



## Product Selector Guide

SiC FETs, SiC JFETs, and SiC Schottky Diodes

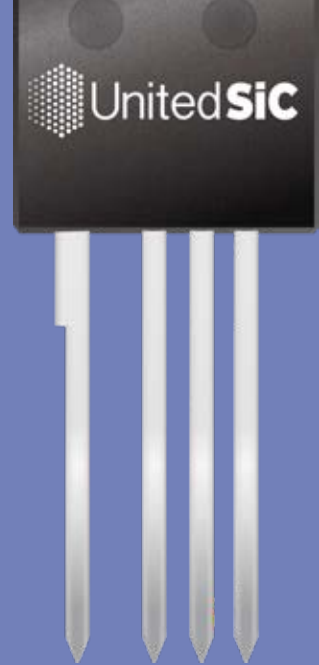


Get faster  
switching speeds,  
lower switching  
losses, and better  
power conversion  
efficiency.

The new UnitedSiC UF3C series  
of FAST 650V and 1200V SiC  
FETs deliver:

- Easy drop-in replacement for IGBTs,  
Si and other SiC MOSFETs
- Lowest  $R_{DS(on)}$  in TO-220  
(27mohm)
- Excellent reverse recovery
- New TO-247-4L and D2PAK-7L  
Kelvin packages





## UJ3C & UF3C Series, 650/1200V SiC FETs

### Key Features

- Excellent body diode performance ( $V_f < 2V$ )
- Drive with any Si and/or SiC gate drive voltage
- High performance cascode configuration
- Superior thermal performance
- Integrated ESD and gate protection
- Kelvin packages (UF3C Fast series)

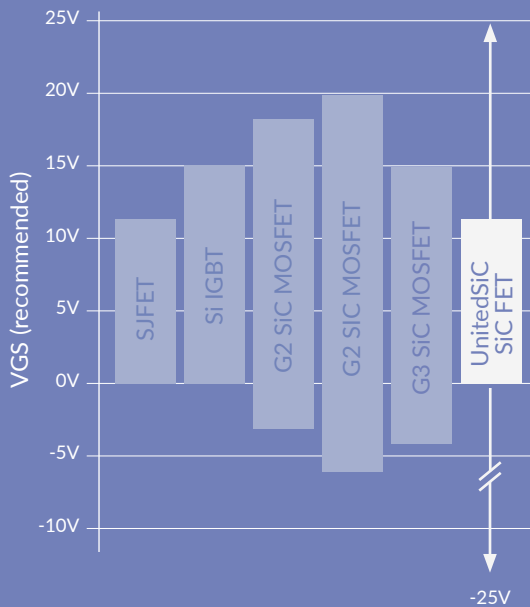
### End Applications

- Electric Vehicles
- Battery Chargers
- Telecom & Server PSU
- Solar inverters
- Energy storage
- Motor drives

## Drop-in Functionality Without Changing Gate Drive Voltage

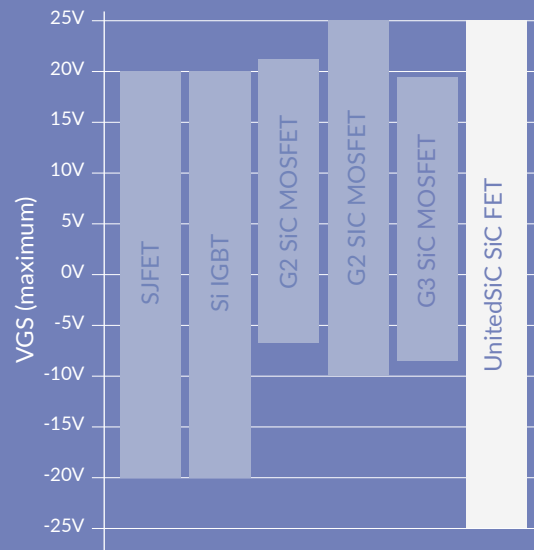
(Replaces Si IGBTs, Si FETs, SiC MOSFETs or Si Superjunction Devices)

