

Reverse Costing® CATALOGUE

LED

IC

MEMS

IMAGING

PACKAGING

SYSTEM

POWER

REVERSE COSTING®

A complete set of information to understand the technology and cost of the electronic devices on the market. System Plus Consulting Reverse Costing® reports are based on in-house developed methodology and costing tools which ensure their single format. The full collection is regularly updated on our website. These reports can be ordered individually or under our Annual Subscription.

IC & RF

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
RF IC				
SP17327	2017/5 122	Taiyo Yuden	SAW and BAW Band 7 Duplexer	Taiyo Yuden's Well-Proven Metal Seal Packaging and SAW/BAW technology in LTE Band 7 high isolation duplexer used in Skyworks' PAMiD
SP17316	2017/3 295		RF Front-End Modules	Review of RF Front-End modules & components found in flagships smartphones: Apple iPhone 7 Plus, Samsung Galaxy S7, Huawei P9, LG G5, Xiaomi Mi5
SP16283	2016/8 93	Murata FAJ15	SAW filter	The Samsung Galaxy S7 smartphone is the latest one to integrate Murata's front-end module with the FAJ15, featuring Murata's thermo-compensated technology
SP16274	2016/6 112	Avago AFEM9040	FBAR-BAW	Avago has introduced a new generation of film bulk acoustic resonator (FBAR-BAW) technology in the Samsung Galaxy S7
SP16263	2016/3 126	Freescale NXP MR2001	Radar Rx/Tx/VCO Fan-Out RCP Chipset	The new 77 GHz Radar Chipset for ADAS from NXP/Freescale. SiGe:C xHBT technology & Fan-Out RCP Wafer-Level Packaging.
SP16254	2016/3 86	Qorvo TQF6405	SMR BAW High Band Filter	Apple integrates in its smartphone the innovative solid mounted resonators developed by Qorvo
SP15235	2015/10 104	Infineon RRN7745P-RTN7735P	Radar Receiver & Transmitter	New 77GHz Receiver & Transmitter components with a SiGe: CHBT technology from Infineon and eWLB Fan Out Package.
SP15220	2015/6 106	Cavendish Kinetics 32CK417R	MEMS Antenna Tuner	Cavendish Kinetics's extra small (only 2mm2) and very low insertion loss Antenna tuner using MEMS technology.
SP14172	2014/7 85	Paratek TCP-3027	Tunable Capacitor	The first Tunable Capacitor using Paratek technology in WLCSF.
INTEGRATED CIRCUIT				
SP17341	2017/5 76	Adesto RM24C512C	CBRAM memory	Ultra-low power, ultra-fast memory die designed for the Internet-of-Things & Wearables
SP16285	2016/10 60	Texas Instruments Jacinto DRA726	Infotainment IC	Cost-optimized in-vehicle infotainment for entry- to mid-level automobile segments.
SP16270	2016/5 60	Broadcom BCM89501	Ethernet Switch	The BCM89501 uses Broadcom's high-performance BroadR-Reach Ethernet technology to deliver 100Mbps over unshielded single-twisted pair cable.
SP15217	2015/4 53	Mobileye eyeQ3	Mobileye eyeQ3	Automotive Vision-Based SoC.

IMAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
VISIBLE				
SP17334	2017/6 94	NanoLambda NSP32-V1	NanoLambda NSP32-V1 Nano Spectrometer	First plasmonic filter sensor for consumer devices could disrupt optical applications
SP17326	2017/3 113	STMicroelectronics iPhone7	Time of Flight Proximity Sensor	A look inside Single Photon Avalanche Diode (SPAD) Technology from STMicroelectronics entering the High-End Apple Handset
SP17304	2017/3 165	Consumer Physics Scio	Spectrometer	World's first pocket size Molecular sensor that can be integrated into consumer smartphones
SP16293	2016/11 145	Apple iPhone 7 Plus	MEMS Microphone	In the iPhone 7 Plus, Apple introduced a dual rear camera module. The module features two sensors, one with a totally new structure.
SP16278	2016/7 145	Huawei p9	Dual Camera Module	The P9 camera module is equipped with two sub-modules each including a Sony CIS, a closed loop voice coil motor (VCM) and a 6-element lens.
SP16266	2016/5 130	Samsung Galaxy S7 Edge	Rear Camera	The Samsung Galaxy S7 camera module integrates a 12Mpixel resolution CMOS image sensor with a pixel size of 1.4µm and an aperture of f/1.7.
SP15239	2015/12 209	Camera Module Industry 2015	Camera Module Review	19 Camera Modules from the main OEM analyzed and compared !

