



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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>Off Characteristics</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 uA	20	--	--	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = 0 V	--	--	1	uA
		V <sub>DS</sub> = 16V, T <sub>C</sub> = 125°C	--	--	10	uA
I <sub>GSSF</sub>	Gate-Body Leakage Current, Forward	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 0 V	--	--	100	nA
I <sub>GSSR</sub>	Gate-Body Leakage Current, Reverse	V <sub>GS</sub> = -10 V, V <sub>DS</sub> = 0 V	--	--	-100	nA

**On Characteristics**

V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250 uA	0.45	0.7	1.1	V
R <sub>DS(on)</sub>	Static Drain-Source On-Resistance	V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 3.5A	--	22	30	mΩ
		V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 2.0A	-	29	37	

**Dynamic Characteristics**

C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 0 V, f = 1.0 MHz	--	228	-	pF
C <sub>oss</sub>	Output Capacitance		--	37	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	34	-	pF

**Switching Characteristics**

t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>GS</sub> =5 V, V <sub>DS</sub> =10V, I <sub>D</sub> =3A, R <sub>G</sub> = 6 Ω ,R <sub>L</sub> = 2.7 Ω	--	4.5	--	ns
t <sub>r</sub>	Turn-On Rise Time		--	31	--	ns
t <sub>d(off)</sub>	Turn-Off Delay Time		--	12	--	ns
t <sub>f</sub>	Turn-Off Fall Time		--	4.0	--	ns
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> = 10 V, I <sub>D</sub> =3A, V <sub>GS</sub> = 5V	--	6.23	--	nC
Q <sub>gs</sub>	Gate-Source Charge		--	6	--	nC
Q <sub>gd</sub>	Gate-Drain Charge		--	0.5	--	nC

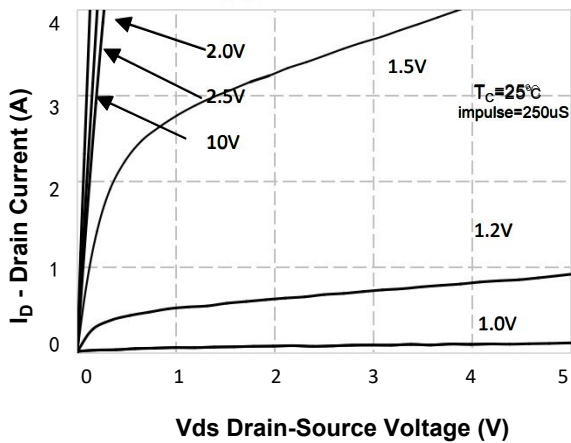
**Drain-Source Diode Characteristics and Maximum Ratings**

I <sub>S</sub>	Maximum Continuous Drain-Source Diode Forward Current	--	--	5.0	A
I <sub>SM</sub>	Maximum Pulsed Drain-Source Diode Forward Current	--	--	10.5	A
V <sub>SD</sub>	Drain to Source Diode Forward Voltage, V <sub>GS</sub> = 0V, I <sub>SD</sub> = 3.5A, T <sub>J</sub> = 25°C	--	--	1.2	V

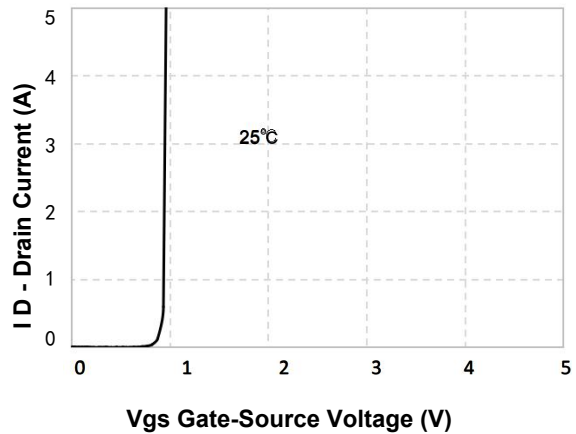
**Notes:**

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. Device mounted on FR-4 PCB, 1inch x 0.85inch x 0.062 inch
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

