

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.