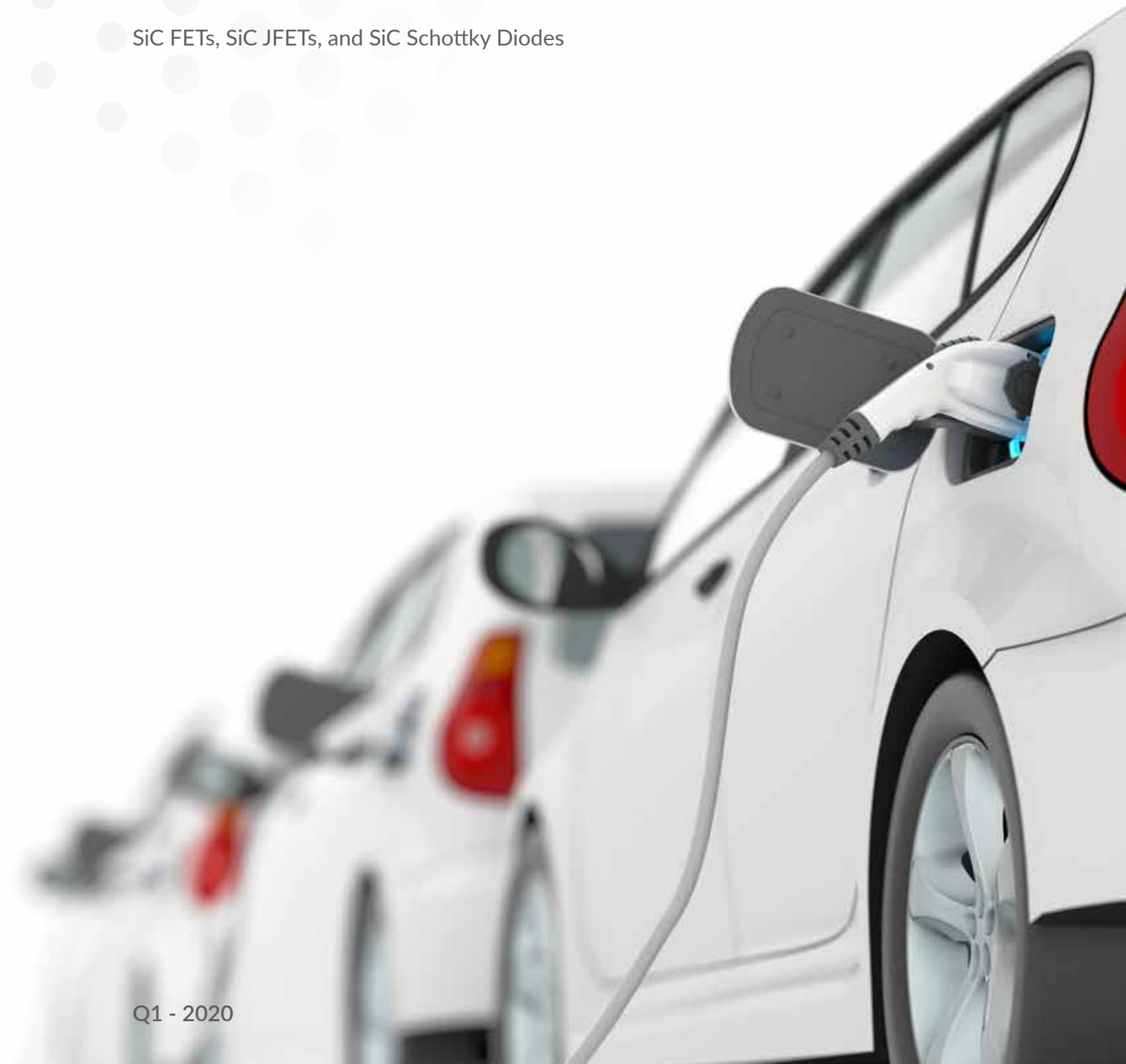




Product Selector Guide

SiC FETs, SiC JFETs, and SiC Schottky Diodes





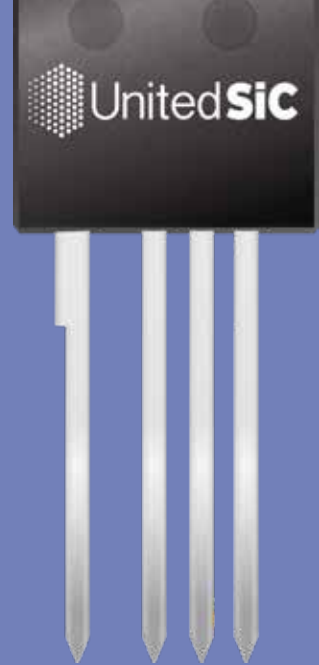
UF3SC Series
FAST 650V
& 1200V SiC FETs

Introducing the first SiC FETs with $R_{DS(on)} < 10m\Omega$

New UnitedSiC UF3SC series of FAST 650V and 1200V SiC FETs deliver:

- **Superior efficiency:** Ultra-low $R_{DS(on)}$ of $7m\Omega$ @ 650V; $9m\Omega$ @ 1200V
- **Lower losses:** Conduction loss 2.5X - 4X lower than superjunction silicon MOSFETs
- **Easy, drop-in replacement:** Can be driven with gate voltages compatible with existing SiC MOSFETs, Si MOSFETs or IGBTs
- **Standard packaging:** TO-247 in 4-lead Kelvin source and standard 3-lead

Go to unitedsic.com/uf3sc and learn how your power designs can deliver new levels of performance with the industry's best SiC FETs.