INFRARED				
SP17337	2017/7 79	Texas Instrument	Time of Flight Image Sensor	A look into Texas Instruments' system-on-chip, including Sony/Softkinetic's time-of-flight pixel technology, for industrial applications
SP17336	2017/7 80	Melexis MLX75023	ToF imager	A cutting-edge ToF imager technology from Sony/Softkinetic, adapted by Melexis for automotive in-cabin applications
SP17330	2017/6 203	Autoliv ISC0901	Night Vision Automotive Camera	Autoliv's 3rd Generation Automotive Night Vision Camera with FLIR's ISC0901 Microbolometer
SP17305	2017/1 170	Lenovo	3D Time of Flight (ToF) Camera	World's first 3D tri-camera bundle including Infineon/pmd REAL3TM ToF image sensor integrated into a consumer smartphone
SP16264	2016/8 170	i3system Thermal Expert	IR camera and microbolometer	Based on a high definition microbolometer from I3system (I3BOL384_17A), the Thermal Expert infrared camera is a high-end product for smartphones.
SP16244	2016/2 260	FLiR One 2G & Lepton 3	Infrared Camera & IR sensor	Second Generation FLIR ONE for Android and iOS Platforms Featuring a Completely New LEPTON Core with 160x120 Pixels Resolution and 12µm Pixel Size
SP15246	2015/12 137	Fujitsu Arrows NX F-04G	IR Camera Module & IR LED	World's first iris recognition module for smartphones!
SP15221	2015/7 166	Opgal Therm-App	Infrared Camera	The highest resolution thermal camera for smartphone, 384x 288 pixels, using a microbolometer with 17 µm pixel from Ullis, compatible with Android 4.1 and up.
SP15201	2015/1 166	Seek Thermal - Raytheon EXC001	Seek Thermal Infrared Camera & Raytheon IR Microbolometer	The highest resolution thermal camera for smartphone, 156 x 206 pixels, using a microbolometer with 12 µm pixel from Raytheon, compatible with Android and IOS

LED

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
WHITE/BLUE LED				
SP17317	2017/3 70	Samsung LM101A	Chip Scale Package LED	The first Samsung Chip Scale Package LED is developed according to technical choices to reduce the manufacturing cost.
SP15224	2015/6 107	Toshiba TL1L4	GaN on Silicon LED	Third generation GaN on Silicon LED by Toshiba: new architecture without top electrode to increase the light extraction and a ceramic package with sintering.
UV LED				
SP16273	2016/6 170	SETi UVTOP270TO39HS	UV LED	The UVTOP270TO39HS and SS35DF227513 are two 275nm UVC LEDs from Sensor Electronic Technology Inc. (SETI).
SP16272	2016/6 115	Crystal IS OPTAN280K-BL	UV LED	The OPTAN280K-BL and OPTAN-265N-SMD are two UVC LEDs, of 280nm and 265nm respectively, from Crystal IS.

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
LED LAMP				
SP14162	2014/7 99	OSRAM OSTAR Headlamp	LED Array	High performance Vertical Thin Film with Vias (VTFV) dies in a new and more efficient packaging for harsh environment.

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
PRESSURE SENSOR				
SP17308	2017/2 104	Infineon DPS310	Capacitive Pressure Sensor	Tiny MEMS digital barometer for smartphones and wearables
SP16295	2016/11 128	STMicroelectronics LPS22HB	Nano Pressure Sensor	The new pressure sensor from ST, is compared with the 1st-generation STMicroelectronics LPS331AP pressure sensor and the Bosch Sensortec BMP280
SP16279	2016/9 96	Melexis MLX91802	TPMS	The Melexis MLX91802 is an absolute pressure sensor used in tire pressure monitoring systems (TPMS) for cars and trucks.
SP16255	2016/3 77	Melexis MLX90809	Relative Pressure Sensor	Second generation integrated pressure sensor for harsh environments.
SP15203	2015/1 150	Freescale FXT87	TPMS	The TPMS solution featuring the smallest footprint and lowest RF power consumption.
SP14154	2014/2 126	Infineon SP37	TPMS	Infineon Technologies is one of the leaders on the TPMS market. The SP37 Tire Pressure Monitoring Sensor is Highly Integrated & Reliable .

