



**Electrical Characteristics** (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	<b>BV<sub>DSS</sub></b>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250μA	20	-	-	V
Gate Leakage Current	<b>I<sub>GSS</sub></b>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0 V	-	-	±100	nA
Drain Cut-off Current	<b>I<sub>DSS</sub></b>	V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0 V	-	-	1	μA
Gate Threshold Voltage	<b>V<sub>GS(th)</sub></b>	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 250μA	0.45	0.7	1	V
Drain-Source On-State Resistance <sup>3</sup>	<b>R<sub>DS(on)</sub></b>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> =5A	-	8.8	13	mΩ
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 4.7A	-	12	20	
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	<b>C<sub>iss</sub></b>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 10V, f = 1MHz	-	700	-	pF
Output Capacitance	<b>C<sub>oss</sub></b>		-	120	-	
Reverse Transfer Capacitance	<b>C<sub>rss</sub></b>		-	105	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total Gate Charge	<b>Q<sub>g</sub></b>	V <sub>GS</sub> = 4.5V, V <sub>DS</sub> = 10V, I <sub>D</sub> = 5A	-	10.5	-	nC
Gate-Source Charge	<b>Q<sub>gs</sub></b>		-	2	-	
Gate-Drain Charge	<b>Q<sub>gd</sub></b>		-	2.5	-	
Turn-On Time	<b>t<sub>d(on)</sub></b>	V <sub>GEN</sub> = 5V, V <sub>DD</sub> = 10V, I <sub>D</sub> = 5A, R <sub>G</sub> = 3Ω,	-	10	-	ns
Rise Time	<b>t<sub>r</sub></b>		-	20	-	
Turn-Off Time	<b>t<sub>d(off)</sub></b>		-	32	-	
Fall Time	<b>t<sub>f</sub></b>		-	12	-	
<b>Source-Drain Diode Characteristics</b>						
Body Diode Voltage <sup>3</sup>	<b>V<sub>SD</sub></b>	I <sub>S</sub> =4A, V <sub>GS</sub> = 0V	-	-	1.2	V
Continuous Source Current	<b>I<sub>S</sub></b>		-	-	30	A

**Notes:**

1. Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°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≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Typical Characteristics

