



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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
<b>Off Characteristics</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250 μA	-60	---	---	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>GS</sub> =0V, V <sub>DS</sub> =-60V	---	---	-1	μA
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0A	---	---	±100	nA
<b>On Characteristics</b>						
V <sub>GS(th)</sub>	GATE-Source Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250 μA	-1	-1.8	-2.5	V
R <sub>DS(on)</sub>	Drain-Source On Resistance <sup>②</sup>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A	---	24	29	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A	---	30	39	
G <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =-5V, I <sub>D</sub> =-15A	---	35	---	S
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1MHz	---	2025	---	pF
C <sub>oss</sub>	Output Capacitance		---	133	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	97	---	
<b>Switching Characteristics</b>						
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =-30V R <sub>GEN</sub> =3Ω, V <sub>GS</sub> =-10V	---	12	---	ns
t <sub>r</sub>	Rise Time		---	9	---	ns
t <sub>d(off)</sub>	Turn-Off Delay Time		---	63	---	ns
t <sub>f</sub>	Fall Time		---	13	---	ns
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-30V, I <sub>D</sub> =-20A	---	53	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	10	---	nC
Q <sub>gd</sub>	Gate-Drain "Miller" Charge		---	12	---	nC
<b>Drain-Source Diode Characteristics</b>						
V <sub>SD</sub>	Source-Drain Diode Forward Voltage <sup>3</sup>	V <sub>GS</sub> =0V, I <sub>S</sub> =-15A, T <sub>J</sub> =25°C	---	-0.88	-1.2	V
I <sub>S</sub>	Continuous Drain Current	V <sub>D</sub> =V <sub>G</sub> =0V	---	-9	---	V
I <sub>SM</sub>	Pulsed Drain Current	V <sub>D</sub> =V <sub>G</sub> =0V	---	-5.2	---	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub>  =-20A, V <sub>GS</sub> =0V	---	26	---	ns
Q <sub>rr</sub>	Reverse Recovery Charge	.dI/dt=-500 \$ V	---	29	---	nc

Notes:

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature.
- 2.E<sub>AS</sub> condition: T<sub>J</sub>=25°C, V<sub>DD</sub>=40V, V<sub>G</sub>=-10V, R<sub>g</sub>=25Ω, L=0.5mH.
- 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Characteristics: ( $T_c=25^\circ\text{C}$  unless otherwise noted)

**Figure 1. Output Characteristics**

**Figure 2. Transfer Characteristics**

**Figure 3. Power Dissipation**

**Figure 4. Drain Current**

**Figure 5.  $BV_{DSS}$  vs Junction Temperature**

**Figure 6.  $R_{DS(ON)}$  vs Junction Temperature**

**Figure 7. Gate Charge Waveforms**

**Figure 8. Capacitance**

**Figure 9. Body-Diode Characteristics**

**Figure 10. Maximum Safe Operating Area**

Package Mechanical Data :SOP-8L