OSCILLATOR				
SP15214	2015/7 97	SiTime SiT1552	MEMS Oscillator	The smallest MEMS oscillator on the market assembled in an innovative Wafer Level Chip Size Package.

MICROPHONE				
SP17314	2017/2 109	Vesper VM1000	Piezoelectric Microphone	Disruptive first Piezoelectric MEMS microphone for consumer applications.
SP16296	2016/10 106	Goertek iPhone7 Microphone	MEMS Microphone iPhone 7	Goertek MEMS Microphone (Infineon solution) in Apple iPhone 7 Plus
SP16294	2016/10 106	STMicroelectronics iPhone7 Microphone	MEMS Microphone iPhone 7	STMicroelectronics MEMS Microphone in Apple iPhone 7 Plus
SP16292	2016/10 113	Knowles iPhone7 Microphone	MEMS Microphone iPhone 7	Knowles MEMS Microphone in Apple iPhone 7 Plus
SP14189	2014/10 107	InvenSense ICS43432	Digital MEMS Microphone	The high sensitivity last come of InvenSense digital MEMS Microphones portfolio with capacitive technology and I2Sprotocol interface.
SP14184	2014/8 240	Wolfson WM7121 & WM7132	Top & Bottom Port Microphones	Set of 2 reports highlighting MEMS and Packaging technologies of Wolfson Microphones.

LIGHT				
SP16268	2016/5 112	Maxim MAX30102	Pulse Oximeter Heart-Rate Sensor	The sensor is an optical heart-rate module and a pulse oximeter sensor in a LED reflective solution. The main die includes a photodiode area and an analysis part, with an integrated ambient light cancellation system.
SP16237	2016/1 70	ams TSV TSL2584TSV	Ambient Light Sensor (ALS)	World's Smallest Ambient Light Sensor for Wearable Applications.
SP14182	2014/7 69	Capella CM3512	UV Sensor	The best spectral UVA/UVB sensitivity IC from Capella Microsystems with Filtron™ technology and I2C protocol interface.

IMU/COMBO				
SP16297	2016/12 155	STMicroelectronics LSM6DSM	6-axis IMU dedicated to OIS	Complete reports and comparison of the latest generation of inertial measurement units for consumer optical image stabilization applications

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP16291	2016/12 136	InvenSense iPhone 7 Plus	IMU dedicated to OIS	Complete reports and comparison of the latest generation of inertial measurement units for consumer optical image stabilization applications
SP16261	2016/4 246	BOSCH Sensortec BMF055	9-axis IMU	The BMF055 is a new version of the BOSCH Sensortec 9-axis device (3-axis Gyroscope + 3-axis Accelerometer + 3-axis Magnetometer), with a MCU included in the package.
SP16260	2016/4 153	InvenSense ICM-30630	6-axis IMU	World's first tri-core 6-axis motion tracking solution with integrated sensor-hub framework software.
SP15241	2015/11 160	Murata SCC2000 Series	Automotive MEMS Combo	Murata's Second Generation Combo Sensor (1-axis gyro and 3-axes accelero) for Automotive & Harsh Environments
SP15240	2015/11 130	Silicon Sensing CMS300	Automotive MEMS Combo	Silicon Sensing Combo Sensor (1-axis gyro and 2-axes accelero) for Automotive & Harsh Environments.
SP15230	2015/9 140	Fairchild FIS1100	6-Axis MEMS IMU	Fairchild's first consumer IMU manufactured using a completely new bulk micro machining process and interconnection structure.
SP15218	2015/6 140	STMicroelectronics LSM6DS3	MEMS IMU	ST's extra small (only 6mm3) and sub-mA IMU named 2014 MEMS device of the year 50% footprint reduction, many process & design innovation.
SP15215	2015/3 175	Bosch SMI130	6-axis Combo	Bosch's first 6-Axis IMU for Automotive Application Combines 3-Axis Gyroscope and 3-Axis Accelerometer
SP15210	2015/3 177	Bosch Sensortec BMI160	Bosch Sensortec	New 6-Axis Inertial unit from Bosch, with a very low power consumption accelerometer and a footprint of only 3x2.5mm ² .
SP15204	2015/2 109	InvenSense MP67B	InvenSense MP67B	The InvenSense's first design win in Apple iPhone and second generation 6-Axis Devices for Consumer Applications.
SP14179	2014/9 136	Maxim MAX21100	6-Axis	The first MEMS IMU (3-Axis Gyro + 3-Axis Accelero on the same die) from Maxim Integrated in industry smallest and thinnest 3x3x0.83mm package.

