

FRED Pt® Gen 5 Hyper- and Ultrafast Rectifiers in SOT-227

# 600 V and 1200 V Devices Reduce Conduction and Switching Losses, Increase Efficiency



## ADVANTAGE

Rectifiers designed to increase the efficiency of high frequency converters of soft-switched or resonant designs

## KEY PRODUCT FEATURES

- ✓ High current capability:
  - 30 A at 600 V in the single-phase bridge configuration
  - 60 A to 300 A at 600 V and 1200 V in the dual-diode configuration
- ✓ High temperature operation to +175 °C
- ✓ Matched to operate with MOSFETs or high speed IGBTs
- ✓ H-type devices offer the advantage of lower conduction losses and X-type devices feature faster recovery times



## MARKETS AND APPLICATIONS



### CONNECTIVITY

- Telecom fixed infrastructure



### MOBILITY

- Micromobility
- Transportation
- Agricultural equipment



### ENERGY SECTOR

- Generation and exploration
- Distribution and management
- Storage



### INDUSTRIAL

- Drives and tools
- Infrastructure



### MEDICAL

- Instrumentation, monitoring, therapeutics

## RESOURCES



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The DNA of tech.

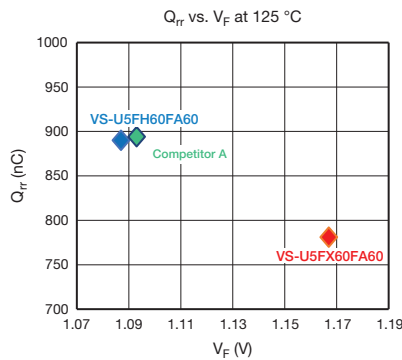
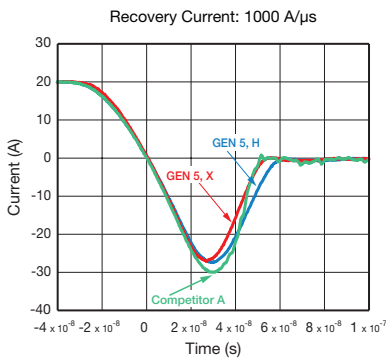
# FRED Pt® Gen 5 Hyper- and Ultrafast Rectifiers in SOT-227

## Device Specification Table:

Series	Part Number	Circuit Configuration	$V_{RRM}$ (V)	$I_{F(AV)}$ (A) at $T_C$ per Diode	$V_F$ typ. <sup>(1)</sup> (V)	$t_{rr}$ typ. <sup>(1)</sup> (ns)
H	<a href="#">VS-U5FH30BA60</a>	Single phase bridge	600	30 at 105 °C	1.6	63
	<a href="#">VS-U5FH60FA60</a>	Two separate diodes, parallel pin-out		30 at 132 °C	1.37	61
	<a href="#">VS-U5FH120FA60</a>	Two separate diodes, parallel pin-out		60 at 115 °C	1.36	67
	<a href="#">VS-U5FH150FA60</a>	Two separate diodes, parallel pin-out		75 at 117 °C	1.34	70
	<a href="#">VS-U5FH300FA60</a>	Two separate diodes, parallel pin-out		150 at 98 °C	1.36	76
X	<a href="#">VS-U5FX60FA60</a>	Two separate diodes, parallel pin-out	600	30 at 128 °C	1.6	57
	<a href="#">VS-U5FX120FA60</a>	Two separate diodes, parallel pin-out		60 at 100 °C	1.6	63
	<a href="#">VS-U5FX150FA60</a>	Two separate diodes, parallel pin-out		75 at 102 °C	1.6	65
	<a href="#">VS-U5FX300FA60</a>	Two separate diodes, parallel pin-out		150 at 80 °C	1.6	72
H	<a href="#">VS-U5FH60FA120</a>	Two separate diodes, parallel pin-out	1200	30 at 105 °C	2.08	54
	<a href="#">VS-U5FH120EA120</a>	Two separate diodes, antiparallel pin-out		60 at 85 °C	1.99	71
	<a href="#">VS-U5FH120FA120</a>	Two separate diodes, parallel pin-out		60 at 85 °C	1.99	71
	<a href="#">VS-U5FH240FA120</a>	Two separate diodes, parallel pin-out		120 at 75 °C	1.99	98
X	<a href="#">VS-U5FX60FA120</a>	Two separate diodes, parallel pin-out	1200	30 at 85 °C	2.91	41
	<a href="#">VS-U5FX120EA120</a>	Two separate diodes, antiparallel pin-out		60 at 70 °C	2.65	46
	<a href="#">VS-U5FX120FA120</a>	Two separate diodes, parallel pin-out		60 at 70 °C	2.65	46
	<a href="#">VS-U5FX240FA120</a>	Two separate diodes, parallel pin-out		120 at 59 °C	2.8	60

NOTE: <sup>(1)</sup> At datasheet conditions,  $T_J = 25\text{ °C}$

## Reverse Recovery Current



## Waveforms Comparison

