



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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>STATIC ELECTRICAL RATINGS</b>					
$BV_{DSS}$	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1\text{mA}$	200		V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to $25^{\circ}\text{C}$ $I_D = 1\text{mA}$		0.29	$\text{V}/^{\circ}\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance <sup>1</sup>	$V_{GS} = 10\text{V}$ $I_D = 14\text{A}$		0.100	$\Omega$
		$V_{GS} = 10\text{V}$ $I_D = 22\text{A}$		0.105	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2	4	V
$g_{fs}$	Forward Transconductance <sup>1</sup>	$V_{DS} \geq 15\text{V}$ $I_{DS} = 14\text{A}$	9		$\text{S}(\bar{v})$
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8BV_{DSS}$ $T_J = 125^{\circ}\text{C}$		25	$\mu\text{A}$
				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	
<b>DYNAMIC CHARACTERISTICS</b>					
$C_{iss}$	Input Capacitance	$V_{GS} = 0$		3500	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 25\text{V}$		700	
$C_{rss}$	Reverse Transfer Capacitance	$f = 1\text{MHz}$		110	
$Q_g$	Total Gate Charge <sup>1</sup>	$V_{GS} = 10\text{V}$ $I_D = 22\text{A}$ $V_{DS} = 0.5BV_{DSS}$	55	115	nC
$Q_{gs}$	Gate – Source Charge <sup>1</sup>	$I_D = 22\text{A}$	8	22	nC
$Q_{gd}$	Gate – Drain (“Miller”) Charge <sup>1</sup>	$V_{DS} = 0.5BV_{DSS}$	30	60	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 100\text{V}$ $I_D = 22\text{A}$ $R_G = 2.35\Omega$		35	ns
$t_r$	Rise Time			190	
$t_{d(off)}$	Turn–Off Delay Time			170	
$t_f$	Fall Time			130	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>					
$I_S$	Continuous Source Current			22	A
$I_{SM}$	Pulse Source Current <sup>2</sup>			88	
$V_{SD}$	Diode Forward Voltage	$I_S = 22\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0$		1.9	V
$t_{rr}$	Reverse Recovery Time	$I_F = 22\text{A}$ $T_J = 25^{\circ}\text{C}$		950	ns
$Q_{rr}$	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$		9.0	$\mu\text{C}$
$t_{on}$	Forward Turn–On Time		Negligible		
<b>PACKAGE CHARACTERISTICS</b>					
$L_D$	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.