PDTD123YT	500 mA, 50 V NPN RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 10 \text{ k}\Omega$	SOT23
PEMD20	100 mA, 50 V NPN/PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT666
PEMD24	20 mA, 50 V NPN/PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = 100 \text{ k}\Omega$	SOT666
PESD12VU1UT	Ultra low capacitance ESD protection diode	SOT23
PESD15VU1UT	Ultra low capacitance ESD protection diode	SOT23
PESD24VU1UT	Ultra low capacitance ESD protection diode	SOT23
PESD3V3U1UT	Ultra low capacitance ESD protection diode	SOT23
PESD3V3V4UW	Very low capacitance quadruple ESD protection diode arrays	SOT665
PESD5V0U1UT	Ultra low capacitance ESD protection diode	SOT23
PESD5V0V4UW	Very low capacitance quadruple ESD protection diode arrays	SOT665
PMEG2005EH	20 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD123F
PMEG2005EJ	20 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD323F (SC-90)
PMEG2010AEH	20 V, 1 A very low V_f (MEGA) Schottky barrier rectifier	SOD123F
PMEG3005EH	30 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD123F
PMEG3005EJ	30 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD323F (SC-90)
PMEG3015EV	30 V, 1.5 A ultra low V_f (MEGA) Schottky barrier rectifier	SOT666
PMEG4005EH	40 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD123F
PMEG4005EJ	40 V, 0.5 A very low V_f (MEGA) Schottky barrier rectifier	SOD323F (SC-90)
PMEM4030NS	NPN transistor/Schottky rectifier module	SOT96 (SO8)
PUMD20	100 mA, 50 V NPN/PNP RET; $R_1 = 2.2 \text{ k}\Omega$, $R_2 = 2.2 \text{ k}\Omega$	SOT363 (SC-88)
PUMD24	20 mA, 50 V NPN/PNP RET; $R_1 = 100 \text{ k}\Omega$, $R_2 = 100 \text{ k}\Omega$	SOT363 (SC-88)

Microcontrollers

Type Number	Description	Package
LPC2220	Low-cost 16/32-bit ARM7TDMI-STM Flashless processor with up to 64 Kbytes on-chip RAM	LQFP144

RF

Type Number	Description	Package
TZA3026	SDH/SONET STM4/OC12 transimpedance amplifier	Bare die
TZA3036	SDH/SONET STM1/OC3 transimpedance amplifier	Bare die
TZA3046	Gigabit Ethernet/Fibre Channel transimpedance amplifier	Bare die
BF1207	Dual N-channel dual gate MOSFET	SOT363

Philips Semiconductors

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date of release: August 2005
document order number: 9397 750 14351

Published in the Netherlands