### 12V/0V Operation Simplifies Upgrading



Innovative cascode configuration enables Si and SiC gate voltage compatibility

### Superior Gate and ESD Protection



Integrated clamping diode protects gates from  $|25V|$  and adds ESD protection

## SiC FETs

### UJ3C Series Selector Guide | General Purpose

Voltage	Part Number	Description	Id Max (A) at 25°C	Samples	Prod.	Package
1200V	UJ3C120150K3S	1200V 150mΩ SiC Cascode	18.4	Now	Now	TO-247-3L
	UJ3C120080K3S	1200V 80mΩ SiC Cascode	33.0	Now	Now	TO-247-3L
	UJ3C120040K3S	1200V 35mΩ SiC Cascode	65.0	Now	Now	TO-247-3L
650V	UJ3C065080K3S	650V 80mΩ SiC Cascode	31.0	Now	Now	TO-247-3L
	UJ3C065030K3S	650V 30mΩ SiC Cascode	85.0	Now	Now	TO-247-3L
	UJ3C065080T3S	650V 80mΩ SiC Cascode	31.0	Now	Now	TO-220-3L
	UJ3C065030T3S	650V 27mΩ SiC Cascode	85.0	Now	Now	TO-220-3L
	UJ3C065080B3	650V 80mΩ SiC Cascode	25.0	Now	Now	D2PAK-3L
	UJ3C065030B3	650V 27mΩ SiC Cascode	66.0	Now	Now	D2PAK-3L

### UF3C Fast Series Selector Guide | Hard Switched

Voltage	Part Number	Description	Id Max (A) at 25°C	Samples	Prod.	Pkg.
1200V	UF3C120150K4S	1200V 150mΩ SiC Cascode Fast	18.4	Now	Now	TO-247-4L
	UF3C120080K4S	1200V 80mΩ SiC Cascode Fast	33.0	Now	Now	TO-247-4L
	UF3C120080K3S	1200V 80mΩ SiC Cascode Fast	33.0	Now	Q2 19	TO-247-3L
	UF3C120040K4S	1200V 35mΩ SiC Cascode Fast	65.0	Now	Now	TO-247-4L
	UF3C120040K3S	1200V 35mΩ SiC Cascode Fast	65.0	Now	Now	TO-247-3L
	UF3C120150B7S	1200V 150mΩ SiC Cascode Fast	18.4	Now	Q4 19	D2PAK-7L
	UF3C120080B7S	1200V 80mΩ SiC Cascode Fast	33.0	Now	Q4 19	D2PAK-7L
	UF3SC120040B7S	1200V 40mΩ SiC Stack Cascode Fast	65.0	Now	Q4 19	D2PAK-7L
650V	UF3C065080K4S	650V 80mΩ SiC Cascode Fast	31.0	Now	Now	TO-247-4L
	UF3C065040K4S	650V 42mΩ SiC Cascode Fast	54.0	Now	Now	TO-247-4L
	UF3C065030K4S	650V 30mΩ SiC Cascode Fast	85.0	Now	Now	TO-247-4L
	UF3C065040K3S	650V 42mΩ SiC Cascode Fast	54.0	Now	Now	TO-247-3L
	UF3C065030K3S	650V 30mΩ SiC Cascode Fast	85.0	Now	Now	TO-247-3L
	UF3C065040T3S	650V 42mΩ SiC Cascode Fast	54.0	Now	Now	TO-220-3L
	UF3C065030T3S	650V 27mΩ SiC Cascode Fast	85.0	Q2 19	Q2 19	TO-220-3L
	UF3C065080B7S	650V 80mΩ SiC Cascode Fast	31.0	Now	Q4 19	D2PAK-7L
	UF3SC065040B7S	650V 40mΩ SiC Stack Cascode Fast	54.0	Now	Q4 19	D2PAK-7L
	UF3SC065030B7S	650V 30mΩ SiC Stack Cascode Fast	85.0	Now	Q4 19	D2PAK-7L
	UF3C065080B3	650V 80mΩ SiC Cascode Fast	25.0	Q2 19	Q3 19	D2PAK-3L
	UF3C065040B3	650V 42mΩ SiC Cascode Fast	41.0	Now	Now	D2PAK-3L
UF3C065030B3	650V 27mΩ SiC Cascode Fast	65.0	Now	Now	D2PAK-3L	

