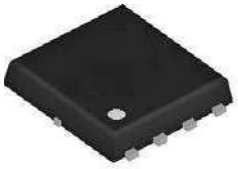
40V N-Ch Power MOSFET

DFN5*6

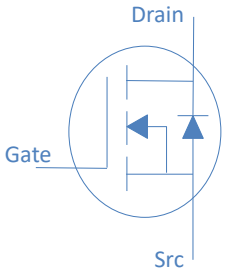


Features:

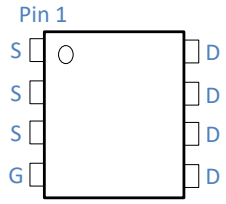
◇ High Speed Power Switching
◇ Enhanced Body diode dv/dt capability
◇ Enhanced Avalanche Ruggedness
◇ 100% UIS Tested, 100% Rg Tested
◇ Lead Free, Halogen Free

Application:

◇ Synchronous Rectification in SMPS
◇ Hard Switching and High Speed Circuit
◇ DC/DC in Telecoms and Industrial



Part Number	Package	Marking
KPRGN008N04A	DFN5*6	GN008N04A



V_{DS}	40	V
$R_{DS(on),typ}$	0.7	mΩ
$I_{D\ (Sillicon\ Limited)}$	275	A
$I_{D\ (Package\ Limited)}$	100	A

Absolute Maximum Ratings at T_j=25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Unit
Continuous Drain Current(Silicon Limited)	I_D	T_C=25℃	275	A
		T_C=100℃	174	
Continuous Drain Current(Package Limited)		T_C=25℃	100	
Drain to Source Voltage	V_{DS}	-	40	V
Gate to Source Voltage	V_{GS}	-	±20	V
Pulsed Drain Current	I_{DM}	-	1000	A
Avalanche Energy, Single Pulse	E_{AS}	L=0.1mH, T_C=25℃	180	mJ
Power Dissipation	P_D	T_C=25℃	119	W
Operating and Storage Temperature	T_J, T_{stg}	-	-55 to150	℃

Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	55	℃/W
Thermal Resistance Junction-Case	$R_{\theta JC}$	1.05	℃/W

Electrical Characteristics at T_j=25℃ (unless otherwise specified)

Static Characteristics

Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	40	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_D=250μA	2	2.6	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0V, V_{DS}=40V, T_j=25℃	-	-	1	μA
		V_{GS}=0V, V_{DS}=40V, T_j=100℃	-	-	100	
Gate to Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Drain to Source on Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=20A	-	0.7	0.85	mΩ
Transconductance	g_{fs}	V_{DS}=5V, I_D=20A	-	70	-	S
Gate Resistance	R_G	V_{GS}=0V, V_{DS} Open, f=1MHz	-	0.85	-	Ω

Dynamic Characteristics

Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=20V, f=1MHz	-	5622	-	pF
Output Capacitance	C_{oss}		-	1866	-	
Reverse Transfer Capacitance	C_{rss}		-	209	-	
Total Gate Charge	Q_g(10V)	V_{DD}=20V, I_D=20A, V_{GS}=10V	-	93	-	nC
Gate to Source Charge	Q_{gs}		-	17	-	
Gate to Drain (Miller) Charge	Q_{gd}		-	27	-	
Turn on Delay Time	$t_{d(on)}$	V_{DD}=20V, I_D=20A, V_{GS}=10V	-	21	-	ns
Rise time	t_r		-	15	-	
Turn off Delay Time	$t_{d(off)}$		-	36	-	
Fall Time	t_f		-	10	-	

Reverse Diode Characteristics

Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_F=20A	-	0.9	1.2	V
Reverse Recovery Time	t_{rr}	V_R=20V, I_F=20A, dI_F/dt=100A/μs	-	56	-	ns
Reverse Recovery Charge	Q_{rr}		-	67	-	nC