





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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	I <sub>D</sub> = 250μA, V <sub>GS</sub> = 0V	30	-	-	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V	-	-	1.0	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
<b>On Characteristics</b>						
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.0	1.9	2.5	V
R <sub>DS(ON)</sub>	Static Drain-Source ON-Resistance <sup>(4)</sup>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 30A	-	2.6	3.4	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 20A	-	4.9	6.4	mΩ
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz	-	3650	-	pF
C <sub>oss</sub>	Output Capacitance		-	494	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		-	366	-	pF
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> = 0 to 10V V <sub>DD</sub> = 30V, I <sub>D</sub> = 15A	-	67	-	nC
Q <sub>gs</sub>	Gate Source Charge		-	11	-	nC
Q <sub>gd</sub>	Gate Drain("Miller") Charge		-	19	-	nC
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-On DelayTime	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 15V I <sub>D</sub> = 30A, R <sub>GEN</sub> = 3Ω	-	10	-	ns
t <sub>r</sub>	Turn-On Rise Time		-	19	-	ns
t <sub>d(off)</sub>	Turn-Off DelayTime		-	50	-	ns
t <sub>f</sub>	Turn-Off Fall Time		-	20	-	ns
<b>Drain-Source Diode Characteristics and Max Ratings</b>						
I <sub>S</sub>	Maximum Continuous Drain to Source Diode Forward Current		-	-	150	A
I <sub>SM</sub>	Maximum Pulsed Drain to Source Diode Forward Current		-	-	600	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage	V <sub>GS</sub> = 0V, I <sub>S</sub> = 30A	-	-	1.2	V
t <sub>rr</sub>	Body Diode Reverse Recovery Time	I <sub>F</sub> = 20A, di/dt = 100A/μs	-	18	-	ns
Q <sub>rr</sub>	Body Diode Reverse Recovery Charge		-	6	-	nC

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
  2. E<sub>AS</sub> condition: Starting T<sub>J</sub> = 25°C, V<sub>DD</sub> = 15V, V<sub>G</sub> = 10V, R<sub>G</sub> = 25mΩ, L = 0.5mH, I<sub>AS</sub> = 29A.
  3. R<sub>JA</sub> is measured with the device mounted on a 1inch<sup>2</sup> pad of 2oz copper FR4 PCB.
  4. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 0.5%.

