



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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 250\mu\text{A}$	100	-	-	V
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$	-	-	$\pm 100$	nA
Drain Cut-off Current	$I_{DSS}$	$V_{DS} = 100\text{V}, V_{GS} = 0\text{V}$	-	-	1	$\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}, I_D = 250\mu\text{A}$	1.1	1.5	2.5	V
Drain-Source on-state Resistance <sup>3</sup>	$R_{DS(on)}$	$V_{GS} = 10\text{V}, I_D = 2\text{A}$	-	200	230	m $\Omega$
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	$C_{iss}$	$V_{GS} = 0\text{V}, V_{DS} = 50\text{V},$ $f = 1\text{MHz}$	-	440	-	pF
Output Capacitance	$C_{oss}$		-	14	-	
Reverse Transfer Capacitance	$C_{rss}$		-	10	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total gate charge	$Q_g$	$V_{GS} = 10\text{V}, V_{DS} = 50\text{V},$ $I_D = 2\text{A}$	-	5.3	-	nC
Gate-source charge	$Q_{gs}$		-	1.4	-	
Gate-drain charge	$Q_{gd}$		-	1.8	-	
Turn-on Time	$t_{d(on)}$	$V_{GS} = 10\text{V}, V_{DD} = 50\text{V},$ $R_G = 1\Omega, I_D = 2\text{A}$	-	14	-	ns
Rise time	$t_r$		-	54	-	
Turn-off Time	$t_{d(off)}$		-	18	-	
Fall time	$t_f$		-	11	-	
<b>Source-Drain Diode characteristics</b>						
Body Diode Voltage <sup>3</sup>	$V_{SD}$	$I_S = 1\text{A}, V_{GS} = 0\text{V}$	-	-	1.2	V
Continuous Source Current	$I_S$		-	-	3.2	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 inch<sup>2</sup> 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

