

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	20	-	-	V
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 12\text{V}, V_{DS} = 0\text{ V}$	-	-	± 100	nA
Drain Cut-off Current	I_{DSS}	$V_{DS} = 20\text{V}, V_{GS} = 0\text{ V}$	-	-	1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = 250\mu\text{A}$	0.45	0.7	1	V
Drain-Source On-State Resistance ³	$R_{DS(on)}$	$V_{GS} = 4.5\text{V}, I_D = 5\text{A}$	-	12	15	m Ω
		$V_{GS} = 2.5\text{V}, I_D = 4.7\text{A}$	-	17	21	
		$V_{GS} = 1.8\text{V}, I_D = 4.3\text{A}$	-	28	50	
Dynamic Characteristics⁴						
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = 10\text{V},$ $f = 1\text{MHz}$	-	700	-	pF
Output Capacitance	C_{oss}		-	120	-	
Reverse Transfer Capacitance	C_{rss}		-	105	-	
Switching Characteristics⁴						
Total Gate Charge	Q_g	$V_{GS} = 4.5\text{V}, V_{DS} = 10\text{V},$ $I_D = 5\text{A}$	-	10.5	-	nC
Gate-Source Charge	Q_{gs}		-	2	-	
Gate-Drain Charge	Q_{gd}		-	2.5	-	
Turn-On Time	$t_{d(on)}$	$V_{GEN} = 5\text{V}, V_{DD} = 10\text{V},$ $I_D = 5\text{A}, R_G = 3\Omega,$	-	10	-	ns
Rise Time	t_r		-	20	-	
Turn-Off Time	$t_{d(off)}$		-	32	-	
Fall Time	t_f		-	12	-	
Source-Drain Diode Characteristics						
Body Diode Voltage ³	V_{SD}	$I_S = 4\text{A}, V_{GS} = 0\text{V}$	-	-	1.2	V
Continuous Source Current	I_S		-	-	10	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^\circ\text{C}$.
2. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

