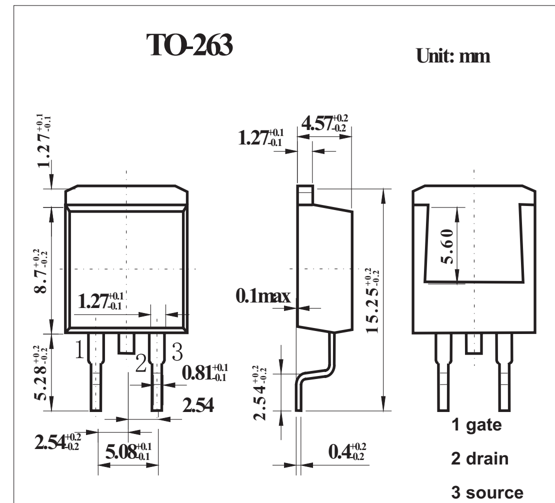
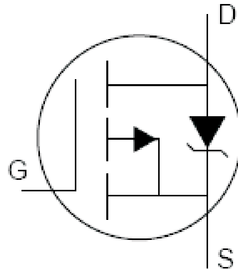
HEXFET®Power MOSFET

KRF4905S



Features

- Advanced Process Technology
- Surface Mount
- 175℃ Operating Temperature
- Fast Switching
- P-Channel
- Fully Avalanche Rated



Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Continuous Drain Current, V_{GS} @ -10V,Tc = 25℃	I_D	-74	A
Continuous Drain Current, V_{GS} @ -10V,Tc = 100℃	I_D	-52	
Pulsed Drain Current*1	I_{DM}	-260	
Power Dissipation Ta = 25℃	P_D	3.8	W
Power Dissipation Tc = 25℃		200	
Linear Derating Factor		1.3	W/℃
Gate-to-Source Voltage	V_{GS}	±20	V
Single Pulse Avalanche Energy*4	E_{AS}	930	mJ
Avalanche Current *1	I_{AR}	-38	A
Repetitive Avalanche Energy	E_{AR}	20	mJ
Peak Diode Recovery dv/dt *2	dv/dt	-5	V/ns
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to + 175	℃
Junction-to-Case	$R_{\theta JC}$	0.75	℃/W
Junction-to-Ambient	$R_{\theta JA}$	40	℃/W

*1Repetitive rating; pulse width limited by max. junction temperature.

*2 $I_{SD} \leq$ -38A, di/dt $\leq$ -270A/μs, $V_{DD} \leq V_{(BR)DSS}$,$T_J \leq$ 175℃

* 3 When mounted on 1" square PCB

*4 Starting TJ = 25℃, L = 1.3mH,R_G = 25Ω, I_{AS} = -38A.