## SiC FETs

### RDS(on) and Package Type

						
Voltage	RDS(on) mΩ typical	TO-247-3L	TO-247-4L	D2PAK-3L	TO-220-3L	D2PAK-7L
650V	20-29	UJ3C065030K3S UF3C065030K3S (1)	UF3C065030K4S	UJ3C065030B3 UF3C065030B3(1)	UJ3C065030T3S UF3C065030T3S	UF3SC065030B7S
	30-39					
	40-49	UF3C065040K3S	UF3C065040K4S	UF3C065040B3	UF3C065040T3S	UF3SC065040B7S
	50-99	UJ3C065080K3S	UF3C065080K4S	UJ3C065080B3 UF3C065080B3(1)	UJ3C065080T3S	UF3C065080B7S
1200V	30-39	UJ3C120040K3S UF3C120040K3S (1)	UF3C120040K4S			UF3SC120040B7S
	40-49					
	50-99	UJ3C120080K3S UF3C120080K3S	UF3C120080K4S			UF3C120080B7S
	150+	UJ3C120150K3S	UF3C120150K4S			UF3C120150B7S

Notes:

1. Q(rr) for UF3C FAST device lower than equivalent UJ3C device

All data represents current information as of May, 2019.

## SiC JFETs

### UJ3N/UF3N Series Selector Guide | 650V/900V/1200V and 1700V

Voltage	Part Number	Description	Package	Rdson (mΩ)	Idmax (A) at 25°C	Samples	Production
1700V	UJ3N1701K2	1.1Ω - 1700V SiC Normally-On JFET	Wafer	1100	3.9	Contact Sales	
	UF3N170400	400mΩ - 1700V SiC Normally-On JFET	Wafer	400	8*	Contact Sales	
1200V	UF3N120140	140mΩ - 1200V SiC Normally-On JFET	Wafer	140	20*	Contact Sales	
	UJ3N120070	70mΩ - 1200V SiC Normally-On JFET	Wafer	70	33.5	Contact Sales	
	UJ3N120070K3S	70mΩ - 1200V SiC Normally-On JFET	TO-247-3L	70	33.5	Now	Now
	UJ3N120035	35mΩ - 1200V SiC Normally-On JFET	Wafer	35	63	Contact Sales	
	UJ3N120035K3S	35mΩ - 1200V SiC Normally-On JFET	TO-247-3L	35	63	Now	Now
900V	UF3N090800	735mΩ - 900V SiC Normally-On JFET	Wafer	735	4*	Contact Sales	
	UF3N090350	330mΩ - 900V SiC Normally-On JFET	Wafer	330	8*	Contact Sales	
650V	UF3N065600	580mΩ - 650V SiC Normally-On JFET	Wafer	580	4*	Contact Sales	
	UF3N065300	265mΩ - 650V SiC Normally-On JFET	Wafer	265	8*	Contact Sales	
	UJ3N065080	80mΩ - 650V SiC Normally-On JFET	Wafer	80	32	Contact Sales	
	UJ3N065080K3S	80mΩ - 650V SiC Normally-On JFET	TO-247-3L	80	32	Now	Now
	UJ3N065025	25mΩ - 650V SiC Normally-On JFET	Wafer	25	85	Contact Sales	
	UJ3N065025K3S	25mΩ - 650V SiC Normally-On JFET	TO-247-3L	25	85	Now	Now

\*Note(s):

1) \*Limited by bondwire.

2) Advanced information for wafer parts, please refer to product datasheet for specifications.

## SiC Schottky Diodes

### UJ3D Series Selector Guide | 650V/1200V

Voltage	Part Number	Current Rating	TO-220-2L	TO-247-3L
1200V JBS Diode	UJ3D1202	2A	✓	
	UJ3D1205	5A	✓	
	UJ3D1210 (KSD)	2 x 5A		✓
	UJ3D1210	10A	✓	
	UJ3D1220	2 x 10A		✓
	UJ3D1250	50A		✓
650V JBS Diode	UJ3D06504	4A	✓	
	UJ3D06506	6A	✓	
	UJ3D06508	8A	✓	
	UJ3D06510	10A	✓	
	UJ3D06512	12A	✓	
	UJ3D06516	16A	✓	
	UJ3D06520	20A	✓	✓
	UJ3D06530	30A	✓	
	UJ3D06560	2 x 30A		✓

Note(s):

1) For all die inquiries, contact sales@unitedsic.com

2) All data represents current information as of May, 2019.



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