

# NEW

# Z-Rec™ 600 V, Silicon Carbide Schottky Diode

Cree's Z-Rec™ 600 V SiC Schottky diodes combine fast switching speeds, low switching losses and high surge current capabilities with the industry's best performance to cost ratio.



## FEATURES\*

- Lowest overall power loss
  - » Lower junction capacitance for reduced switching loss
  - » No compromise in conduction loss
- Highest surge current capability
  - » Enhanced non-repetitive surge current capability
  - » Optimized repetitive surge capability for best cost performance

Parameters	Cree C3D10060A	Competitor -I SiC Diode	Competitor -II SiC Diode
Average Forward Current $I_f$	10.0 A @ 150 °C <sub>Tc</sub>	10.0 A @ 130 °C <sub>Tc</sub>	10.0 A @ 115 °C <sub>Tc</sub>
$V_{f\_max}$ @ $I_f = 10$ A	1.8 V	2.1 V	1.7 V
Non-repetitive Surge $I_{FSM}$ @ 25 °C <sub>Tc</sub>	90.0 A	51.0 A	40.0 A
Repetitive Surge $I_{FRM}$ @ 110 °C <sub>Tc</sub>	44.0 A	N/A	40.0 A

\* Lowest overall power loss and highest surge current capability were determined by comparison to all 600 V SiC Schottky diodes commercially available as of June 26, 2009. All other features described are as compared to Cree's first generation devices.



**Key Specifications: 600 V blocking voltage, 1.8 V<sub>MAX</sub> forward voltage, 10 μA typical reverse current**

Z-Rec™ Schottkys	Available Packages	I <sub>f</sub> (A) @ 150 °C <sub>Tc</sub>	Target P <sub>o</sub> (W)	I <sub>FRM</sub> (A) @ 110 °C <sub>Tc</sub>	I <sub>FSM</sub> (A) @ 25 °C <sub>Tc</sub>	Availability
C3D02060	T0-220-2,	2.0	200 - 300	9.0	20.0	Now
C3D03060	T0-220-2 Full Pak,	3.0	300 - 450	15.0	28.0	August 2009
C3D04060	D-PAK	4.0	400 - 600	16.0	31.0	Now
C3D06060		6.0	600 - 900	27.0	70.0	Now
C3D08060	T0-220-2, D <sup>2</sup> PAK	8.0	800 - 1200	36.0	80.0	Now
C3D10060		10.0	1000 - 1500	44.0	90.0	Now
C3D20060	T0-247-3	20.0	1500 - 3000	88.0	180.0	Now

**Package Code:**



**A: TO-220-2**



**D: TO-247-3**



**E: TO-252-2  
D-PAK**

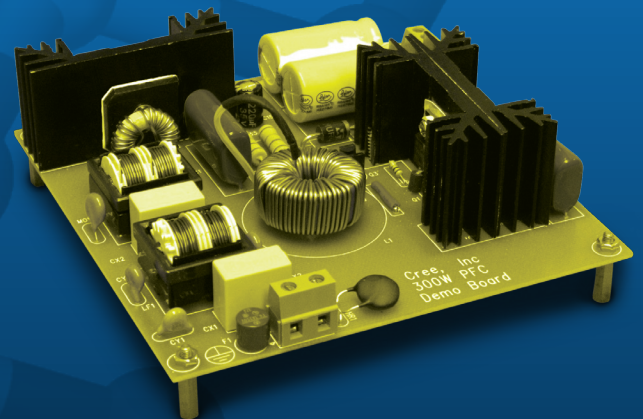


**F: TO-220-2  
FullPak**



**G: TO-263-2  
D<sup>2</sup>PAK**

- Go to [www.cree.com/power](http://www.cree.com/power) for more information
  - » Datasheets
  - » Application notes
  - » Reliability and qualification information
- Demo board design available upon request
  - » 300-500 W capable
  - » Optimized for best cost and performance



RoHS, REACH, and Halogen-Free compliant

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