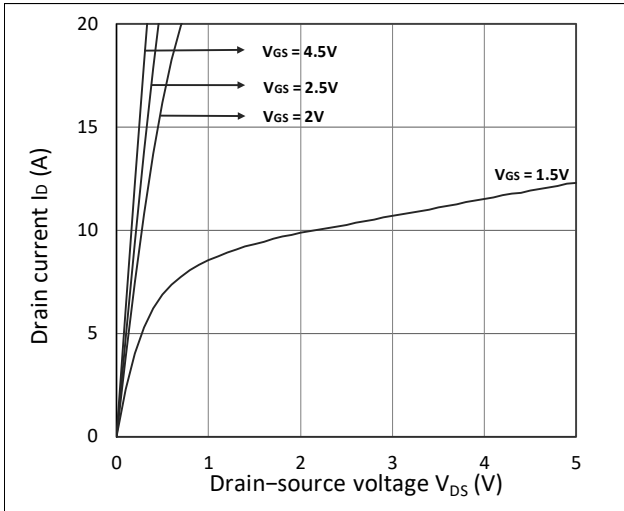


Figure 1. Output Characteristics

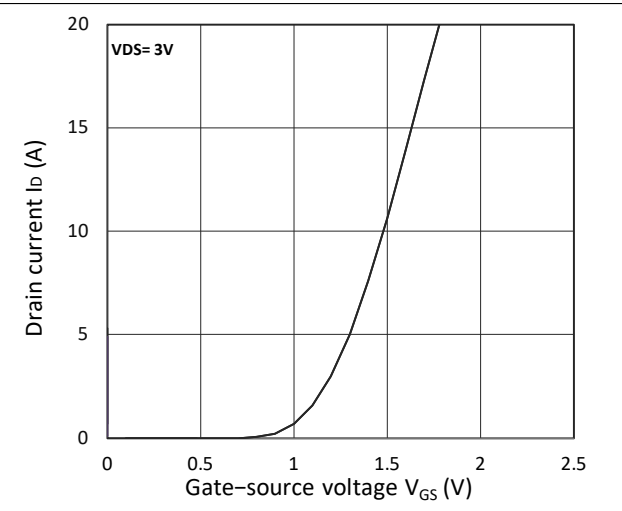


Figure 2. Transfer Characteristics

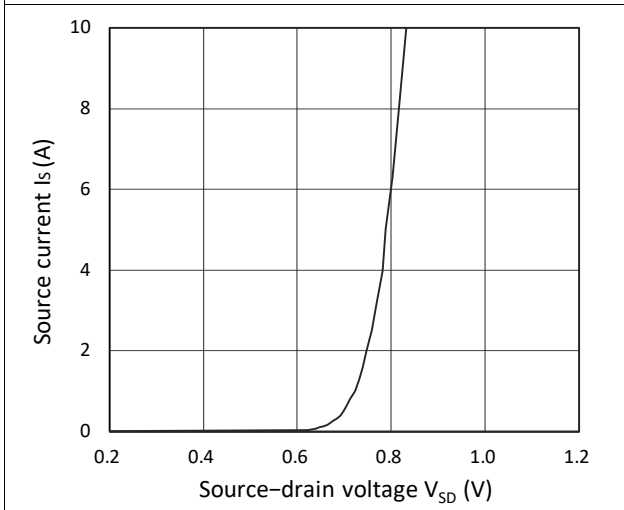


Figure 3. Forward Characteristics of Reverse

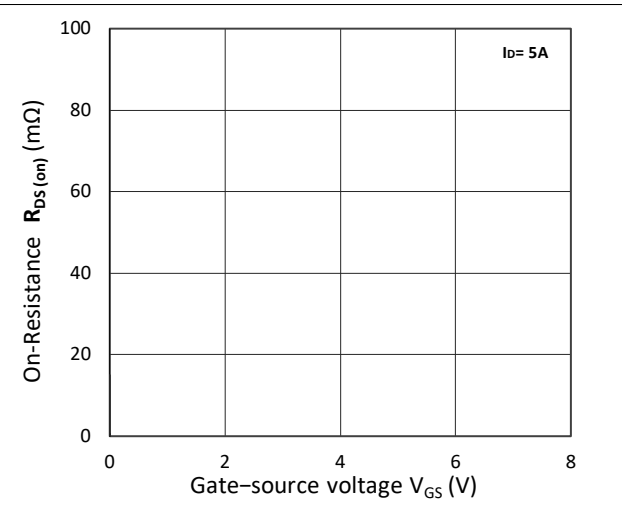


Figure 4. $R_{DS(on)}$ vs. V_{GS}

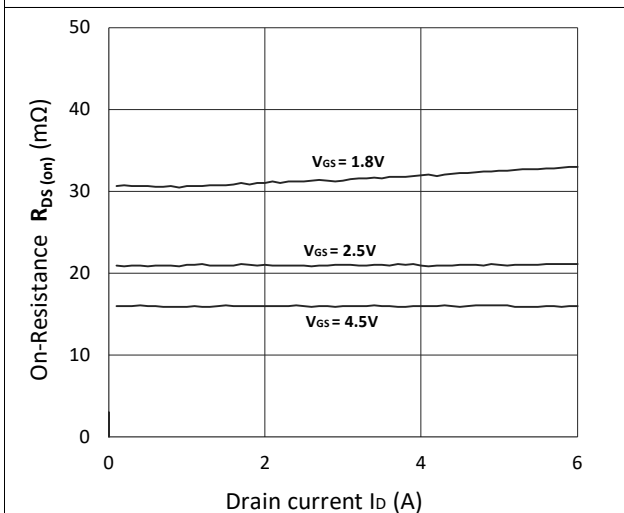


Figure 5. $R_{DS(on)}$ vs. I_D

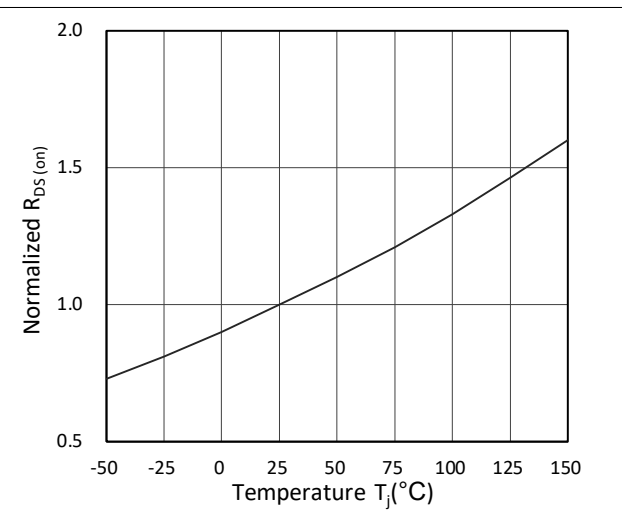


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

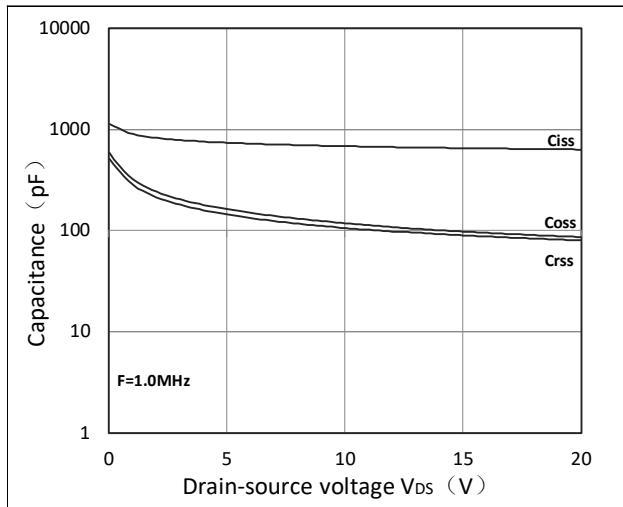


Figure 7. Capacitance Characteristics

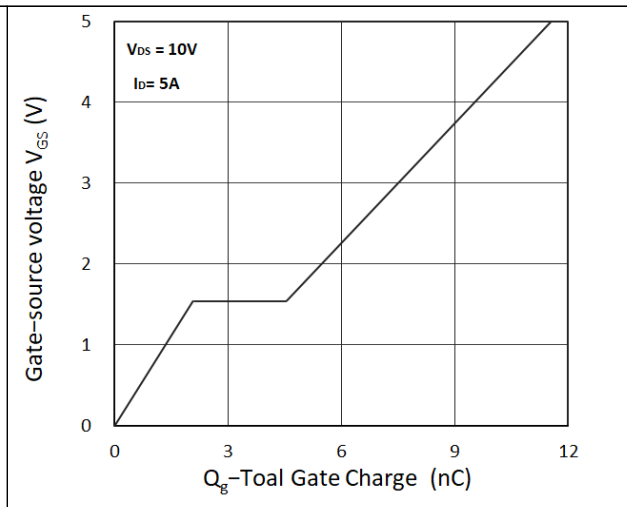


Figure 8. Gate Charge Characteristics

Package Mechanical Data :SOP-8L

