



## Product Selector Guide

SiC FETs, SiC JFETs and SiC Schottky Diodes

Q2 - 2021

## High Performance SiC FETs , JFETs and Schottky Diodes

### Key Features

- Multiple  $V_{DS}$  options: 650/750/900/1200/1700V
- Lowest  $R_{DS(on)}$ 
  - 7m $\Omega$  @ 650V
  - 9m $\Omega$  @ 1200V
- Gen 4 SiC FETs (UJ4C Series)
  - 750V, 18m $\Omega$  and 60m $\Omega$  options
  - Best-in-class  $R_{DS(on)}$  x Area delivers lowest conduction losses
  - Improves the  $Q_{rr}$  and  $E_{on}/E_{off}$  losses at a given  $R_{DS(on)}$
  - Reduces both  $C_{oss(er)}/E_{oss}$  and  $C_{oss(tr)}$
- High performance cascode configuration
- Excellent body diode ( $V_f < 2V$ )
- Drive with any Si and/or SiC gate drive voltage
- Superior thermal performance
- Integrated ESD and gate protection
- Industry standard packages, including Kelvin source
- Majority of devices are AEC-Q101 qualified

### End Applications

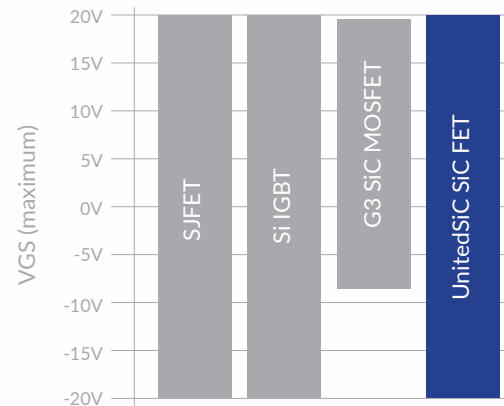
- Electric Vehicles
- Battery Chargers
- Telecom and Server PSU
- Circuit Protection
- Solar Inverters
- Energy Storage
- Motor drives



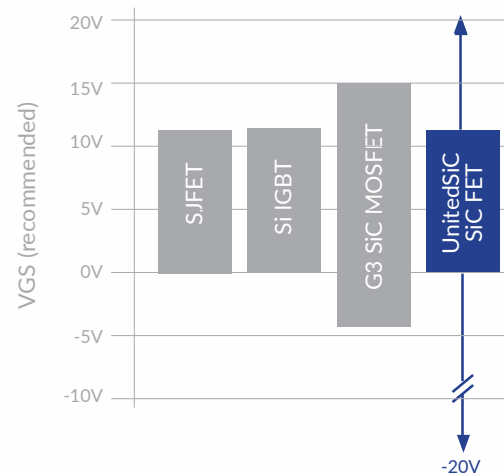
## Flexible Design Without Changing Gate Drive Voltage

- Replaces Si IGBTs, Si FETs, SiC MOSFETs or Si Superjunction devices
  - SiC FET design guidelines available to support successful upgrade
- Innovative cascode configuration enables Si and SiC gate voltage compatibility
- Integrated clamping diode protects gates from  $|20V|$  with built-in ESD protection