## Typical Performance Characteristics

Figure 1: Output Characteristics

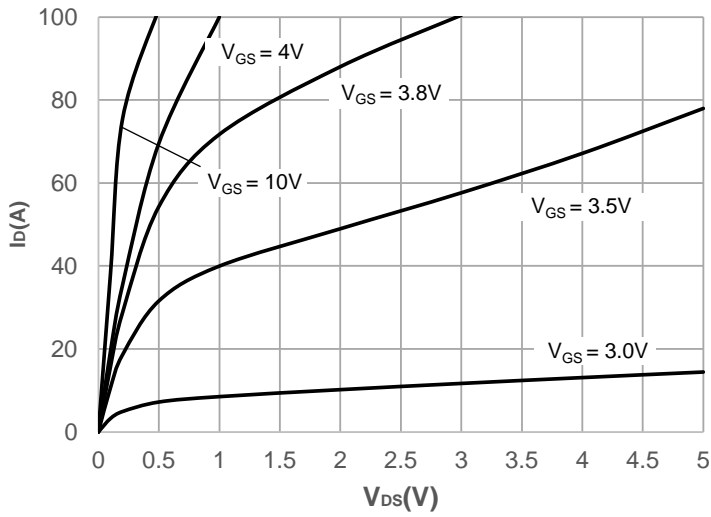


Figure 2: Typical Transfer Characteristics

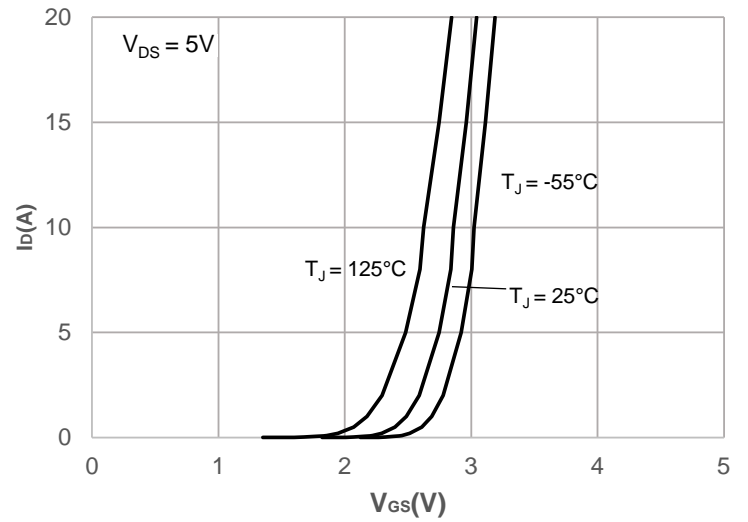


Figure 3: On-resistance vs. Drain Current

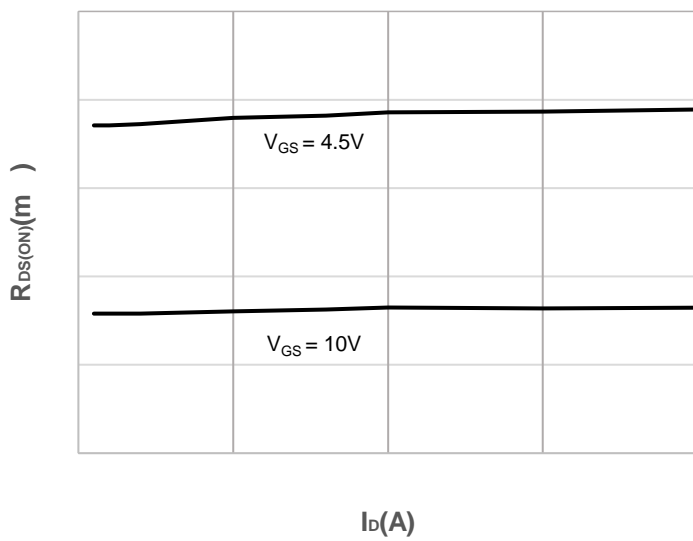


Figure 4: Body Diode Characteristics

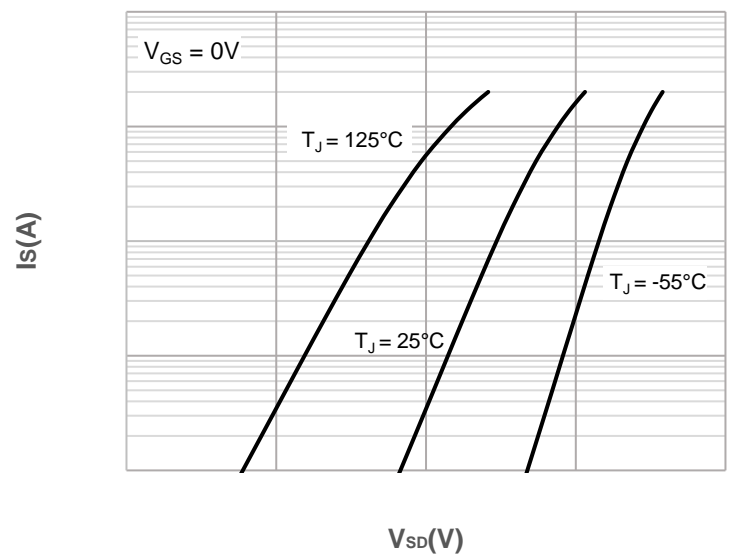


Figure 5: Gate Charge Characteristics

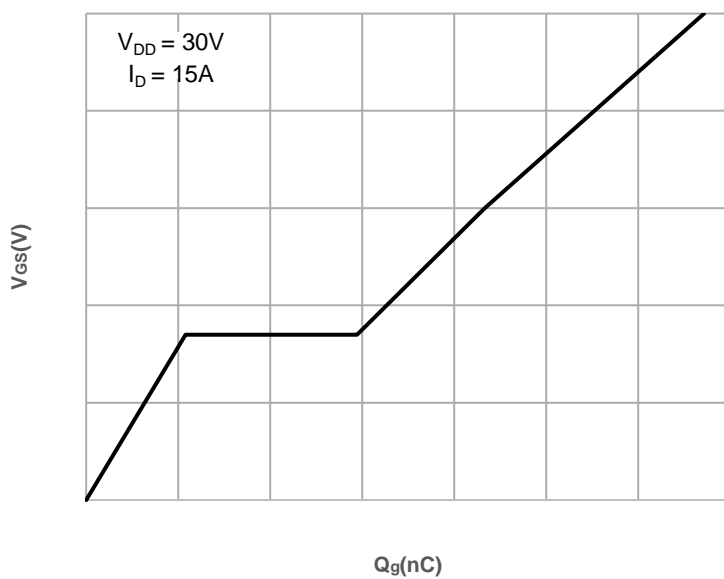
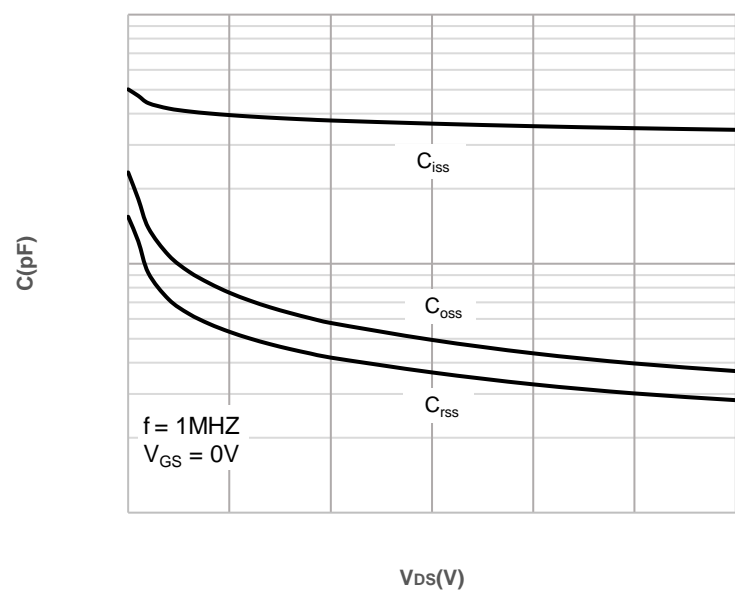


Figure 6: Capacitance Characteristics







## Package Mechanical Data(TO-252-3L)



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