

HIGH-VOLTAGE POWER MOSFET

SiHG47N60S-E3



MOSFETs - Able to Withstand High Energy Pulses

600-V N-Channel MOSFETs Use Super Junction Technology to Minimize On-Resistance and Withstand High Energy Pulses



KEY BENEFITS

- 47 A, 600 V, $R_{DS(on)}$ max. = 70 m Ω at $V_{GS} = 10$ V
- Low gate charge: Q_g max. = 216 nC
- 100 % avalanche tested
- $V_{DS} = 650$ V at T_J max.
- Compliant to RoHS directive 2002/95/EC

APPLICATIONS

- Inverter circuits
- Motor controls
- PWM full bridge topology

RESOURCES

- Datasheet: SiHG47N60S - <http://www.vishay.com/doc?91341>
- For technical questions contact hvm@vishay.com

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components



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PRODUCT SUMMARY		
V_{DS} (V) at T_J max.	650	
$R_{DS(on)}$ max. at 25 °C (Ω)	$V_{GS} = 10$ V	0.07
Q_g max. (nC)	216	
Q_{gs} (nC)	39	
Q_{gd} (nC)	57	
Configuration	Single	

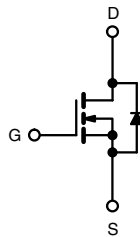
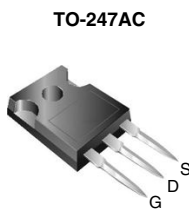
FEATURES

- Generation One
- Low Figure-of-Merit $R_{on} \times Q_g$
- 100 % Avalanche Tested
- Ultra Low Gate Charge
- Ultra Low R_{on}
- Compliant to RoHS Directive 2002/95/EC


 RoHS
COMPLIANT

APPLICATIONS

- PFC Power Supply Stages
- Hard Switching Topologies
- Solar Inverters
- UPS
- Motor Control
- Server Telecom



N-Channel MOSFET

ORDERING INFORMATION	
Package	TO-247AC
Lead (Pb)-free	SiHG47N60S-E3

ABSOLUTE MAXIMUM RATINGS ($T_C = 25$ °C, unless otherwise noted)			
PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 20	
Gate-Source Voltage AC ($f > 1$ Hz)		30	
Continuous Drain Current ($T_J = 150$ °C)	V_{GS} at 10 V	$T_C = 25$ °C	A
		$T_C = 100$ °C	
Pulsed Drain Current ^a	I_{DM}	140	
Linear Derating Factor		3.3	W/°C
Avalanche Energy (repetitive)	E_{AR}	0.42	mJ
Single Pulse Avalanche Energy ^b	E_{AS}	1800	
Maximum Power Dissipation	P_D	417	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	°C
Drain-Source Voltage Slope	dV/dt	$T_J = 125$ °C	37
Reverse Diode dV/dt ^d		8.5	V/ns
Soldering Recommendations (Peak Temperature) ^c	for 10 s	300	°C

Notes

- Repetitive rating; pulse width limited by maximum junction temperature.
- $V_{DD} = 50$ V, starting $T_J = 25$ °C, $L = 73.5$ mH, $R_g = 25$ Ω , $I_{AS} = 7$ A.
- 1.6 mm from case.
- $I_{SD} \leq I_D$, $dI/dt = 100$ A/ μ s, starting $T_J = 25$ °C.

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