GYROSCOPE

SP16299	2016/11 87	Invensense IDG-2030	Gyroscope fo OIS	2-axis thin gyroscope for camera OIS
SP16298	2016/11 105	STMicroelectronics L2G2IS	Gyroscope fo OIS	2-axis thin gyroscope for camera OIS
SP14187	2014/10 119	STMicroelectronics A3G4250D	3-Axis	The first 3-Axis MEMS Gyroscope to meet Automotive AEC-Q100 qualification.
SP14176	2014/9 81	Analog Devices ADIS16136	Precision Angular Rate Senso	Tactical grade gyro module with in-run bias stability of 4°/hour.
SP14173	2014/6 135	Maxim MAX21000	3-Axis	The first MEMS Gyroscope from Maxim Integrated in industry smallest 3x3mm package.
SP14152	2014/3 160	Sensoror STIM210	3-Axis Gyroscope	World highest performance silicon MEMS gyro available without export control.Tactical grade with bias instability of 0.5°/h in a miniature 33cm3 package.

FINGERPRINT

SP17318	2017/4 115	Fingerprint Cards FPC1228	Capacitive under glass fingerprint sensor	Huawei P10 and Mate 9 pro capacitive fingerprint successfully integrated under glass in collaboration with TPK
SP16282	2016/8 130	Qualcomm Sense™ ID 3D	Ultrasonic Fingerprint	Powered by an ultrasonic-based fingerprint biometric solution, the sensor provides a more secure, reliable alternative to capacitive-based fingerprint sensors.
SP16271	2016/5 105	Next Biometrics NB-1010-U	Fingerprint Sensor	The sensor die is manufactured on glass with LTPS technology and uses a very specific coating to ensure the device's functionality.
SP16248	2016/2 89	EgisTec ET300	Fingerprint Sensor	Philips integrates in its smartphone the innovative fingerprint sensor developed by EgisTec
SP15247	2015/12 109	Google Nexus 6P	Fingerprint Sensor	In Google's Nexus 6P, Huawei integrates again an innovative fingerprint sensor developed by fingerprint Cards, referenced FPC1025.
SP15243	2015/11 118	Apple iPhone 6s Plus	Fingerprint Sensor	For the iPhone 6s Plus, Apple proposes a new fingerprint with the same detection principle but new design, new front-end process and new back-end packaging.

MEMS & SENSOR

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP15219	2015/5 104	Samsung Galaxy S6	Fingerprint Sensor	Second generation Synaptics fingerprint sensor: same capacitive technology but totally different design.
SP15212	2015/4 83	Huawei Fingerprint FPC1020	Fingerprint Sensor	Fingerprint Cards integrates in Huawei's Ascend Mate 7 the first smartphone fingerprint sensor based on capacitive sensing technology.

ENVIRONMENT

SP17342	2017/7 152	Bosch BME680	Bosch BME680 Environnement Sensor (Gas+Humidity+Pressure)	The world's first environmental sensor combining gas, pressure, humidity and temperature sensing functions in a 3mm x 3mm footprint package
SP16223	2016/2 99	Humidity Sensors Industry 2015	Relative Humidity Sensors Technology and Cost Review	Humidity Sensors from the main players analyzed and compared!
SP15236	2015/10 86	mbridge CMOS Senses CCS801	MEMS Gas Sensor	First gas sensor with ultra low power consumption developed for the portable handheld devices.
SP15225	2015/7 77	AMS AS-MLV-P2	Gas Sensor	The AV-MLV-P2 is a volatile organic compounds gas sensor which can detect alcohols, aldehydes, ketones, organic acids, amines, aliphatic and aromatic hydrocarbons.
SP15209	2015/4 121	STMicroelectronics HTS221	Humidity and temperature sensor	High performances humidity sensor based on STMicroelectronics capacitive digital sensor in a tiny compact package.
SP15205	2015/2 119	Bosch Sensortec BME280	Pressure and humidity sensor	High performances pressure and humidity sensor based on Bosch APSM process and innovative resistive measurement technology in a single compact package.
SP13130	2013/7 85	Sensirion SHTC1	Humidity and temperature sensor	Sensirion SHTC1 humidity and temperature-sensing device is manufactured using a proprietary MEMS technology, called "CMOSens®".

