

## Key Features

- Excellent body diode performance ( $V_f < 2V$ )
- Drive with any Si and/ or SiC gate drive voltage
- Superior thermal performance
- Integrated ESD and gate protection

## End Applications

- EV/Battery Charger
- Telecom & Server PSU
- Solar inverter
- Energy storage
- Motor drive



## Cascode Selector Guide

Voltage	PN	Description	Samples	Prod	Package
<b>General Purpose</b>					
1200V	UJ3C120150K3S	1200V 150mΩ SiC Cascode	May-18	Q3 18	TO247-3L
	UJ3C120080K3S	1200V 80mΩ SiC Cascode	Now	Now	TO247-3L
	UJ3C120040K3S	1200V 40mΩ SiC Cascode	Now	Now	TO247-3L
650V	UJ3C065080K3S	650V 80mΩ SiC Cascode	Now	Now	TO247-3L
	UJ3C065030K3S	650V 30mΩ SiC Cascode	Now	Now	TO247-3L
	UJ3C065080T3S	650V 80mΩ SiC Cascode	Now	Now	TO220-3L
	UJ3C065030T3S	650V 30mΩ SiC Cascode	Now	Now	TO220-3L
	UJ3C065080B3S	650V 80mΩ SiC Cascode	Now	Q2 18	D2PAK-3L
	UJ3C065030B3S	650V 30mΩ SiC Cascode	Now	Q2 18	D2PAK-3L
	<b>Hard switched</b>				
650V	UF3C065040K3S	650V 40mΩ SiC Cascode Fast	May-18	Q2 18	TO247-3L
	UF3C065040T3S	650V 40mΩ SiC Cascode Fast	May-18	Q2 18	TO220-3L
	UF3C065040K4S	650V 40mΩ SiC Cascode Fast	May-18	Q3 18	TO247-4L
	UF3C065030K4S	650V 30mΩ SiC Cascode Fast	Now	Q3 18	TO247-4L
	UF3C065080K4S	650V 80mΩ SiC Cascode Fast	Now	Q3 18	TO247-4L
1200V	UF3C120150K4S	1200V 150mΩ SiC Cascode Fast	May-18	Q3 18	TO247-4L
	UF3C120080K4S	1200V 80mΩ SiC Cascode Fast	Now	Q3 18	TO247-4L
	UF3C120040K4S	1200V 40mΩ SiC Cascode Fast	Now	Q3 18	TO247-4L

## Drop-in Replacement

- Replaces IGBTs, SiC MOSFETs or Si Superjunction devices
- Same gate drive voltages

Technology	USCi Cascode Replacement
Si MOSFET or Si Superjunction	UJC 650V Series
IGBT with FRD	UJC 1200V Series
SiC MOSFET with SiC SBD	UJC 1200V Series

## Cascode Competitive Comparison

Spec	SiC Cascode UJC06505K	SiC MOSFET Competitor A	E-mode GaN Competitor B	Si Superjunction Competitor C
<b>R<sub>DSA</sub> mohm-cm<sup>2</sup></b>	0.75	3.5	6.6	10
<b>R<sub>ds</sub>*E<sub>oss</sub> mohm-uJ</b>	255	600	350	462
<b>V<sub>th</sub> (V)</b>	5	4.5	1.3	3.5
<b>Avalanche</b>	Yes	Yes	No	Yes
<b>Gate voltage rating (V)</b>	+/-25	+22/-4	+/-10	+/-20
<b>Diode behavior</b>	Excellent	Excellent	Excellent	Poor

## UJ3D Series – 650/1200 V SiC Diodes Selector Guide

Voltage	PN	Description	Samples	Prod	Die	T0-220- 2L	TO247- 3L	D2PAK- Flat (F5)	SOT227	
650V	UJ3D06504	4A 650V JBS Diode	NOW	MP	MP	MP	MP	D	D	
	UJ3D06506	6A 650V JBS Diode								
	UJ3D06508	8A 650V JBS Diode								
	UJ3D06510	10A 650V JBS Diode			MP					
	UJ3D06512	12A 650V JBS Diode								
	UJ3D06516	16A 650V JBS Diode			MP					
	UJ3D06530	30A 650V JBS diode								
	UJ3D06560	2X 30A 650V JBS diode			MP					
	UJ3D065200	200A 650V JBS diode			D					ES
1200V	UJ3D1202	2A 1200V JBS diode	NOW	MP	MP	MP	MP	D	D	
	UJ3D1205	5A 1200V JBS diode								
	UJ3D1210	10A 1200V JBS diode								
	UJ3D1220	2X 10A 1200V JBS diode								MP
	UJ3D1250	50A 1200V JBS diode								
	UJ3D12100	100A 1200V JBS diode								D

D=Development ES=Engineering Sample MP=Mass Production

Richardson Electronics has been an industry-leader in providing high-quality products and outstanding engineering support for nearly 70 years. Our extensive global distribution network and world-class partners provide our customers with innovative technologies, products and services.

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