

Silicon Germanium (SiGe) rectifiers

Cutting-edge high efficiency, thermal stability and space-savings

Nexperia's SiGe rectifiers combine the high efficiency of Schottky rectifiers with the thermal stability of fast recovery diodes. Targeting automotive, server markets and communications infrastructure, the AEC-Q101 compliant rectifiers are of particular benefit in high-temperature applications. These extremely low leakage devices allow an extended safe-operating area with no thermal runaway up to 175 °C. And, at the same time, offer significant room to optimize your design towards higher efficiency.

Product features

- › V_R of 120 V, 150 V, 200 V; I_F of 1, 2, 3 A
- › Low forward voltage and low Q_{rr}
- › Extremely low leakage current of $< 1\text{ nA}$
- › Thermal stability up to 175 °C T_j
- › Fast and smooth switching
- › Low parasitic capacitance and inductance
- › AEC-Q101 qualified
- › Space-saving, rugged CFP packaging

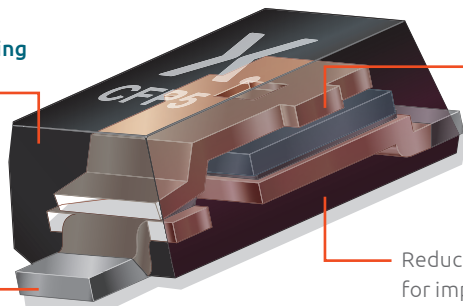
Applications

- › Automotive
 - › LED Lighting
 - › Engine control units
- › Communications infrastructure
- › Server Power

Advanced clip-bonded FlatPower (CFP) packaging

Reduced package resistance for better electrical performance

Easy pin to pin replacement with Schottky and fast recovery rectifiers in market standard CFP package



Solid copper clip for high thermal performance and power dissipation

Reduced package inductance for improved switching behavior and less parasitics in the circuit

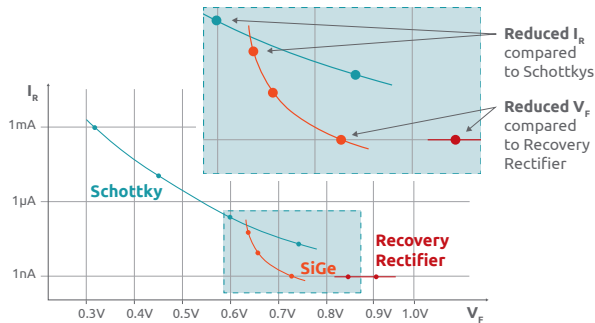
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EFFICIENCY WINS.

SiGe rectifiers benefits

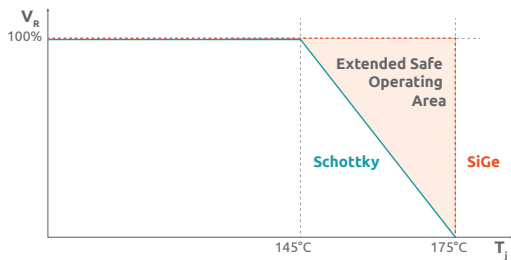
Excellent efficiency

- Reduced reverse current (I_R) compared to Schottkys
- Lower forward voltage (V_F) compared to fast recovery rectifiers for low power losses

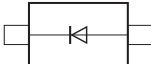


Extended safe operating area

- Safe operation at high temperatures
- Stable operation at maximum reverse voltage



SiGe rectifiers in clip-bond packages

					Automotive-qualified	
V_R max (V)	I_F max (A)	V_F max (mV) @ I_F max	I_R max (μA) @ V_F max	Package	CFP5 (SOD128)	CFP3 (SOD123W)
						
				Size (mm)	3.8 x 2.5 x 1.0	2.6 x 1.7 x 1.0
				P_{tot} (mW) @ 1 cm²	1200	1150
120	1	840	0.03	 <i>bra036</i>		PMEG120G10ELR
	2				PMEG120G20ELP	PMEG120G20ELR
	3				PMEG120G30ELP	
150	1	850	0.03			PMEG150G10ELR
	2				PMEG150G20ELP	PMEG150G20ELR
	3				PMEG150G30ELP	
200	1	880	0.03			PMEG200G10ELR
	2				PMEG200G20ELP	PMEG200G20ELR
	3				PMEG200G30ELP	

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