DISPLAY/OPTICS

SP15229	2015/9 143	Intel RealSense	3D camera	Innovative 3D camera for facial analysis and hand/finger tracking, based on resonant micro-mirror, IR laser, visible and near infrared image sensors.
---------	---------------	---------------------------	-----------	---

COMPASS

SP15222	2015/10 160	eCompass Review	3-Axis & 6-Axis	Over 20 eCompasses from the main players analyzed and compared !
---------	----------------	------------------------	-----------------	--

ACCELEROMETER

SP17315	2017/3 130	mCube MC3672	WLCSP MEMS Accelerometer	Ultra-low power - Highly integrated WLCSP Accelerometer with Via-Middle TSV
SP17269	2017/1 110	Safran Colibrys VS1000	High End Accelerometer	Single-Axis High Performance Accelerometer with new ASIC design
SP16256	2016/4 114	mCube MC3635	3-axis Accelerometer	Ultra-low power 3D TSV MEMS Single-Chip 3-axis Accelerometer
SP16074	2016/7 97	Bosch Sensortec BMA250E	3-Axis Accelerometer-Consumer	The BM250E is a low power digital accelerometer packaged in a tiny 2x2x0.9mm ³ LGA package.
SP15207	2015/4 110	mCube MC3413	3-Axis Accelerometer	The First Monolithic 3D MEMS Single-Chip Accelerometer in 1mm ² .

PACKAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
WLP				
SP16267	2016/4 93	Qualcomm WCD9335	FOWLP	The Qualcomm WDC9335 is an audio codec wafer-level packaged with fan-out technology. It is used in Samsung Galaxy S7.
SIP				
SP16277	2016/7 130	Intel Curie	SiP Module	This tiny system-in-package (SiP) includes the Intel Quark chip, Bluetooth radio, sensors, and battery charging in less than 150mm ³ .

PACKAGING

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
EMBEDDED				
SP17306	2017/6 90	TDK PAN-T2541 bluetooth	TDK SESUB-PAN-T2541 bluetooth module	TDK SESUB-PAN-D14580 Module: world's smallest Bluetooth 4.1 low energy (LE)
SP15233	2015/10 68	GaN Systems AT&S ECP®	GaNpx Top Cooled	Latest GS66508T power transistor of GaN Systems packaged with a top - side cooling.
SP15202	2015/1 117	AT&S GS66508P	GaN HEMT	The new AT&S Embedded Component Package (ECP) for high voltage and power transistor.
3D PACKAGING				
SP17339	2017/6 133	NXP SCM-i.MX6	Quad High Density Fan-Out Wafer-Level System-in-Package	NXP SCM-i.MX6 Quad High Density Fan-Out Wafer-Level System-in-Package
SP16303	2016/12 100		Application Processors Comparison	Comparison of main players AP: Apple A10 with inFO vs. Qualcomm Snapdragon 820 with MCEP packaging technology vs. HiSilicon Kirin 955 & Samsung Exynos8 with standard PoP
SP16300	2016/10 100	TSMC Silicon Capacitor	Deep Trench Capacitor	Deep analysis and Reverse Costing of the new silicon capacitor technology from TSMC used for the latest Apple's Application processor, the A10 found in the iPhone 7
SP16290	2016/10 100	TSMC inFO	Package-on-Package	Deep Analysis and reverse costing of the new inFO packaging technology from TSMC used for the latest Apple's Application processor, the A10 found in the iPhone 7
SP16276	2016/6 113	Qualcomm Snapdragon 820	Package-on-Package	The Galaxy S7 integrates the Exynos 8 with classic PoP packaging or the Snapdragon 820, with Molded Core Embedded Package (MCEP) technology, developed by Shinko.
SP15231	2015/9 100	AMD Radeon R9 Fury X	AMD Radeon R9 Fury X	World's First HBM-Powered products.
SP15226	2015/7 100	Samsung M393A8G40D40	DRAM with TSV	The DDR4 memory chips are manufactured using Samsung's 20nm process technology and 3D TSV via-middle package technology.

