

QORVO®

Product Selector Guide

SiC FETs, SiC JFETs and SiC Schottky Diodes



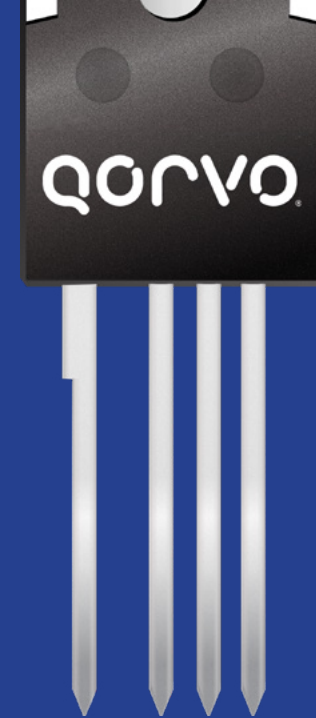
High-Performance SiC FETs, JFETs and Schottky Diodes

Key Features

- Multiple VDS options: 650/750/900/1200/1700V
- Lowest $R_{DS(on)}$
 - 5.4m Ω @ 750V
 - 7m Ω @ 650V
 - 9m Ω @ 1200V
- Gen 4 SiC FETs
 - 750V, 5.4m Ω to 60m Ω options (UJ4C/SC Series)
 - 1200V, 23m Ω to 70m Ω options (UF4C/SC Series)
- Best-in-class Figures of Merit (FoM)
 - $R_{DS(on)} \times \text{Area}$
 - $C_{oss(er)}/E_{oss} \times R_{DS(on)}$
 - $C_{oss(tr)} \times R_{DS(on)}$
 - $R_{DS(on)} \times Q_g$
- 5 μ s short-circuit withstand time @ 6m Ω , 750V
- 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

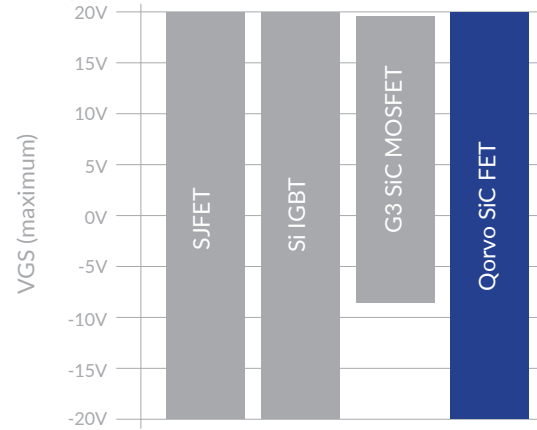
- Electric Vehicles
- Motor Drives
- On-board Chargers
- Battery Chargers
- Wireless Chargers
- DC/DC Conversion
- Telecom and Server PSU
- Circuit Protection
- Solar Inverters
- Energy Storage



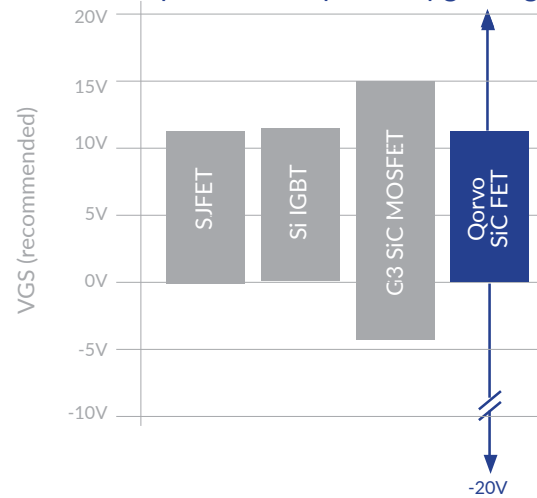
Flexible Design Without Changing Gate Drive Voltage