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

Key Features

- Excellent body diode performance ($V_f < 2V$)
- Drive with any Si and/or SiC gate drive voltage
- Low $R_{DS(on)}$ from $7m\Omega$ to $150m\Omega$
- High performance cascode configuration
- Superior thermal performance
- Integrated ESD and gate protection
- Kelvin packages (TO-247-4L, and DFN 8x8)

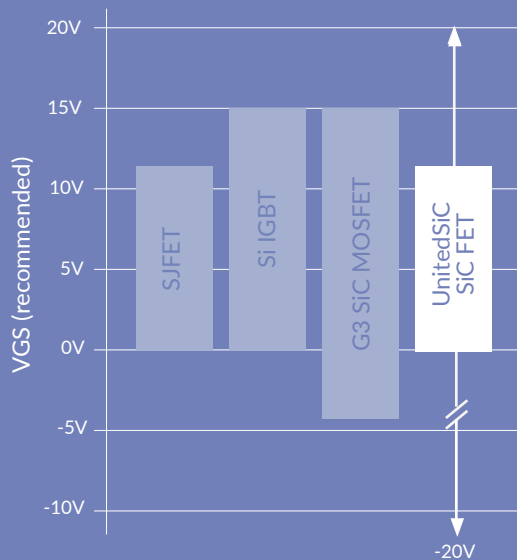
End Applications

- Electric Vehicles
- Battery Chargers
- Telecom & Server PSU
- Circuit Protection
- Solar Inverters
- Energy Storage

Drop-in Functionality Without Changing Gate Drive Voltage

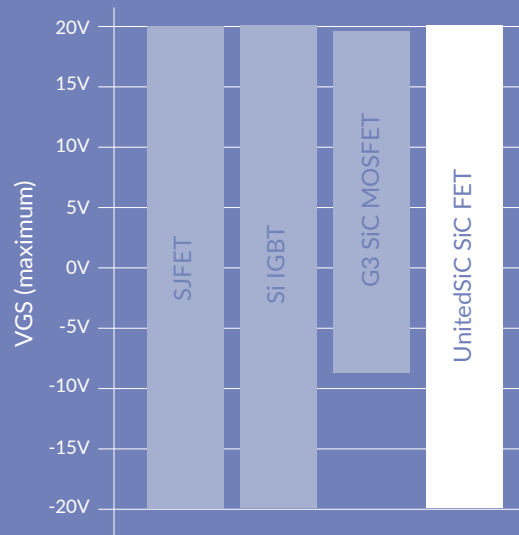
(Replaces Si IGBTs, Si FETs, SiC MOSFETs or Si Superjunction Devices)