POWER

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SiC				
SP17310	2017/4 65	Rohm SCT2H12NZGC11	1700V SiC MOSFET	In its new series of SiC MOSFETs, Rohm uses trench structures for 650V and 1200V products, while 1700V products use planar structures
SP17309	2017/1 66	STMicroelectronics STC30N120	1200V SiC MOSFET	The 1st generation 1200V SiC MOSFET device from STMicroelectronics has good current density at a very competitive cost
SP16275	2016/7 94	Rohm BSM180D12P3C007	SiC MOSFET	The BSM180D12P3C007 is a 1200V 180A SiC MOSFET module from Rohm for high power applications. The trench structure reduces on-resistance and switching losses.
SP16262	2016/8 81	Wolfspeed C3M	900V SiC MOSFET	The SiC C3M™ Platform is the first 900V SiC MOSFET platform, designed by Wolfspeed for high-power applications like DC/DC converters, and telecom power supplies.
SP15213	2015/3 139	Cree CAS300M17BM2	CREE 1700V SiC Module	A specific SiC epitaxy with a dual layers structure for a very low Rdson of 8mΩ.
SP15206	2015/2 136	Cree CAS120M12BM2	CREE 1200V SiC Module	The 2nd Generation SiCMOSFET with Z-Rec Diode SiC.
MOSFET				
SP16289	2016/11 171	Miscellaneous	40V Silicon MOSFET	Technology and Cost Review of 40V Si MOSFET
IGBT				
SP17332	2017/6 87	Infineon FS820R08A6P2B	750V IGBT Module	The HybridPACK™ Drive is a very compact power module optimized for hybrid and electric vehicle. The FS820R08A6P2B (820 A/750 V) is a six-pack module optimized for 150 kW inverters using the new EDT2 IGBT.
SP16288	2016/12 195	Miscellaneous	IGBT vs SiC MOSFET comparison	1200V SiCMOSFET vs Silicon IGBT: Technology and cost comparison

POWER

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP16281	2016/9 80	Infineon CooliR ²	IGBT module	The CooliR ² Die™ power module from Infineon is an IGBT module for automotive applications integrated into different vehicles' Traction Power Inverter Module (TPIM).
SP15232	2015/9 110	Semikron SKiM306GD12E4	Solderless module	SKIM 63, solderless, sinter technology power module developed for high reliability operation in a light module.
GaN				
SP17331	2017/7	Texas Instruments LMG3410	600V GaN-on-Silicon HEMT	The LMG3410 Single-Channel Gallium-Nitride (GaN) Power Stage contains a 70-mΩ, 600-V GaN power transistor and specialized driver in an 8-mm by 8-mm QFN package.
SP17322	2017/5 72	Panasonic PGA26E19BA	600V GaN-on-Silicon HEMT	Panasonic abandons the TO220 package for its GaN HEMTs and proposes the DFN 8x8 package for the latest 600V device.
SP17319	2017/5 98	Transphorm TPH3208PS	Transphorm TPH3208PS 650V GaN HEMT	A new 650V GaN HEMT from Transphorm with a simplified cascode structure and enhanced electrical characteristics.
SP17311	2017/2 78	Panasonic PGA26C09	600V GaN-on-SiliconHEMT	The first 600V GaN HEMT of Panasonic is designed with an innovative structure to integrate a normally Off transistor in a standard package without cascode.
SP16302	2016/11 120	Transphorm TPH3206PS	GaN-on-Silicon HEMT	Transphorm's TPH3206PS transistor has a new die design and manufacturing process. The die contacts are optimized on the die area to save space, and increase current density.
SP16286	2016/10 66	Wolfspeed CGHV40100	GaN-on-Silicon HEMT	General-purpose, unmatched 50V GaN HEMTs from Wolfspeed specifically designed to solve long-standing issues for radar systems employing traditional TWT amplifiers.
SP16257	2016/4 86	EPC EPC2040	GaN FET	Efficient Power Conversion EPC2040 15V eGaN FET for LiDAR Systems
SP16250	2016/3 210	Miscellaneous	GaN on Si HEMT vs SJ MOSFET	Will SJ MOSFETs still be attractive compared to GaN devices?
SP15202	2015/1 117	GaN Systems GS66508P	GaN HEMT	The first 650V GaN on Silicon HEMT transistor on the market from GaN Systems.

