

# 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.

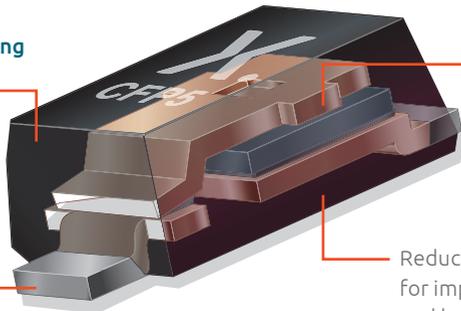
### Product features

- ›  $V_R$  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  $< 1$  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

### 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

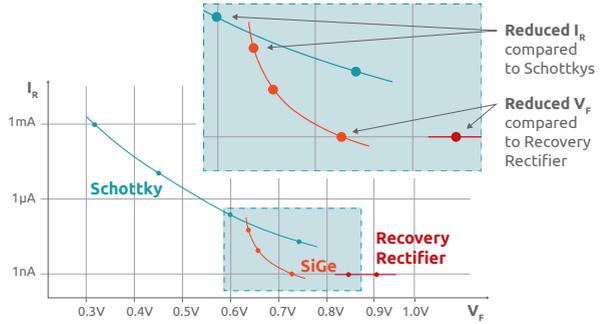
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EFFICIENCY WINS.

## SiGe rectifiers benefits

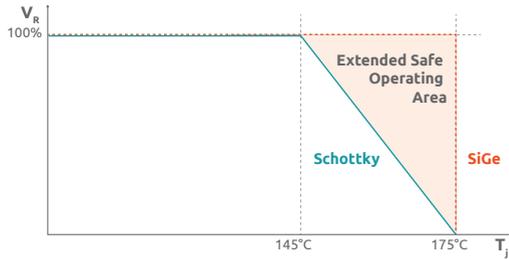
### Excellent efficiency

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

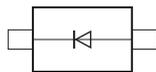


### Extended safe operating area

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



## SiGe rectifiers in clip-bond packages

$V_R$ max (V)	$I_F$ max (A)	$V_F$ max (mV) @ $I_F$ max	$I_R$ max ( $\mu$ A) @ $V$ max	Package	Automotive-qualified		
					CFP5 (SOD128)	CFP3 (SOD123W)	
							
					Size (mm)		
					1200	1150	
120	1	840	0.03				
	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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