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
	UJ3C120070K3S	1200V 70mΩ SiC Cascode	34.5	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/SC 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
	UF3C120040K4S	1200V 35mΩ SiC Cascode Fast	65.0	Now	Now	TO-247-4L
	UF3SC120016K4S	1200V 16mΩ SiC Stack Cascode Fast	107.0	Now	Q2 20	TO-247-4L
	UF3SC120009K4S	1200V 8.6mΩ SiC Stack Cascode Fast	120.0	Now	Q2 20	TO-247-4L
	UF3C120080K3S	1200V 80mΩ SiC Cascode Fast	33.0	Now	Now	TO-247-3L
	UF3C120040K3S	1200V 35mΩ SiC Cascode Fast	65.0	Now	Now	TO-247-3L
	UF3SC120016K3S	1200V 16mΩ SiC Stack Cascode Fast	107.0	Now	Q2 20	TO-247-3L
	UF3C120150B7S	1200V 150mΩ SiC Cascode Fast	18.4	Now	Q3 20	D2PAK-7L
	UF3C120080B7S	1200V 80mΩ SiC Cascode Fast	28.8	Now	Q3 20	D2PAK-7L
	UF3SC120040B7S	1200V 35mΩ SiC Stack Cascode Fast	47.0	Now	Q3 20	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
	UF3SC065007K4S	650V 6.7mΩ SiC Stack Cascode Fast	120.0	Now	Q2 20	TO-247-4L
	UF3C065080K3S	650V 80mΩ SiC Cascode Fast	31.0	Now	Now	TO-247-3L
	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
	UF3C065080T3S	650V 80mΩ SiC Cascode Fast	31.0	Now	Now	TO-220-3L
	UF3C065040T3S	650V 42mΩ SiC Cascode Fast	54.0	Now	Now	TO-220-3L
	UF3C065030T3S	650V 27mΩ SiC Cascode Fast	85.0	Now	Now	TO-220-3L
	UF3C065080B7S	650V 80mΩ SiC Cascode Fast	27.0	Now	Q3 20	D2PAK-7L
	UF3SC065040B7S	650V 42mΩ SiC Stack Cascode Fast	47.0	Now	Q3 20	D2PAK-7L
	UF3SC065030B7S	650V 27mΩ SiC Stack Cascode Fast	62.0	Now	Q3 20	D2PAK-7L
	UF3C065080B3	650V 80mΩ SiC Cascode Fast	25.0	Now	Now	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
	UF3SC065040D8S	650V 45mΩ SiC Stack Cascode Fast	18.0	Now	Now	DFN 8x8
UF3SC065030D8S	650V 34mΩ SiC Stack Cascode Fast	18.0	Now	Now	DFN 8x8	

SiC FETs

RDS(on) and Package Type

							
Volt.	RDS(on) mΩ typ.	TO-247-3L	TO-247-4L	D2PAK-3L	TO-220-3L	D2PAK-7L	DFN 8X8
650V	0-9		UF3SC065007K4S				
	20-29	UJ3C065030K3S UF3C065030K3S (1)	UF3C065030K4S	UJ3C065030B3 UF3C065030B3 (1)	UJ3C065030T3S UF3C065030T3S (1)	UF3SC065030B7S	
	30-39						UF3SC065030D8S
	40-49	UF3C065040K3S	UF3C065040K4S	UF3C065040B3	UF3C065040T3S	UF3SC065040B7S	UF3SC065040D8S
	50-99	UJ3C065080K3S UF3SC065080K3S (1)	UF3C065080K4S	UJ3C065080B3 UF3C065080B3 (1)	UJ3C065080T3S UF3C065080T3S (1)	UF3C065080B7S	
1200V	0-9		UF3SC120009K4S				
	10-19	UF3SC120016K3S	UF3SC120016K4S				
	30-39	UJ3C120040K3S UF3C120040K3S (1)	UF3C120040K4S			UF3SC120040B7S	
	50-99	UJ3C120080K3S UJ3C120070K3S UF3C120080K3S (1)	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 January 31, 2020.

