

SiC MOSFETs



G – GeneSiC Semiconductor

3 – 3rd Generation +15 V Gate Drive (2 - 2nd Generation +20 V Gate Drive)

R, S – $R_{DS(on)}$ Rating Prefix ; S = Special Customizations

20 – Typical $R_{DS(on)}$ Rating at 25°C (mΩ)

MT, MS – MT = Planar MOSFET; MS = Special Customization

07, 12, 17, 33 – Drain-Source Breakdown Voltage Multiplier * 100 (V)

K – Package Code

J – TO-263-7 / D2PAK-7L (with Kelvin Source connection)

K – TO-247-4 (with Kelvin Source connection)

D – TO-247-3

N – SOT-227 (with Kelvin Source connection and isolated base-plate)



TO-263-7 (D2PAK-7L)



TO-247-3



TO-247-4








SOT-227

Features

- ✓ G3R™ Technology +15 V Gate Drive
- ✓ Superior $Q_G \times R_{DS(on)}$ Figure of Merit
- ✓ Low Gate Charge and Low Capacitances
- ✓ Soft Temperature Dependence of $R_{DS(on)}$
- ✓ Superior Avalanche and Short Circuit Ruggedness
- ✓ Fast and Reliable Body Diode
- ✓ Optimized Package with Low Inductances

Benefits

- ✓ Compatible with Commercial Gate Drivers
- ✓ Superior Cost-Performance Index
- ✓ Increased Power Density for Compact Systems
- ✓ High Switching Frequency with Very Low Losses
- ✓ Advanced Packaging for Better Thermal Capabilities
- ✓ Ease of Paralleling without Thermal Runaway

Voltage	On Resistance $R_{DS(on)}$	Bare Chip	T0-263-7	T0-247-3	T0-247-4	SOT-227
						
750 V	10 mΩ		✓	✓	✓	✓
	60 mΩ		✓	✓	✓	
1200 V	12 mΩ	✓				
	20 mΩ	✓			✓	✓
	30 mΩ	✓	✓		✓	
	40 mΩ		✓	✓	✓	
	75 mΩ		✓	✓	✓	
	160 mΩ		✓	✓		
	350 mΩ		✓	✓		
1700 V	20 mΩ	✓			✓	✓
	45 mΩ	✓		✓	✓	
	160 mΩ		✓	✓		
	450 mΩ		✓	✓		
	1000 mΩ		✓	✓		
3300V	50 mΩ	✓			✓	
	120 mΩ		✓			
	1000 mΩ		✓			

Discrete Product List

750 V

Part Number	Package	$R_{DS(on)}$
G3R60MT07J	T0-263-7	60 m Ω
G3R60MT07D	T0-247-3	60 m Ω
G3R60MT07K	T0-247-4	60 m Ω

1200 V

Part Number	Package	$R_{DS(on)}$
G3R20MT12K	T0-247-4	20 m Ω
G3R20MT12N	SOT-227	20 m Ω
G3R30MT12J	T0-263-7	30 m Ω
G3R30MT12K	T0-247-4	30 m Ω
G3R40MT12J	T0-263-7	40 m Ω
G3R40MT12D	T0-247-3	40 m Ω
G3R40MT12K	T0-247-4	40 m Ω
G3R75MT12J	T0-263-7	75 m Ω
G3R75MT12D	T0-247-3	75 m Ω
G3R75MT12K	T0-247-4	75 m Ω
G3R160MT12J	T0-263-7	160 m Ω
G3R160MT12D	T0-247-3	160 m Ω
G3R350MT12J	T0-263-7	350 m Ω
G3R350MT12D	T0-247-3	350 m Ω

1700 V

Part Number	Package	$R_{DS(on)}$
G3R20MT17K	T0-247-4	20 m Ω
G3R20MT17N	SOT-227	20 m Ω
G3R45MT17D	T0-247-3	45 m Ω
G3R45MT17K	T0-247-4	45 m Ω
G3R160MT17J	T0-263-7	160 m Ω
G3R160MT17D	T0-247-3	160 m Ω
G3R450MT17J	T0-263-7	450 m Ω
G3R450MT17D	T0-247-3	450 m Ω
G2R1000MT17J	T0-263-7	1000 m Ω
G2R1000MT17D	T0-247-3	1000 m Ω

3300 V

Part Number	Package	$R_{DS(on)}$
G2R120MT33J	T0-263-7	120 m Ω
G2R1000MT33J	T0-263-7	1000 m Ω

Bare Chip

Part Number	Voltage (V _{DSS})	R _{DS(on)}
G3R20MT12-CAL	1200 V	20 mΩ
G3R30MT12-CAL		30 mΩ
G3R40MT12-CAL		40 mΩ
G3R75MT12-CAL		75 mΩ
G3R20MT17-CAL	1700 V	20 mΩ
G3R45MT17-CAL		45 mΩ
G2R50MT33-CAL	3300 V	50 mΩ
G2R120MT33-CAL		120 mΩ

SiC Custom Services

At GeneSiC Semiconductor, we collaborate with you in providing custom design services and offer early access to our newest innovations in SiC power device and module technology. It's our mission to stretch limits and challenge breakthrough innovations in conceiving ever more efficient power devices.

Our custom services also offer system-level optimization to help customers integrate our products in to your system to reach the most cost-performance efficient solution possible.

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represented by 

alfatec GmbH & Co. KG
 Meckenloher Straße 11
 91126 Rednitzhembach
 Germany

Tel.: +49 (0)9122 - 97 96 0
 Fax: +49 (0)9122 - 97 96 50
 E-Mail: info@alfatec.de
 Web: www.alfatec.de