SYSTEM

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
ENERGY				
SP17307	2017/1 81	Enphase S280	Solar microinverter	Best in class SmartGrid-ready 280VA inverter with new generation ASIC-based topology for lighter design and enhanced solar power management
SP16253	2016/3 94	SMA Sunny Island 6.0H	Off-grid and on-grid PV Inverter	The Sunny Island 6.0H supports a wide range of on-grid and off-grid applications from operation in remote off-grid areas to home energy management
SP15227	2015/7 102	SMA SB1.5-1VL40	Solar inverter	Easy to install, to connect and to monitor, the Sunny Boy 1.5 is the SMA Solar newly developed inverter for residential PV systems.
SP15211	2015/2 77	Tigo MM-2ES 50	Solar optimizer	Production, management and safety of a photovoltaic installation improvement Low cost peak efficiency up to 99.5%.
CONSUMER				
SP17325	2017/3 132	Oculus Rift	Virtual Reality Head-Mounted Display	Detailed analysis of Oculus's HMD for VR experience
SP17280	2017/2 131	HTC Vive	VR Head-Mounted Display	HTC Vive Virtual Reality Head-Mounted Display
SP16249	2016/2 73	Avogy olt Laptop Charger Plc	Laptop charger	A SiC Transistor inside the smallest and most performant Laptop Charger currently available.
AUTOMOTIVE				
SP17340	2017/6 35	LG .G LA080WV3 – 8-inch	Display with Touch Panel for Car Navigation	LG LA080WV3 – 8-inch Display with Touch Panel for Car Navigation
SP17329	2017/4 80	Continental MFC430	Forward Automotive Camera	Continental attempts to penetrate the forward camera market with a distinctive architecture and cost effective solution

SYSTEM

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
SP17324	2017/4 62	Bosch MPC2	Forward Automotive Camera	Bosch attempts to penetrate the forward camera market with a distinctive architecture and cost effective solution
SP17323	2017/4 77	TRW S-Cam3	Forward Automotive Camera	Third and latest version of TRW's best-selling S-Cam series forward camera
SP17321	2017/3 85	Continental ARS4A	77GHz Radar	Simultaneous long and short range 77GH7 radar
SP17320	2017/4 192	Leddartech LeddarVU	solid state high-definition LiDAR module	Leddartech new lidar: without moving part, smallest form factor on the market and integrating the latest solid state technology, the LeddarVU8 is ready to compete with radars.
SP17313	2017/4 88	Bosch LRR4	77GHz Long Range Radar Sensor	The fourth generation of Bosch long range radar sensor set new boundaries for a more elegant, compactness and cost effectiveness module
SP17312	2017/1 80	Autoliv MRR	77GHz Multi Mode Radar	A compact, cost-effective (combining Long and Middle Range detection) and high-performance driving assistance system
SP16287	2016/9 135	Toyota Prius 4	Power control Unit	The Prius 4 module integrates Toyota's latest power card packaging, with double side cooling.
SP16284	2016/9 82	Delphi RSDS	76Ghz radar	Delphi's Rear and Side Detection System (RSDS) utilizes 76Ghz single-beam mono-pulse radar. Its compact design enables simplified vehicle integration.
SP16251	2016/1 104	Delphi RACam	Radar and Camera System	A compact, cost-effective and high-performance Advanced Driving Assistance System (ADAS).
SP15234	2015/10 80	Bosch Mid Range Radar Sensc	MRR Sensor	A compact, cost-effective and high-performance driving assistance system at 77GHz.

TECHNOLOGY & PATENT

Ref.	Date Pages	Manufacturer Product	Type of Product	Overview
PATENT INFRINGEMENT				
SK15003	2015/11 120		Capacitive Fingerprint Sensors	Technology & Patent Infringement Risk Analysis.
SK15002	2015/4 172		MEMS Microphones	Technology & Patent Infringement Risk Analysis.
SK14001	2014/9 80		9-axis IMUs	Technology and Patent Infringement Risk Analysis.

Headquarters 21 rue La Noue Bras de Fer 44200 Nantes, FRANCE T : +33 2 40 18 09 16 sales@systemplus.fr	Europe Sales Office Lizzie LEVENEZ Frankfurt am Main GERMANY T : +49 151 23 54 41 82 llevenez@systemplus.fr	America Sales Office Steve LAFERRIERE Phoenix, AZ USA T : +1 480 922 7164 laferriere@yole.fr	Asia Sales Office Takashi ONOZAWA Tokyo JAPAN T : +81 3 4405 9204 onozawa@yole.fr	Greater China Office Mavis WANG Taipei TAIWAN T : +886 979 336 809 wang@yole.fr
---	--	---	--	--