

IRLZ34NPbF

International
IOR Rectifier

Electrical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source Breakdown Voltage	55	—	—	V	$V_{GS} = 0V, I_D = 250\mu A$
$\Delta V_{(BR)DSS}/\Delta T_J$	Breakdown Voltage Temp. Coefficient	—	0.065	—	V/ $^\circ\text{C}$	Reference to $25^\circ\text{C}, I_D = 1\text{mA}$
$R_{DS(on)}$	Static Drain-to-Source On-Resistance	—	—	0.035	Ω	$V_{GS} = 10V, I_D = 16A$ ①
		—	—	0.046		$V_{GS} = 5.0V, I_D = 16A$ ②
		—	—	0.060		$V_{GS} = 4.0V, I_D = 14A$ ③
$V_{GS(th)}$	Gate Threshold Voltage	1.0	—	2.0	V	$V_{DS} = V_{GS}, I_D = 250\mu A$
g_{fs}	Forward Transconductance	11	—	—	S	$V_{DS} = 25V, I_D = 16A$
I_{DSS}	Drain-to-Source Leakage Current	—	—	25	μA	$V_{DS} = 55V, V_{GS} = 0V$
		—	—	250		$V_{DS} = 44V, V_{GS} = 0V, T_J = 150^\circ\text{C}$
I_{GSS}	Gate-to-Source Forward Leakage	—	—	100	nA	$V_{GS} = 16V$
	Gate-to-Source Reverse Leakage	—	—	-100		$V_{GS} = -16V$
Q_g	Total Gate Charge	—	—	25	nC	$I_D = 16A$
Q_{gs}	Gate-to-Source Charge	—	—	5.2		$V_{DS} = 44V$
Q_{gd}	Gate-to-Drain ("Miller") Charge	—	—	14		$V_{GS} = 5.0V$, See Fig. 6 and 13 ④
$t_{d(on)}$	Turn-On Delay Time	—	8.9	—	ns	$V_{DD} = 28V$
t_r	Rise Time	—	100	—		$I_D = 16A$
$t_{d(off)}$	Turn-Off Delay Time	—	21	—		$R_G = 6.5\Omega, V_{GS} = 5.0V$
t_f	Fall Time	—	29	—		$R_D = 1.8\Omega$, See Fig. 10 ④
L_D	Internal Drain Inductance	—	4.5	—	nH	Between lead, 6mm (0.25in.) from package and center of die contact
L_S	Internal Source Inductance	—	7.5	—		
C_{iss}	Input Capacitance	—	880	—	pF	$V_{GS} = 0V$
C_{oss}	Output Capacitance	—	220	—		$V_{DS} = 25V$
C_{rss}	Reverse Transfer Capacitance	—	94	—		$f = 1.0\text{MHz}$, See Fig. 5



Source-Drain Ratings and Characteristics

	Parameter	Min.	Typ.	Max.	Units	Conditions
I_S	Continuous Source Current (Body Diode)	—	—	30	A	MOSFET symbol showing the integral reverse p-n junction diode.
I_{SM}	Pulsed Source Current (Body Diode) ①	—	—	110		
V_{SD}	Diode Forward Voltage	—	—	1.3	V	$T_J = 25^\circ\text{C}, I_S = 16A, V_{GS} = 0V$ ②
t_{rr}	Reverse Recovery Time	—	76	110	ns	$T_J = 25^\circ\text{C}, I_F = 16A$
Q_{rr}	Reverse Recovery Charge	—	190	290	nC	$di/dt = 100A/\mu s$ ③
t_{on}	Forward Turn-On Time	Intrinsic turn-on time is negligible (turn-on is dominated by $L_S + L_D$)				

Notes:

- ① Repetitive rating; pulse width limited by max. junction temperature. (See fig. 11)
 ② $V_{DD} = 25V$, starting $T_J = 25^\circ\text{C}$, $L = 610\mu H$
 $R_G = 25\Omega, I_{AS} = 16A$. (See Figure 12)

- ③ $I_{SD} \leq 16A, di/dt \leq 270A/\mu s, V_{DD} \leq V_{(BR)DSS}, T_J \leq 175^\circ\text{C}$
 ④ Pulse width $\leq 300\mu s$; duty cycle $\leq 2\%$.