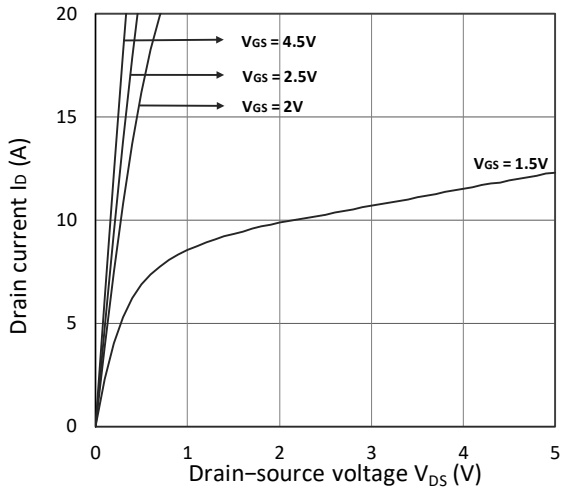


Figure 1. Output Characteristics

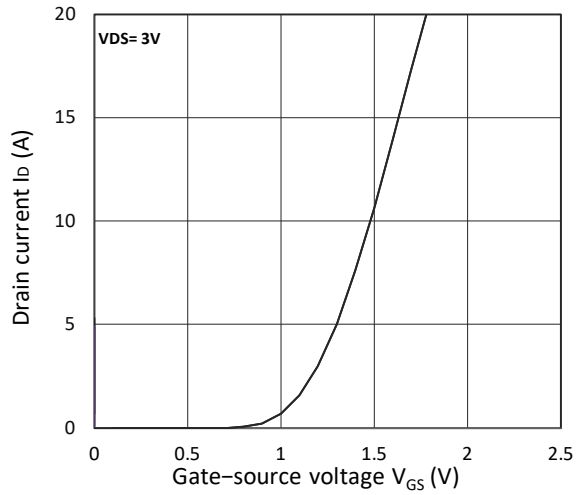


Figure 2. Transfer Characteristics

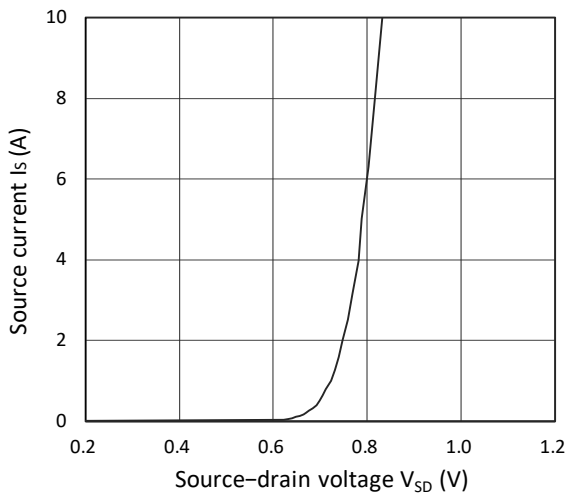


Figure 3. Forward Characteristics of Reverse

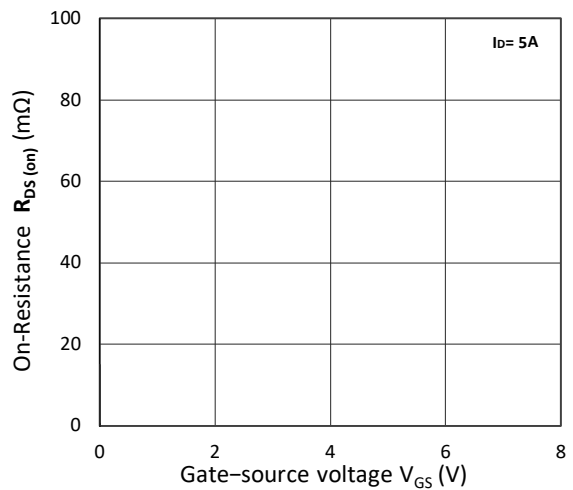


Figure 4.  $R_{DS(on)}$  vs.  $V_{GS}$

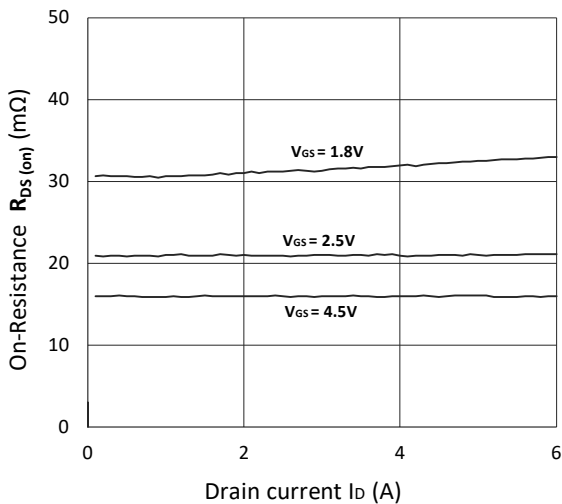


Figure 5.  $R_{DS(on)}$  vs.  $I_D$

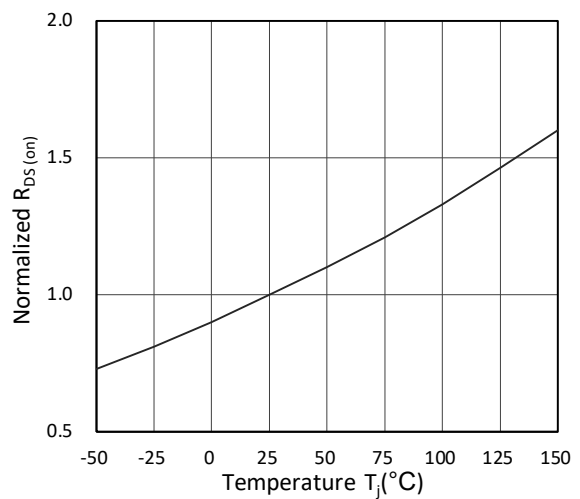


Figure 6. Normalized  $R_{DS(on)}$  vs. Temperature

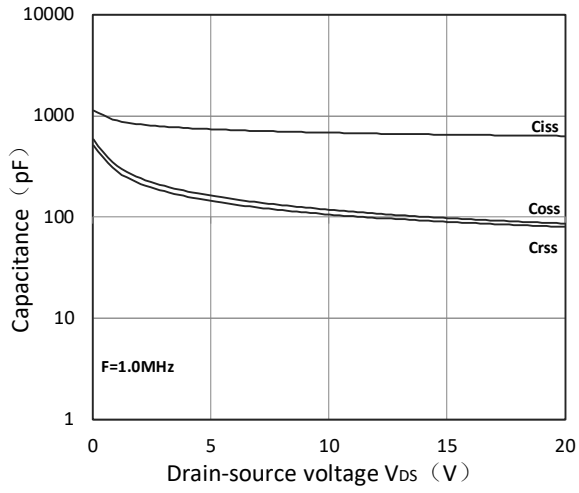


Figure 7. Capacitance Characteristics

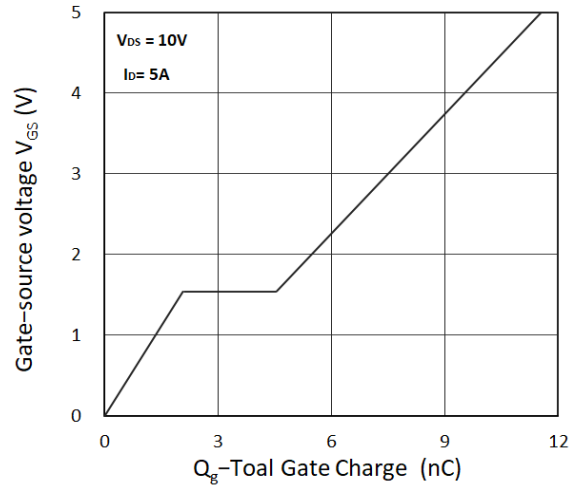


Figure 8. Gate Charge Characteristics

Package Information:TO-252-3L

6\PERO	'LPHQVLRQV ,Q 0LOOLPHWHUV		'LPHQVLRQV ,Q ,QFKHV	
	0LQ	0D[	0LQ	0D[
\$				
\$				
E				
F				
'				
'				
'	7<3		7<3	
(				
H				
/				
/	7<3		7<3	
/				
/	7<3		7<3	
/				
-				
	e	e	e	e
K				
9	7<3		7<3	