



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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
<b>STATIC ELECTRICAL RATINGS</b>						
$BV_{DSS}$	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1\text{mA}$	400		V	
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to $25^\circ\text{C}$ $I_D = 1\text{mA}$		0.46	$\text{V}/^\circ\text{C}$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance <sup>4</sup>	$V_{GS} = 10\text{V}$ $I_D = 6\text{A}$		0.55	$\Omega$	
		$V_{GS} = 10\text{V}$ $I_D = 10\text{A}$		0.70		
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2	4	V	
$g_{fs}$	Forward Transconductance <sup>4</sup>	$V_{DS} \geq 15\text{V}$ $I_{DS} = 6\text{A}$	4.9		$\text{S}(\bar{v})$	
$I_{DSS}$	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	$V_{GS} = 0$		1400	pF	
$C_{oss}$	Output Capacitance	$V_{DS} = 25\text{V}$		3500		
$C_{rss}$	Reverse Transfer Capacitance	$f = 1\text{MHz}$		2300		
$Q_g$	Total Gate Charge <sup>1</sup>	$V_{GS} = 10\text{V}$ $I_D = 10\text{A}$ $V_{DS} = 0.5BV_{DSS}$	32		65	nC
$Q_{gs}$	Gate – Source Charge <sup>1</sup>		2.2		10.0	
$Q_{gd}$	Gate – Drain (“Miller”) Charge <sup>1</sup>		13.8		40.5	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 200\text{V}$ $I_D = 10\text{A}$ $R_G = 9.1\Omega$ $V_{GS} = 10\text{V}$			2.5	ns
$t_r$	Rise Time				92	
$t_{d(off)}$	Turn–Off Delay Time				79	
$t_f$	Fall Time				58	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>						
$I_S$	Continuous Source Current			10	A	
$I_{SM}$	Pulse Source Current <sup>1</sup>			40		
$V_{SD}$	Diode Forward Voltage <sup>4</sup>	$I_S = 10\text{A}$ $T_J = 25^\circ\text{C}$ $V_{GS} = 0$		1.5	V	
$t_{rr}$	Reverse Recovery Time <sup>4</sup>	$I_F = 10\text{A}$ $T_J = 25^\circ\text{C}$		600	ns	
$Q_{rr}$	Reverse Recovery Charge <sup>4</sup>	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$		5.6	$\mu\text{C}$	
$t_{on}$	Forward Turn–On Time		Negligible			
<b>PACKAGE CHARACTERISTICS</b>						
$L_D$	Internal Drain Inductance (from centre of drain pad to die)		2.0		nH	
$L_S$	Internal Source Inductance (from centre of source pad to end of source bond wire)		6.5			