

# Integrated Starter Generator - NEW

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# Integrated Starter Generator - NEW

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## Application Overview

Car manufacturers are working to reduce fuel consumption and emissions as the limits are decreased by the authorities. Therefore the integration of 48V Boardnet is the next step to optimize the efficiency of cars. The "Integrated Starter Generator" (ISG) replaces the starter motor and alternator. Installed between the engine and gearbox the ISG supplies power to save fuel as the engine has not to work on its own. Vishay offers you a broad portfolio of solutions like packaged or bare die MOSFETs, Diodes, Resistors, Capacitors and Inductors.

## Integrated Starter Generator - NEW : Control Unit, Circuit Protection

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### Resistor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">D/CRCW-IF e3</a>		Pulse Proof Thick Film Resistors	1Ω to 100KΩ ; 5 to 10% ; 200 ppm	0402 ... 2512	

### Zener diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">BZX84C-HE3</a>		Small Signal Zener Diode	2,4 to 75V ; 2 to 5 mA ; 300 mW	SOT-23	
<a href="#">MMSZ52xx-HE3</a>		Small Signal Zener Diode	3,3 to 75V ; 1,7 to 20 mA ; 500 mW	SOD-123	

## Integrated Starter Generator - NEW : Control Unit, EMI-Filter

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### MLCC

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">VJ...31X RoHs</a> <a href="#">Automotive MLCC</a>		Surface Mount Multilayer Ceramic Chip Capacitors fo Auto for Automotive Applications	COG, X7R, X8R;1pF to 1µF;16 to 3kV	0402 ... 1812	

## Integrated Starter Generator - NEW : Control Unit, Sensor System

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### NTC

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">NTCS0603E3...T</a>		Glass Protected NTC Thermistors	2Ω to 100KΩ ; 1 to 5% ; 3420 to 4100 K	0603	

### Resistor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">MCx-AT</a>		Precision Thin Film Chip Resistor	47Ω to 1MΩ; 0,1% ; 10 to 25 ppm/°C	0402 ... 1206	
<a href="#">PATxxx</a>		Precision Automotive Thin Film Chip Resistor Tantalum Nitrite Resistor Film	1Ω to 1MΩ; 0,1% to 1% ; 25 to 100 ppm/°C	0402 ... 2512	

## Integrated Starter Generator - NEW : Control Unit, SMPS Buck Converter

### Diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">BAS16-HE3</a>		Small Signal Fast Switching Diode	If=150mA; Vf=1,25V ; Vrrm=75V	SOT-23	

### Inductor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">IHLP2525 1A</a>		Low Profile, High Current Shielded Inductor	1 to 22 $\mu$ H ; 2,9 to 12,5A ;8 to 135 m $\Omega$	2525	
<a href="#">IHLP2525 5A</a>		Low Profile, High Current Shielded Inductor, 155°C	0,47 to 22 $\mu$ H ; 2,8 to 20A ;4 to 174 m $\Omega$	2525	
<a href="#">IHLP4040 5A</a>		Low Profile, High Current Shielded Inductor, 155°C	0,47 to 47 $\mu$ H ; 2,5 to 30A ;1,55 to 178 m $\Omega$	4040	

### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQJ402EP</a>		Automotive N-channel 100V (D-S) 175°C MOSFET	Rdson = 11 m $\Omega$ ; ID = 32A	PowerPAK SO-8L single	

### Schottky diode

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SS1H10HE3</a>		High Current Density Surface Mount Schottky Rectifier	If=1A; Vf=0,62V; Vrrm=100V	DO241AC (SMA)	
<a href="#">SSA34HE3</a>		High Current Density Surface Mount Schottky Rectifier	If=3A; Vf=0,42V; Vrrm=40V	DO241AC (SMA)	
<a href="#">VSSA210HM3</a>	NEW	High Current Density Surface Mount Schottky Rectifier	If=2A; Vf=0,56V; Vrrm=40V	DO241AC (SMA)	

# Integrated Starter Generator - NEW : DC-Link, DC-Link

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## DC-Link Capacitor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">MKT1820</a>		DC Film Capacitor, MKT Radial Potted Type	100pF to 560µF; 5 to 20% ; 63 to 1000VDC	Radial	

## Integrated Starter Generator - NEW : DC-Link, Filter

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### Inductor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">Custom Magnetics</a>		High Current, High Temperature radial Inductors		Radial	
<a href="#">IHLP8585-8787MZ-5A</a>		Low Profile, High Current Shielded Inductor, 155°C	0,47 to 100µH ; 9 to 80A ;0,67 to 39,4 mΩ	8787	



# Integrated Starter Generator - NEW : Inverter, Driver

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## Resistor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">IGBR</a>	NEW	Thin Film, High Power Back-Contact Resistor	3Ω to 25Ω ; 5 to 25% ; 500 ppm/°C ; 75V	0202 to 0808	





## Integrated Starter Generator - NEW : Inverter, Full bridge

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### MOSFET

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">SQC...KGD</a>		Automotive N-channel 80 to 100V (D-S) 175°C MOSFET	Rdson<1 mΩ; VDS =80 to 100V ;Id = 500 to 800 A	Bare die	

## Integrated Starter Generator - NEW : Inverter, Temperature Sensor

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NTC

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">NTCC.00E4</a>	NEW	Leadless NTC Thermistor Die Suitable For Wire Bounding	4,7 $\Omega$ to 20K $\Omega$ ; 1 to 5% ; 3435 to 3865 K	2 mm x 2 mm	

## Integrated Starter Generator - NEW : Sensor, Current sensor

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### Shunt Resistor

Product Name	Status	Description	Features	Package	Q-Level
<a href="#">WSLP3921</a>		Power Metal Strip Shunt Resistor, Very High Power, Very Low Value, smd	0,2 $\Omega$ to 4 m $\Omega$ ; Up to 10W 1 and 5% ; Down to 75 ppm/ $^{\circ}$ C	3921, 5931	
<a href="#">WSMS2908</a>		Power Metal Strip Meter Shunt Resistor, Very Low Value	50 $\mu\Omega$ to 1000 $\mu\Omega$ 3W ; 5% ; Down to 175 ppm/ $^{\circ}$ C	2908	