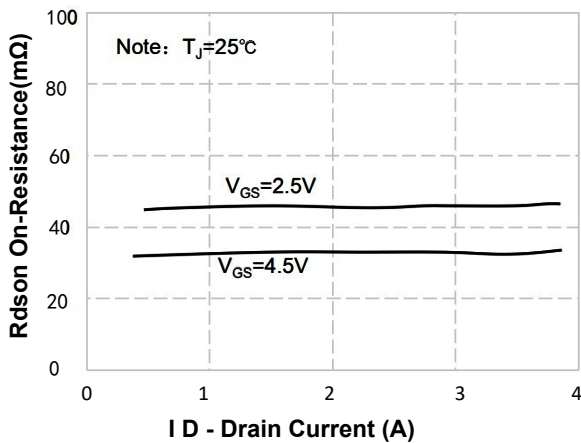
### Typical Performance Characteristics



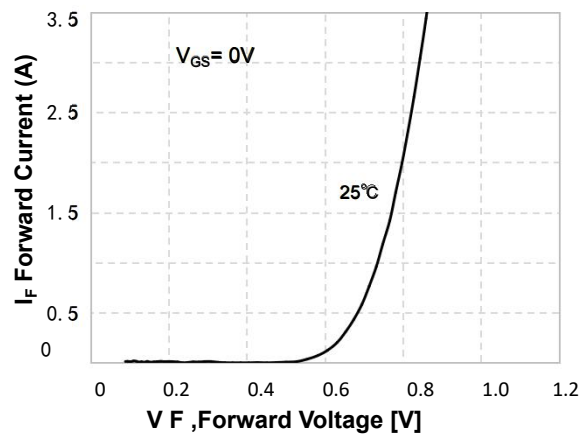
**Figure 1. On-Region Characteristics**



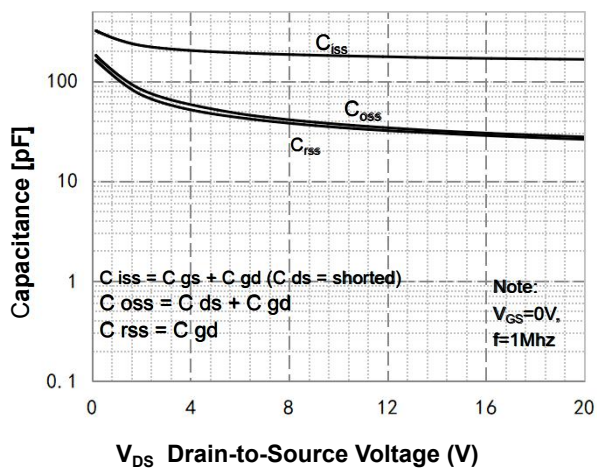
**Figure 2. Transfer Characteristics**



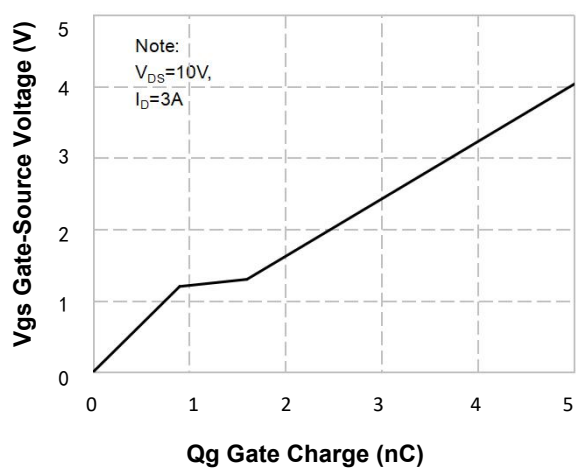
**Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage**



**Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature**



**Figure 5. Capacitance Characteristics**



**Figure 6. Gate Charge Characteristics**

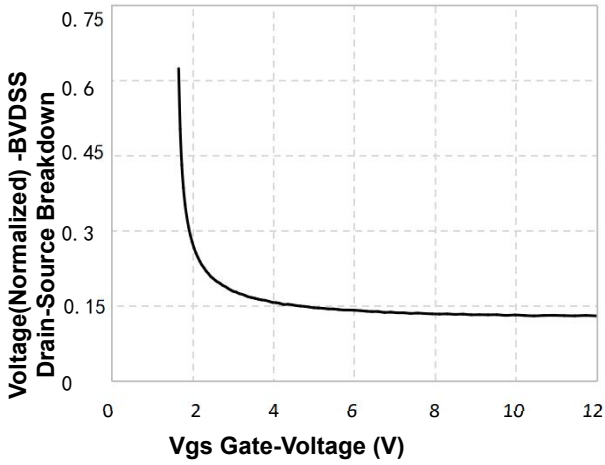


Figure 7. Breakdown Voltage Variation vs Gate-Voltage

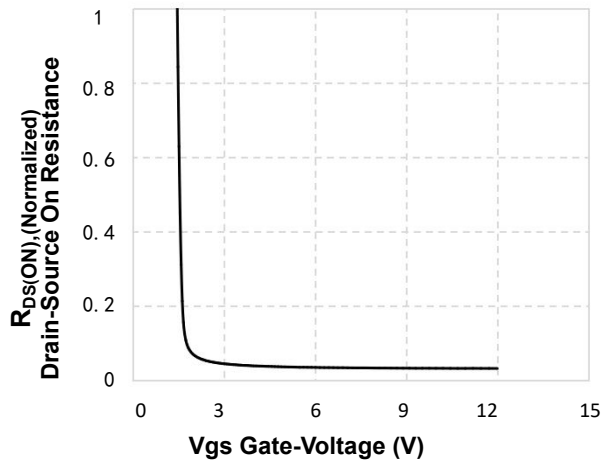


Figure 8. On-Resistance Variation vs Gate Voltage

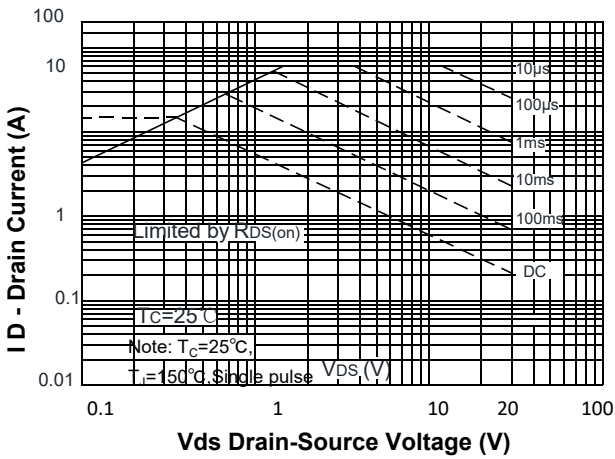


Figure 9. Maximum Safe Operating Area

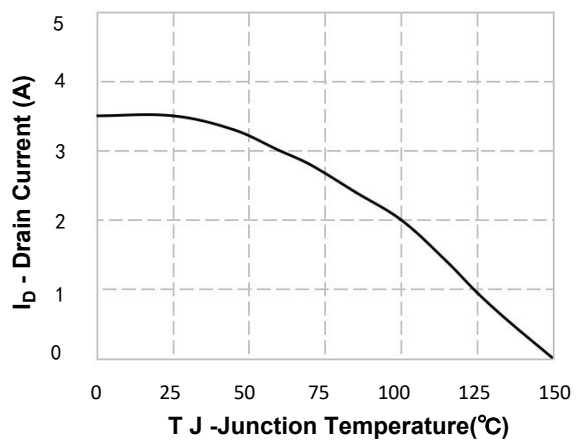


Figure 10. Maximum PContinuous Drain Current vs Case Temperature

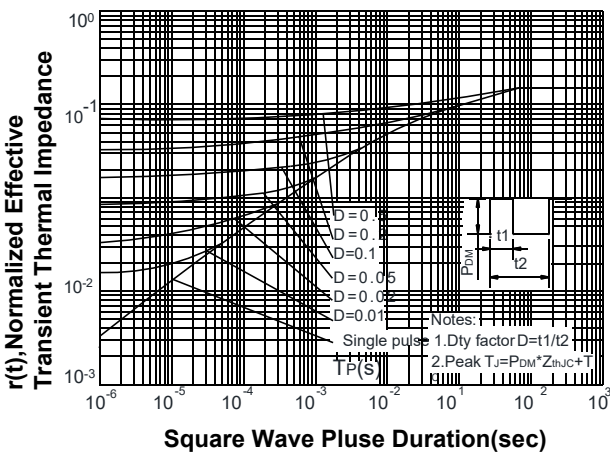


Figure 11. Transient Thermal Response Curve

Package Mechanical Data SOT23

^Çu }o	]u v•]}v• ]v D]oo]u š Œ•	
	D/EX	D yX
	ìXõìì	íXíñì
í	ìXììì	ìXíìì
î	ìXõìì	íXìñì
	ìXììì	ìXñìì
	ìXìõì	ìXíñì
	îXõìì	ìXììì
	íXîìì	íXõìì
í	îXîñì	îXññì
	ìXõñìdzW	
í	ìXõìì	îXììì
>	ìXññìZ &	
>í	ìXììì	ìXñìì
}	ì£	õ£