



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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristic</b>						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	100	110	-	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 100V, V_{GS} = 0V$	-	-	1	$\mu A$
$I_{GSS}$	Gate to Body Leakage Current	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	$\pm 100$	nA
<b>On Characteristics</b> <sup>note3</sup>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	2.0	3.0	V
$R_{DS(on)}$	Static Drain-Source On-Resistance <sup>note2</sup>	$V_{GS} = 10V, I_D = 3A$	-	95	125	m $\Omega$
<b>Dynamic Characteristics</b> <sup>note4</sup>						
$C_{iss}$	Input Capacitance	$V_{DS} = 50V, V_{GS} = 0V,$ $f = 1.0MHz$	-	196	-	pF
$C_{oss}$	Output Capacitance		-	25.9	-	pF
$C_{riss}$	Reverse Transfer Capacitance		-	21.4	-	pF
$Q_g$	Total Gate Charge	$V_{DS} = 50V, I_D = 3A,$ $V_{GS} = 10V$	-	4.3	-	nC
$Q_{gs}$	Gate-Source Charge		-	3.5	-	nC
$Q_{gd}$	Gate-Drain("Miller") Charge		-	3.1	-	nC
<b>Switching Characteristics</b> <sup>note4</sup>						
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 50V, I_{DS}=3A$ $R_G = 2\Omega, V_{GEN} = 10V$	-	14.7	-	ns
$t_r$	Turn-On Rise Time		-	3.5	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	20.9	-	ns
$t_f$	Turn-Off Fall Time		-	2.7	-	ns
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
$I_S$	Maximum Continuous Drain to Source Diode Forward Current <sup>note2</sup>		-	-	5.2	A
$I_{SM}$	Maximum Pulsed Drain to Source Diode Forward Current		-	-	12	A
$V_{SD}$	Drain to Source Diode Forward Voltage <sup>note3</sup>	$V_{GS} = 0V, I_S = 3A$	-	-	1.3	V
$t_{rr}$	Body Diode Reverse Recovery Time	$V_{GS} = 0V, I_F = 3A,$ $di/dt = 100A/\mu s$	-	32.1	-	ns
$Q_{rr}$	Body Diode Reverse Recovery Time Charge		-	39.4	-	nC
$I_{rrm}$	Peak Reverse Recovery Current		-	2.1	-	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production
5.  $V_{DD}=50$  V,  $R_G=50$   $\Omega$ ,  $L=0.3$  mH, starting  $T_J=25$   $^\circ\text{C}$