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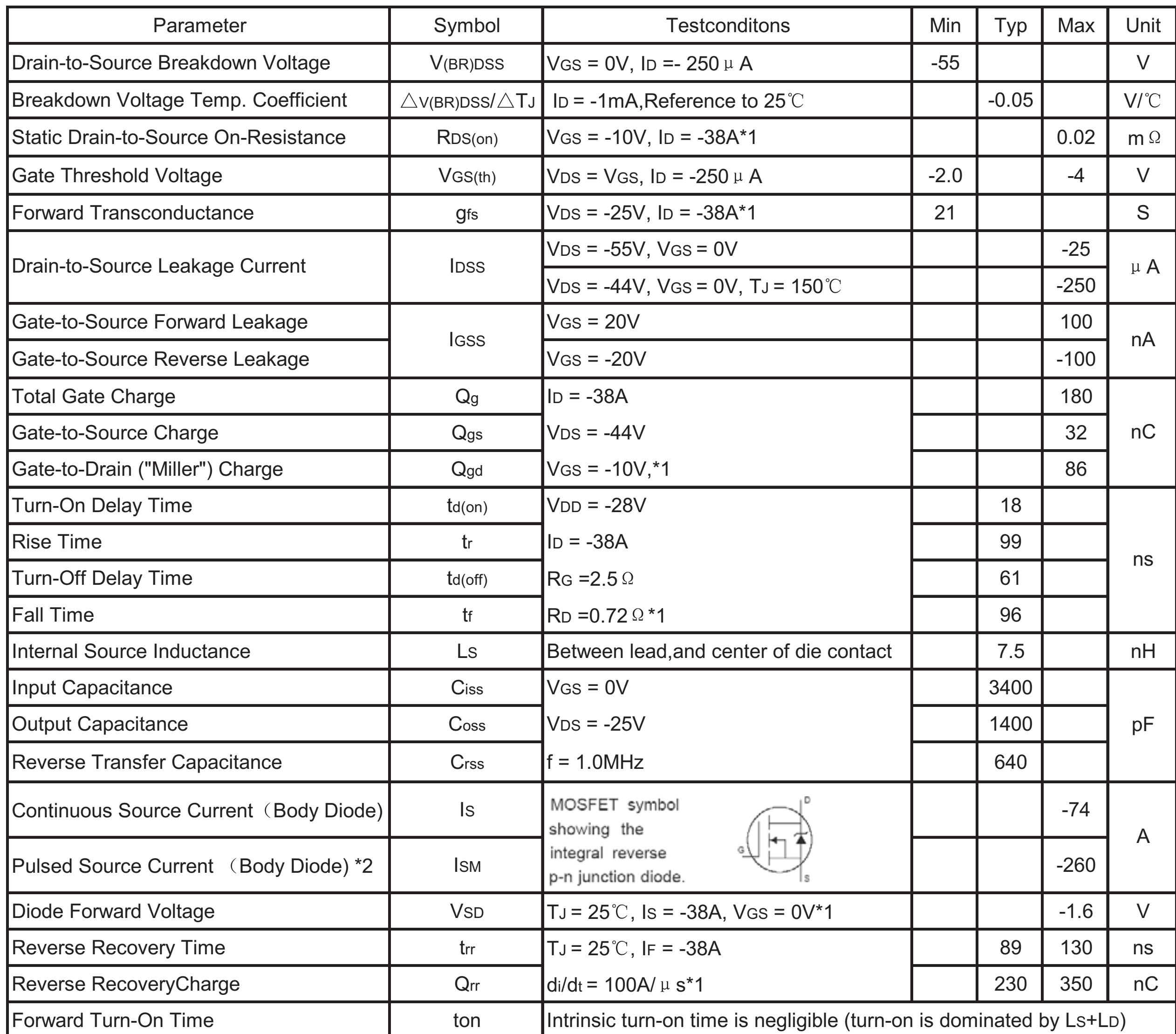
■ Electrical Characteristics Ta = 25℃



Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =- 250 μ A	-55			V
Breakdown Voltage Temp. Coefficient	$\triangle V_{(BR)DSS}/\triangle T_J$	I_D = -1mA,Reference to 25℃		-0.05		V/℃
Static Drain-to-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V, I_D = -38A*1			0.02	m Ω
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = -250 μ A	-2.0		-4	V
Forward Transconductance	g_{fs}	V_{DS} = -25V, I_D = -38A*1	21			S
Drain-to-Source Leakage Current	I_{DSS}	V_{DS} = -55V, V_{GS} = 0V			-25	μ A
		V_{DS} = -44V, V_{GS} = 0V, T_J = 150℃			-250	
Gate-to-Source Forward Leakage	I_{GSS}	V_{GS} = 20V			100	nA
Gate-to-Source Reverse Leakage		V_{GS} = -20V			-100	
Total Gate Charge	Q_g	I_D = -38A			180	nC
Gate-to-Source Charge	Q_{gs}	V_{DS} = -44V			32	
Gate-to-Drain ("Miller") Charge	Q_{gd}	V_{GS} = -10V,*1			86	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -28V		18		ns
Rise Time	t_r	I_D = -38A		99		
Turn-Off Delay Time	$t_{d(off)}$	R_G =2.5 Ω		61		
Fall Time	t_f	R_D =0.72 Ω *1		96		
Internal Source Inductance	L_S	Between lead,and center of die contact		7.5		nH
Input Capacitance	C_{iss}	V_{GS} = 0V		3400		pF
Output Capacitance	C_{oss}	V_{DS} = -25V		1400		
Reverse Transfer Capacitance	C_{rss}	f = 1.0MHz		640		
Continuous Source Current（Body Diode)	I_S	MOSFET symbol showing the integral reverse p-n junction diode.			-74	A
Pulsed Source Current （Body Diode) *2	I_{SM}				-260	
Diode Forward Voltage	V_{SD}	T_J = 25℃, I_S = -38A, V_{GS} = 0V*1			-1.6	V
Reverse Recovery Time	t_{rr}	T_J = 25℃, I_F = -38A		89	130	ns
Reverse RecoveryCharge	Q_{rr}	di/dt = 100A/ μ s*1		230	350	nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by L_S+L_D)				

*1 Pulse width ≤ 300 μ s; duty cycle ≤ 2%.

*2 Repetitive rating; pulse width limited bymax