VISHAY

The DNA of tech.™

Gen 3 Silicon Carbide Schottky Diodes

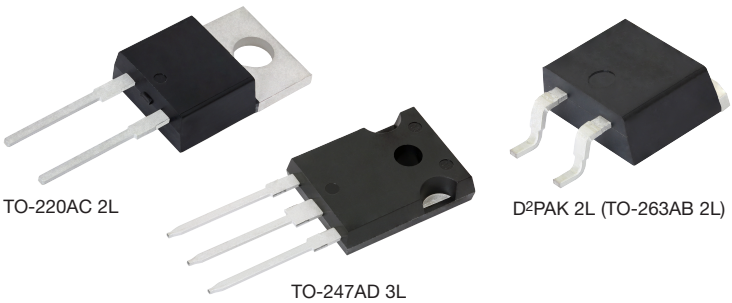
4 A to 40 A, 650 V SiC Schottky Diodes Increase Efficiency and Reliability for Switching Power Designs

ADVANTAGE

Merged PIN Schottky (MPS) design offers excellent current surge robustness with very low forward voltage drop, low capacitive charge, and low reverse leakage

KEY PRODUCT FEATURES

- ✓ Better efficiency—low forward voltage drop down to 1.46 V, low capacitive charge down to 12 nC, low reverse leakage current down to 1.3 µA
- ✓ Increased reliability—passes higher temperature reverse bias (HTRB) testing of 2000 h and temperature cycling testing of 2000 thermal cycles
- ✓ Offered in TO-220AC 2L and TO-247AD 3L through-hole and D²PAK 2L (TO-263AB 2L) surface-mount packages



TO-220AC 2L

D²PAK 2L (TO-263AB 2L)

TO-247AD 3L

MARKETS AND APPLICATIONS

CONNECTIVITY
- Mobile infrastructure
- Fixed infrastructure

CONSUMER
- Appliances

ENERGY SECTOR
- Generation and exploration
- Distribution and management
- Storage

INDUSTRIAL
- Drives and tools
- Infrastructure

COMPUTER
- Computer
- Notebook
- Server
- Desktop

RESOURCES

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ADDITIONAL BENEFITS

- The devices' MPS structure features a backside thinned via laser annealing technology, which reduces their forward voltage drop by 0.3 V compared to previous-generation solutions. In addition, their forward voltage drop times capacitive charge—a key figure of merit (FOM) for power efficiency—is 17 % lower
- The diodes' reverse recovery times are nearly temperature-independent, enabling operation at higher temperatures to +175 °C without the shifts in power efficiency caused by switching losses

THE KEY SPECIFICATIONS

Part Number	$I_{F(AV)}$ (A)	I_{FSM} (A)	V_F at I_F (V) (1)	Q_C (nC)	Circuit Configuration	Package (JEDEC®) Code
VS-3C04ET07S2L-M3	4	29	1.3	12	Single	D²PAK 2L (TO-263AB 2L)
VS-3C06ET07S2L-M3	6	42	1.3	17	Single	D²PAK 2L (TO-263AB 2L)
VS-3C08ET07S2L-M3	8	54	1.3	22	Single	D²PAK 2L (TO-263AB 2L)
VS-3C10ET07S2L-M3	10	60	1.3	29	Single	D²PAK 2L (TO-263AB 2L)
VS-3C12ET07S2L-M3	12	83	1.3	34	Single	D²PAK 2L (TO-263AB 2L)
VS-3C16ET07S2L-M3	16	104	1.3	44	Single	D²PAK 2L (TO-263AB 2L)
VS-3C20ET07S2L-M3	20	110	1.3	53	Single	D²PAK 2L (TO-263AB 2L)
VS-3C04ET07T-M3	4	29	1.3	12	Single	TO-220AC 2L
VS-3C06ET07T-M3	6	42	1.3	17	Single	TO-220AC 2L
VS-3C08ET07T-M3	8	54	1.3	22	Single	TO-220AC 2L
VS-3C10ET07T-M3	10	60	1.3	29	Single	TO-220AC 2L
VS-3C12ET07T-M3	12	83	1.3	34	Single	TO-220AC 2L
VS-3C16ET07T-M3	16	104	1.3	44	Single	TO-220AC 2L
VS-3C20ET07T-M3	20	110	1.3	53	Single	TO-220AC 2L
VS-3C16CP07L-M3	2 × 8	54	1.3	22	Common cathode	TO-247AD 3L
VS-3C20CP07L-M3	2 × 10	60	1.3	29	Common cathode	TO-247AD 3L
VS-3C40CP07L-M3	2 × 20	110	1.3	53	Common cathode	TO-247AD 3L

Note

(1) V_F at I_F at 25 °C