## Superior Gate and ESD Protection



## 12V/0V Operation Simplifies Upgrading



## SiC FETs

### UF3C/UF3SC/UJ3C/UJ4C Series Selector Guide



Volt.	$R_{DS(on)}$ (m $\Omega$ ) at 25°C	$R_{DS(on)}$ (m $\Omega$ ) at 125°C	Generation	TO-247-3L	TO-247-4L	D2PAK-3L	TO-220-3L	D2PAK-7L	DFN 8X8
650V	6.7	8.8	Gen 3 Fast		UF3SC065007K4S				
	27	35	Gen 3 Fast	UF3C065030K3S <sup>(1)</sup>	UF3C065030K4S	UF3C065030B3 <sup>(1)</sup>	UF3C065030T3S <sup>(1)</sup>	UF3SC065030B7S	
			Gen 3	UJ3C065030K3S		UJ3C065030B3	UJ3C065030T3S		
	34	48	Gen 3 Fast						UF3SC065030D8S
	42	59	Gen 3 Fast	UF3C065040K3S	UF3C065040K4S	UF3C065040B3	UF3C065040T3S	UF3SC065040B7S	
	45	67	Gen 3 Fast						UF3SC065040D8S
750V	80	111	Gen 3 Fast	UF3C065080K3S <sup>(1)</sup>	UF3C065080K4S	UF3C065080B3 <sup>(1)</sup>	UF3C065080T3S <sup>(1)</sup>	UF3C065080B7S	
			Gen 3	UJ3C065080K3S		UJ3C065080B3	UJ3C065080T3S		
	18	23	Gen 4	UJ4C075018K3S	UJ4C075018K4S				
	58	74	Gen 4	UJ4C075060K3S	UJ4C075060K4S				
1200V	8.6	13.5	Gen 3 Fast		UF3SC120009K4S				
	16	25	Gen 3 Fast	UF3SC120016K3S	UF3SC120016K4S				
	35	56	Gen 3 Fast	UF3C120040K3S	UF3C120040K4S			UF3SC120040B7S	
			Gen 3	UJ3C120040K3S					
	70	111	Gen 3	UJ3C120070K3S					
	80	132	Gen 3 Fast	UF3C120080K3S	UF3C120080K4S			UF3C120080B7S	
			Gen 3	UJ3C120080K3S					
	150	254	Gen 3 Fast		UF3C120150K4S			UF3C120150B7S	
			Gen 3	UJ3C120150K3S					
1700V	410	775	Gen 3 Fast	UF3C120400K3S					
	410	775	Gen 3 Fast	UF3C170400K3S					

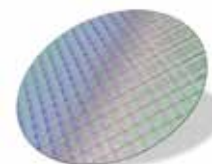
Notes:

(1)  $Q_{rr}$  for UF3C FAST device lower than equivalent UJ3C device

All data represents current information as of June, 2021.

## SiC JFETs

### UJ3N/UF3N Series Selector Guide



Wafer (Contact Sales)



TO-247-3L

Voltage	$R_{DS(on)}$ (m $\Omega$ )	$I_D$ max (A) at 25°C	Generation		
1700V	1100	3.9	Gen 3	UJ3N1701K2	
	400	8 <sup>(1)</sup>	Gen 3 Fast	UF3N170400	
1200V	140	20 <sup>(1)</sup>	Gen 3 Fast	UF3N120140	
	70	33.5	Gen 3	UJ3N120070	UJ3N120070K3S
	66	34	Gen 3		UJ3N120065K3S
	35	63	Gen 3	UJ3N120035	UJ3N120035K3S
900V	735	4 <sup>(1)</sup>	Gen 3 Fast	UF3N090800	
	330	8 <sup>(1)</sup>	Gen 3 Fast	UF3N090350	
650V	580	4 <sup>(1)</sup>	Gen 3 Fast	UF3N065600	
	265	8 <sup>(1)</sup>	Gen 3 Fast	UF3N065300	
	80	32	Gen 3	UJ3N065080	UJ3N065080K3S
	25	85	Gen 3	UJ3N065025	UJ3N065025K3S

Notes:

(1) Limited by bondwire.

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

## SiC Schottky Diodes

### UJ3D Series Selector Guide



TO-220-2L



TO-247-3L



TO-247-2L

Voltage	Current Rating	Generation	TO-220-2L	TO-247-3L	TO-247-2L
1700V	25A	Gen 3			UJ3D1725K2
1200V	2A	Gen 3	UJ3D1202TS		
	5A	Gen 3	UJ3D1205TS		
	2 x 5A	Gen 3		UJ3D1210KSD	
	10A	Gen 3	UJ3D1210TS	UJ3D1210KS	UJ3D1210K2
	2 x 10A	Gen 3		UJ3D1220KSD	
	20A	Gen 3			UJ3D1220K2
	50A	Gen 3		UJ3D1250K	UJ3D1250K2
650V	4A	Gen 3	UJ3D06504TS		
	6A	Gen 3	UJ3D06506TS		
	8A	Gen 3	UJ3D06508TS		
	10A	Gen 3	UJ3D06510TS		
	12A	Gen 3	UJ3D06512TS		
	16A	Gen 3	UJ3D06516TS		
	2 x 10A	Gen 3		UJ3D06520KSD	
	20A	Gen 3	UJ3D06520TS		
	30A	Gen 3	UJ3D06530TS		
	2 x 30A	Gen 3		UJ3D06560KSD	

Note(s):

For all die inquiries, contact sales@unitedsic.com

All data represents current information as of June, 2021.

# FETJet™

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