**Typical Characteristics**

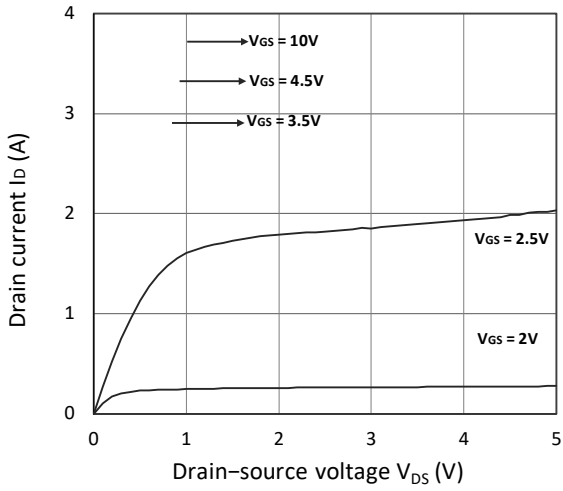


Figure 1. Output Characteristics

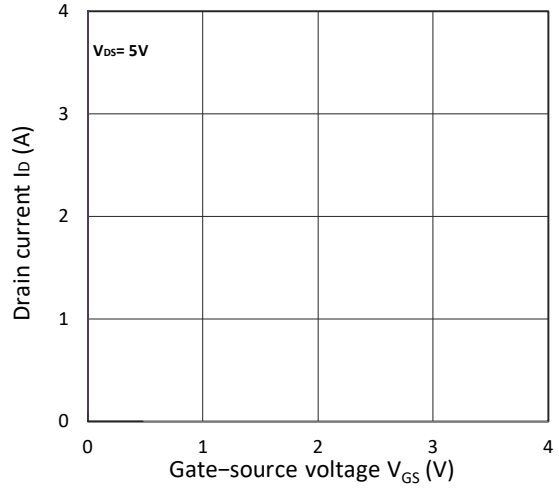


Figure 2. Transfer Characteristics

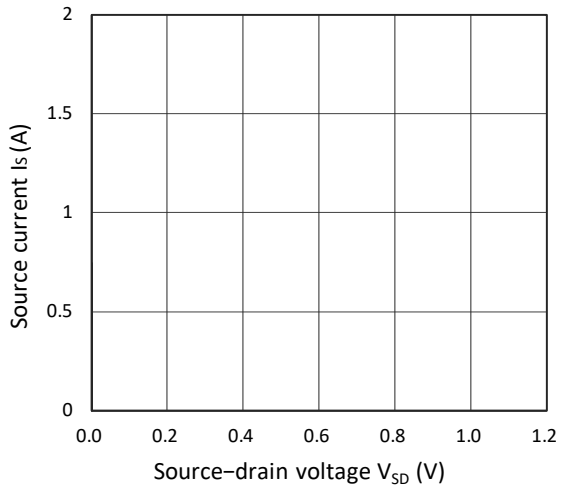


Figure 3. Forward Characteristics of Reverse

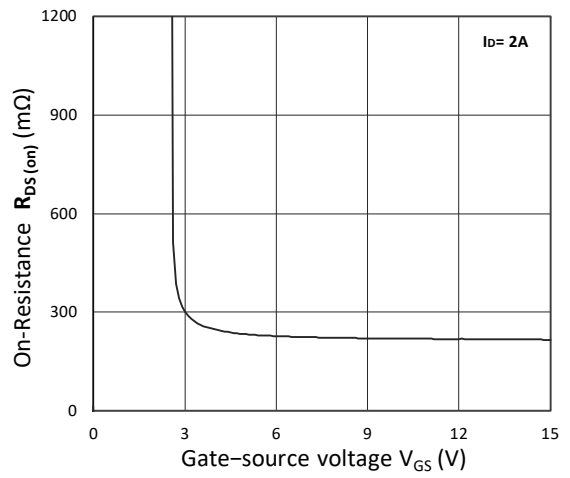


Figure 4.  $R_{DS(ON)}$  vs.  $V_{GS}$

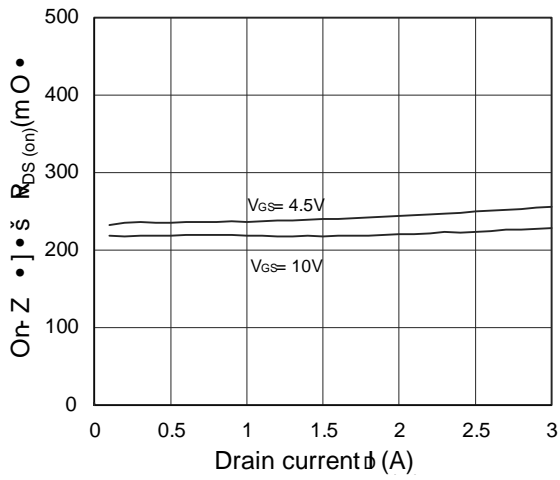


Figure 5.  $R_{DS(ON)}$  vs.  $I_D$

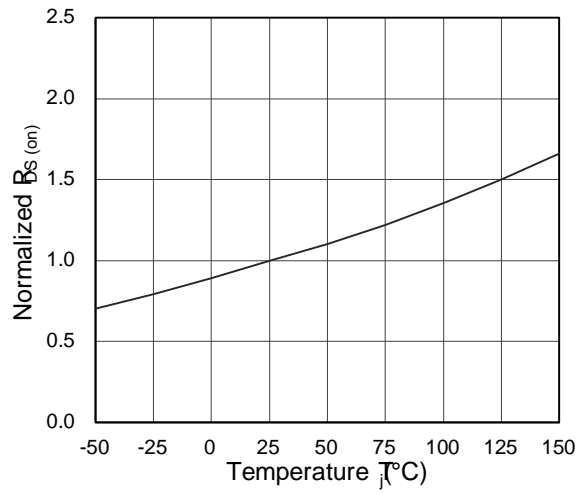


Figure 6. Normalized  $R_{DS(on)}$  vs. Temperature

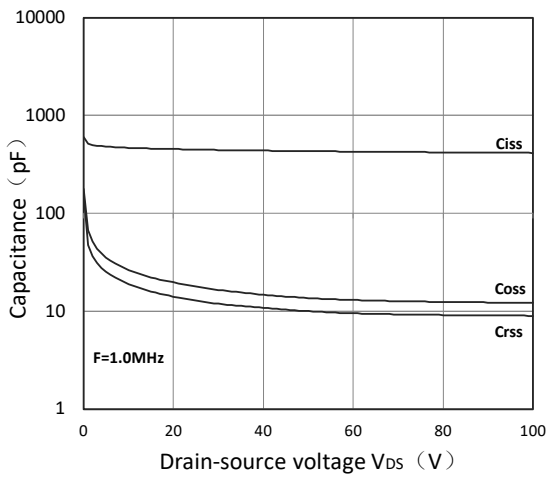


Figure 7. Capacitance Characteristics

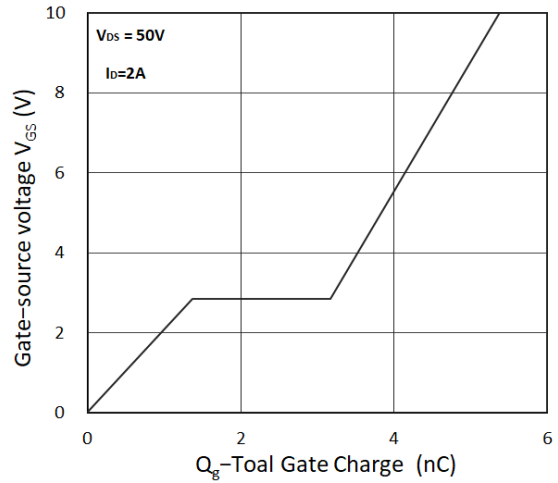
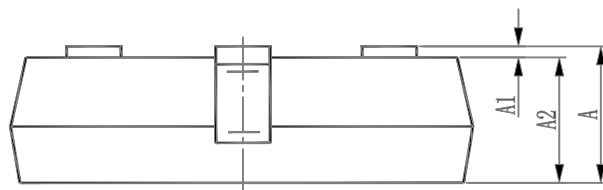


Figure 8. Gate Charge Characteristics

# Package Mechanical Data: SOT-23-3L



6 \ P E R O	' L P H Q V L R Q V , Q 0 L O O L P H W H U V L P H Q V L R Q V , Q , Q F K H V	0 L Q	0 D [	0 L Q	0 D [
\$					
\$					
\$					
E					
F					
.					
(					
(					
H		% 6 &		% 6 &	
H					
/					
		<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>