- 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

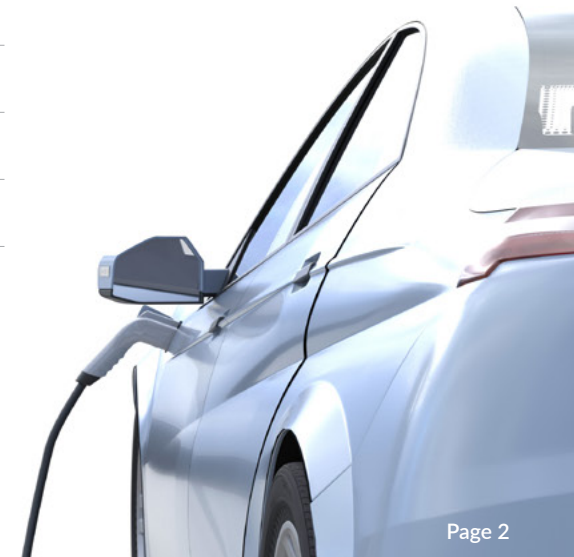
Superior Gate and ESD Protection



12V/0V Operation Simplifies Upgrading

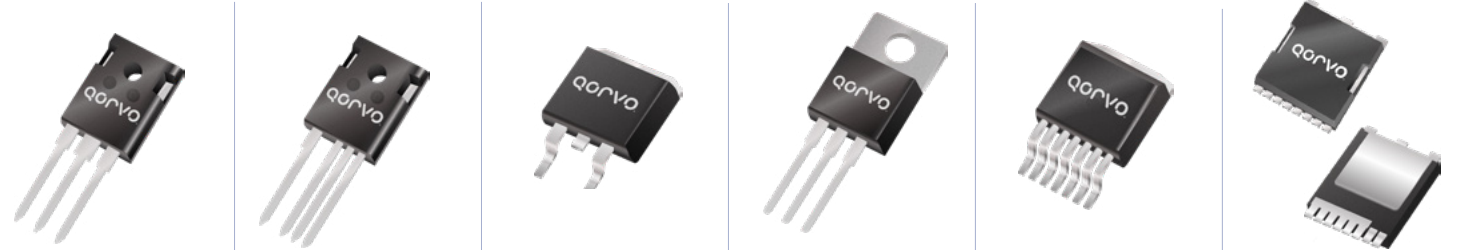


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SiC FETs

650V to 750V
 UF3C/UF3SC/UJ3C
 UJ4C/UJ4SC
 Series Selector Guide



Voltage	R _{DS(on)} (mΩ) at 25°C	R _{DS(on)} (mΩ) at 125°C	Generation	TO-247-3L	TO-247-4L	D2PAK-3L	TO-220-3L	D2PAK-7L	TOLL
650V	6.7	8.8	Gen 3 FAST		UF3SC065007K4S*				
	27	35	Gen 3 FAST	UF3C065030K3S (1)*	UF3C065030K4S*	UF3C065030B3 (1)*	UF3C065030T3S (1)*	UF3SC065030B7S	
			Gen 3	UJ3C065030K3S*		UJ3C065030B3*	UJ3C065030T3S*		
	42	59	Gen 3 FAST	UF3C065040K3S*	UF3C065040K4S*	UF3C065040B3*	UF3C065040T3S*	UF3SC065040B7S	
	80	111	Gen 3 FAST	UF3C065080K3S (1)*	UF3C065080K4S*	UF3C065080B3 (1)*	UF3C065080T3S (1)*	UF3SC065080B7S	
			Gen 3	UJ3C065080K3S*		UJ3C065080B3*	UJ3C065080T3S*		
750V	5.4	9.3	Gen 4						UJ4SC075005L8S
	5.9	9.8	Gen 4		UJ4SC075006K4S				
	8.6	14.4	Gen 4						UJ4SC075008L8S
	9	14.8	Gen 4			UJ4SC075009K4S		UJ4SC075009B7S	
	11	18.4	Gen 4			UJ4SC075011K4S		UJ4SC075011B7S	
	18	29	Gen 4					UJ4SC075018B7S	
		29	Gen 4						UJ4SC075018L8S
	31	31	Gen 4	UJ4C075018K3S*	UJ4C075018K4S*				
	23	39	Gen 4	UJ4C075023K3S*	UJ4C075023K4S*			UJ4C075023B7S	
	33	57	Gen 4	UJ4C075033K3S*	UJ4C075033K4S*			UJ4C075033B7S	
	44	75	Gen 4	UJ4C075044K3S*	UJ4C075044K4S*			UJ4C075044B7S	
58	106	Gen 4	UJ4C075060K3S*	UJ4C075060K4S*			UJ4C075060B7S		

