

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1\text{mA}$	100		V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.13	$\text{V}/^{\circ}\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = 10\text{V}$ $I_D = 13.9\text{A}$		0.077	Ω
		$V_{GS} = 10\text{V}$ $I_D = 22\text{A}$		0.125	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2	4	V
g_{fs}	Forward Transconductance ¹	$V_{DS} \geq 15\text{V}$ $I_{DS} = 13.9\text{A}$	9.1		$\text{S}(\bar{v})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8BV_{DSS}$ $T_J = 125^{\circ}\text{C}$		25	μA
				250	
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = 20\text{V}$		100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20\text{V}$		-100	
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0$		1660	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		550	
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		120	
Q_g	Total Gate Charge ¹	$V_{GS} = 10\text{V}$ $I_D = 22\text{A}$ $V_{DS} = 0.5BV_{DSS}$	30	59	nC
Q_{gs}	Gate – Source Charge ¹	$I_D = 22\text{A}$	2.4	12	nC
Q_{gd}	Gate – Drain (“Miller”) Charge ¹	$V_{DS} = 0.5BV_{DSS}$	12	30.7	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 50\text{V}$ $I_D = 22\text{A}$ $R_G = 9.1\Omega$		21	ns
t_r	Rise Time			145	
$t_{d(off)}$	Turn–Off Delay Time			64	
t_f	Fall Time			105	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current			22	A
I_{SM}	Pulse Source Current ²			88	
V_{SD}	Diode Forward Voltage	$I_S = 22\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0$		1.5	V
t_{rr}	Reverse Recovery Time	$I_F = 22\text{A}$ $T_J = 25^{\circ}\text{C}$		400	ns
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$		2.9	μC
t_{on}	Forward Turn–On Time		Negligible		
PACKAGE CHARACTERISTICS					
L_D	Internal Drain Inductance (from centre of drain pad to die)		0.8		nH
L_S	Internal Source Inductance (from centre of source pad to end of source bond wire)		2.8		

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.