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 January 31, 2020.

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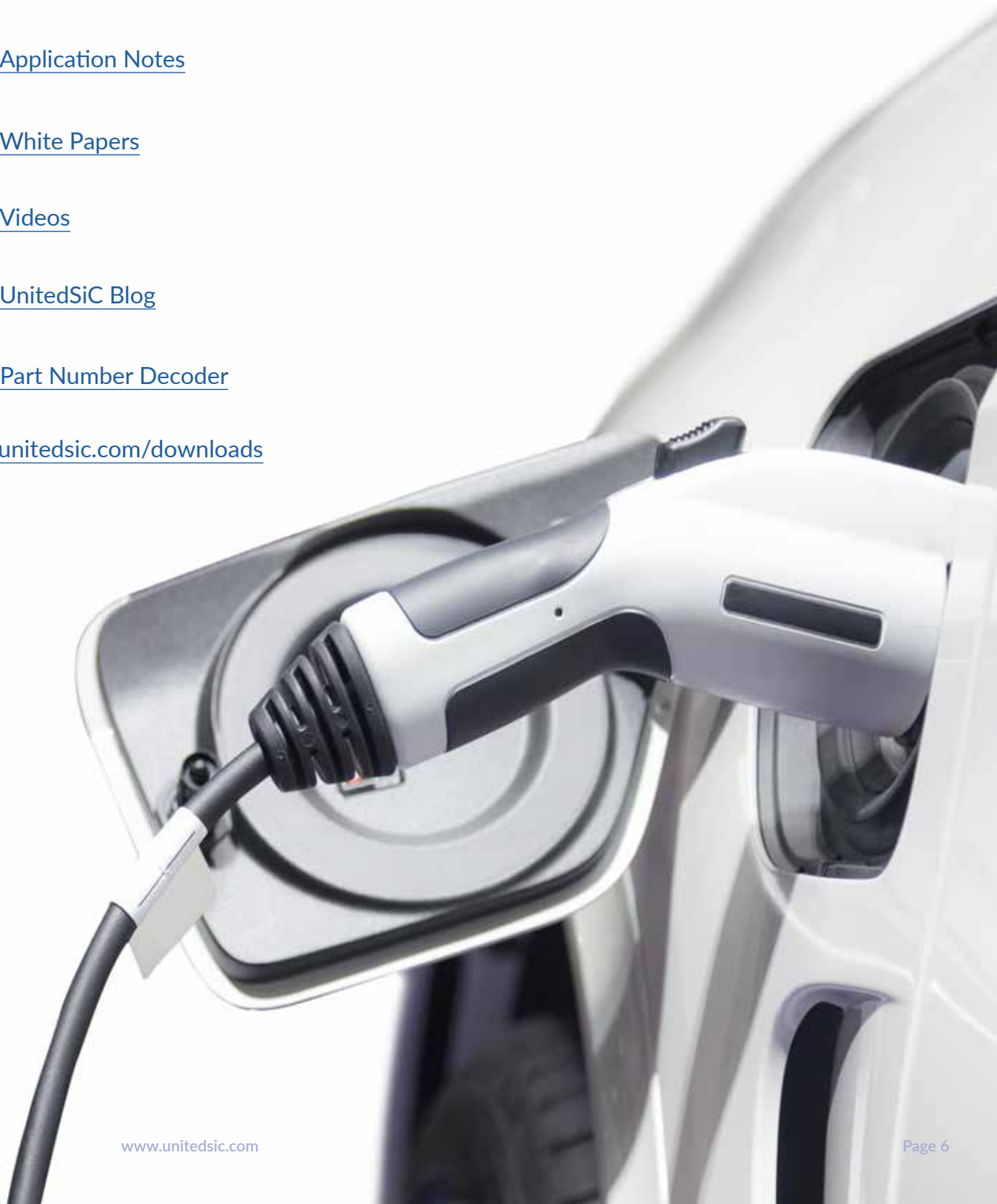


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