Notes:

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

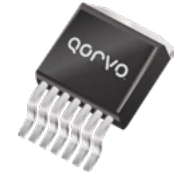
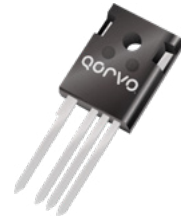
All data represents current information as of March, 2023. Please contact Qorvo sales for recommended device support at www.qorvo.com/sales.

* AEC-Q101 grade available

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SiC FETs

1200V to 1700V
 UF3C/UF3SC/UJ3C
 UF4C/SC
 Series Selector Guide



Voltage	$R_{DS(on)}$	$R_{DS(on)}$	Generation					
	(mΩ) at 25°C	(mΩ) at 125°C		TO-247-3L	TO-247-4L	D2PAK-3L	TO-220-3L	D2PAK-7L
1200V	8.6	13.5	Gen 3 FAST		UF3SC120009K4S*			
	16	25	Gen 3 FAST	UF3SC120016K3S*	UF3SC120016K4S*			
	23	42	Gen 4		UF4SC120023K4S			
	30	56	Gen 4		UF4SC120030K4S			
	35	56	Gen 3 FAST	UF3C120040K3S*	UF3C120040K4S*			UF3SC120040B7S*
			Gen 3	UJ3C120040K3S*				
	53	112	Gen 4	UF4C120053K3S	UF4C120053K4S			
	70	111	Gen 3	UJ3C120070K3S*	UJ3C120070K4S*			
	72	140	Gen 4	UF4C120070K3S	UF4C120070K4S			
	80	132	Gen 3 FAST	UF3C120080K3S*	UF3C120080K4S*			UF3C120080B7S
			Gen 3	UJ3C120080K3S (1)*				
	150	254	Gen 3 FAST		UF3C120150K4S*			UF3C120150B7S
			Gen 3	UJ3C120150K3S*				
410	775	Gen 3 FAST	UF3C120400K3S*					
	780	Gen 3					UF3C120400B7S*	
	780	Gen 3						
1700V	410	775	Gen 3 FAST	UF3C170400K3S*			UF3C170400B7S*	

Notes:

(1) The UJ3C120080K3S is not recommended for new designs. UJ3C120070K3S is recommended as a replacement.

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SiC JFETs

UJ3N/UF3N Series Selector Guide

Voltage	$R_{DS(on)}$ (m Ω)	I_D max (A) at 25°C	Generation	 Wafer (Contact Sales)	 TO-247-3L	 D2PAK-7L
1700V	1100	3.4	Gen 3	UJ3N1701K2		
	400	6.8	Gen 3 FAST			UF3N170400B7S*
	400	8 (1)	Gen 3 FAST	UF3N170400		
1200V	140	20 (1)	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 (1)	Gen 3 FAST	UF3N090800		
	330	8 (1)	Gen 3 FAST	UF3N090350		
650V	580	4 (1)	Gen 3 FAST	UF3N065600		
	265	8 (1)	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 contact Qorvo sales for recommended device support at www.qorvo.com/sales.

* AEC-Q101 grade available

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*	

Notes:

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