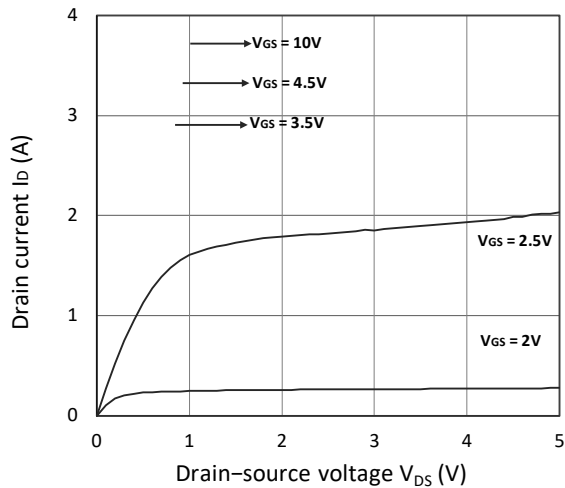


Figure 1. Output Characteristics

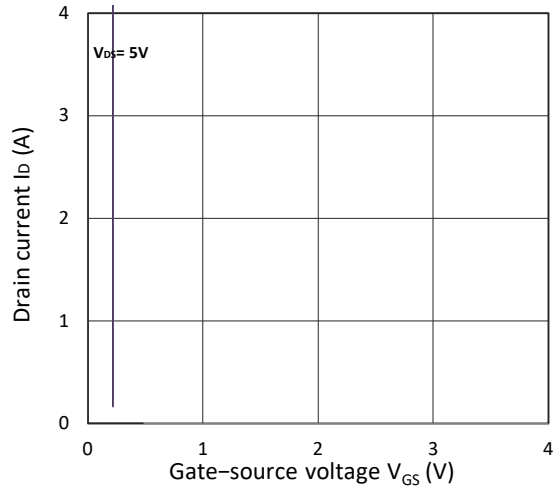


Figure 2. Transfer Characteristics

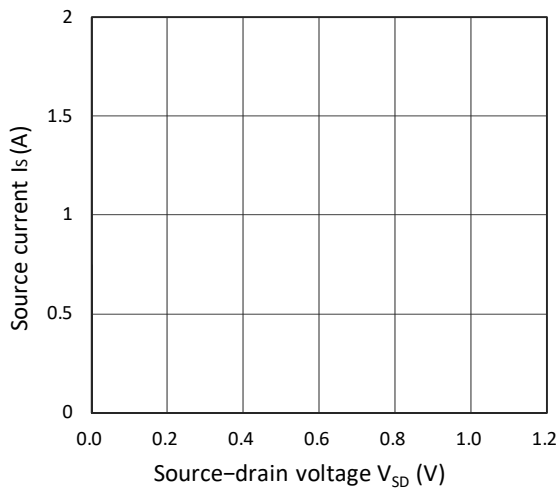


Figure 3. Forward Characteristics of Reverse

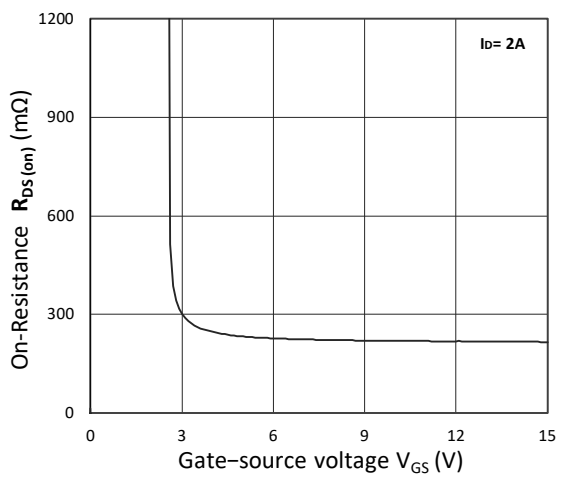


Figure 4.  $R_{DS(on)}$  vs.  $V_{GS}$

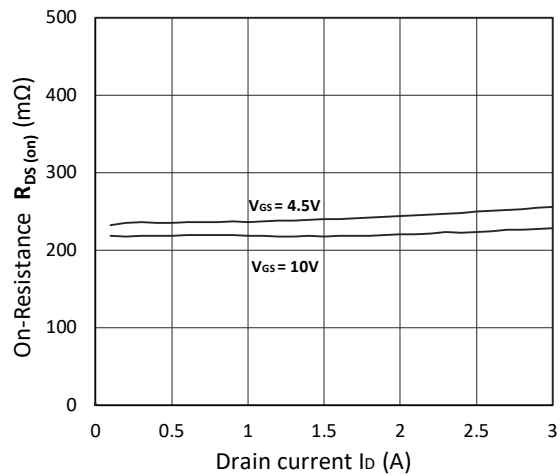


Figure 5.  $R_{DS(on)}$  vs.  $I_D$

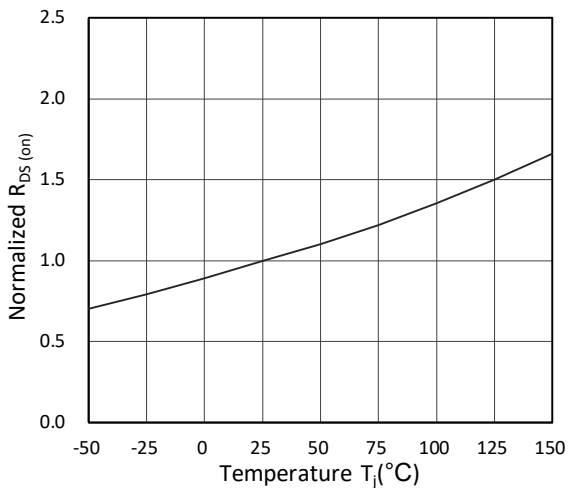


Figure 6. Normalized  $R_{DS(on)}$  vs. Temperature

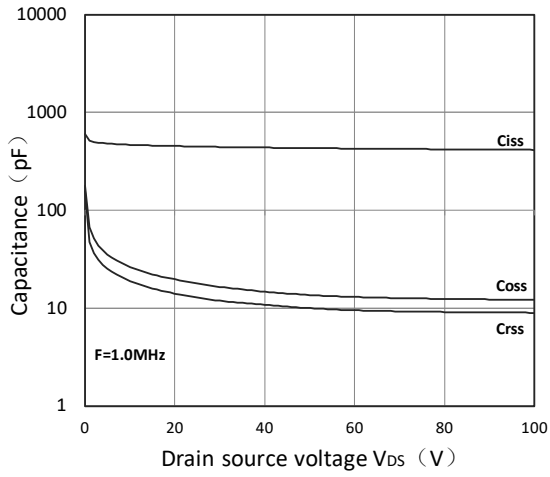


Figure 7. Capacitance Characteristics

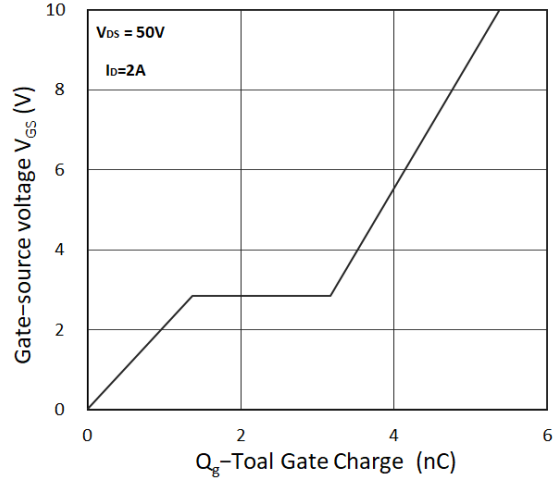
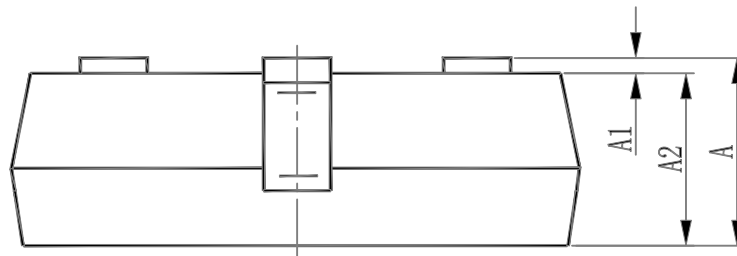


Figure 8. Gate Charge Characteristics

Package Information:SOT-23-3L



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