



## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

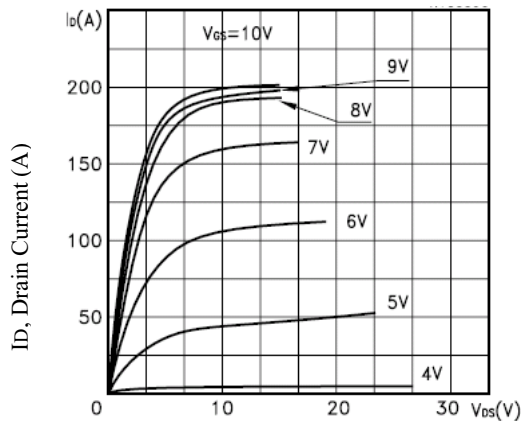
Parameter	Symbol	Condition	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	75			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			20	μA
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	2		4	V
Drain-Source On-State Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =48A		9	11	mΩ
Forward Transconductance	g <sub>FS</sub>	V <sub>GS</sub> =25V, I <sub>D</sub> =30A		50		S
DAYNAMIC CHARACTERISTICS						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V f=1.0MHz		3300		pF
Output Capacitance	C <sub>OSS</sub>			530		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			80		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t <sub>D(ON)</sub>	V <sub>DD</sub> =38V I <sub>D</sub> =48A, V <sub>GEN</sub> =10V R <sub>L</sub> =10ohm R <sub>GEN</sub> =4.7ohm		12		ns
Rise Time	t <sub>r</sub>			79		ns
Turn-Off Delay Time	t <sub>D(OFF)</sub>			80		ns
Fall Time	t <sub>f</sub>			52		ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =60V, I <sub>D</sub> =48A V <sub>GS</sub> =10V R <sub>GEN</sub> =4.7ohm		90	140	nC
Gate-Source Charge	Q <sub>gs</sub>			20	35	nC
Gate-Drain Charge	Q <sub>gd</sub>			30	45	nC

## ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

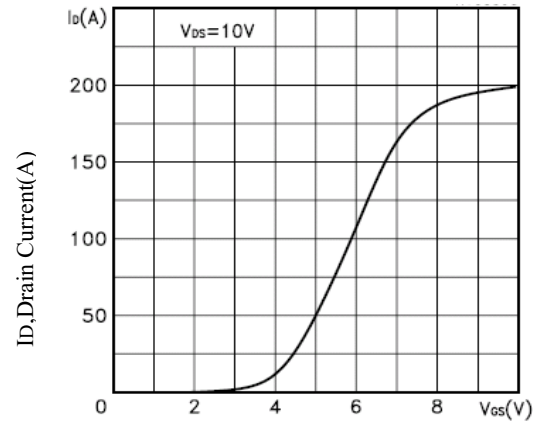
Parameter	Symbol	Condition	Min	Typ	Max	Unit
DRAIN-SOURCE DIODE CHARACTERISTICS						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =60A		1.5		V

### Notes

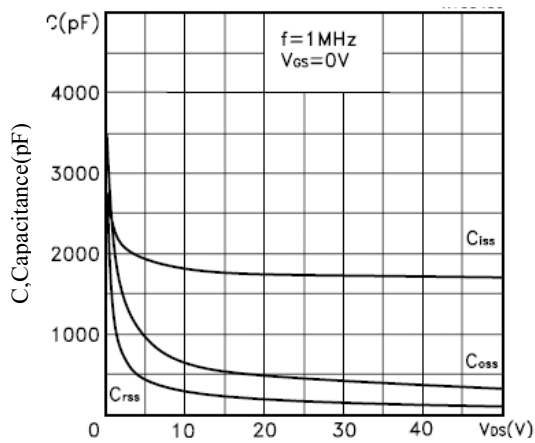
- Surface Mounted on FR4 Board,  $t \leq 10\text{sec}$
- Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$
- Guaranteed by design, not subject to production testing.



V<sub>DS</sub>, Drain-to-Source Voltage (V)  
Figure 1. Output Characteristics



V<sub>GS</sub>, Gate-to-source Voltage (V)  
Figure 2. Transfer Characteristics



V<sub>GS</sub>, Drain-to Source Voltage

Figure3. Capacitance

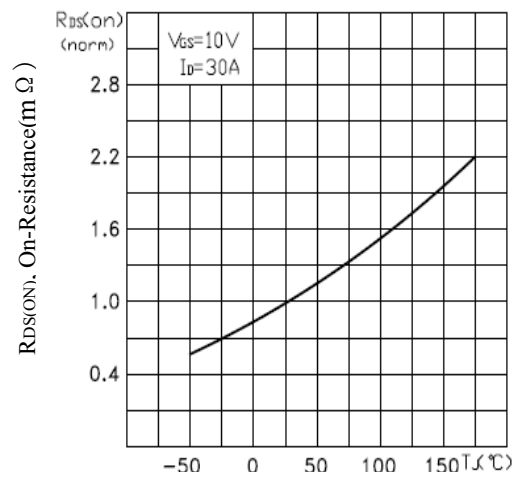
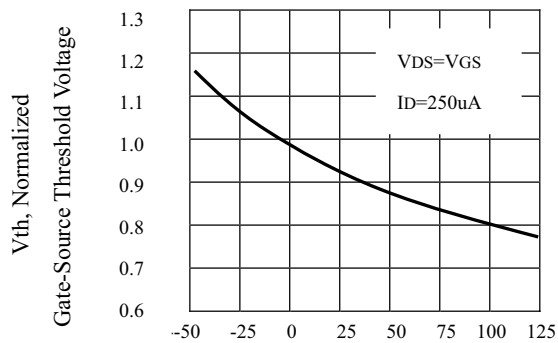
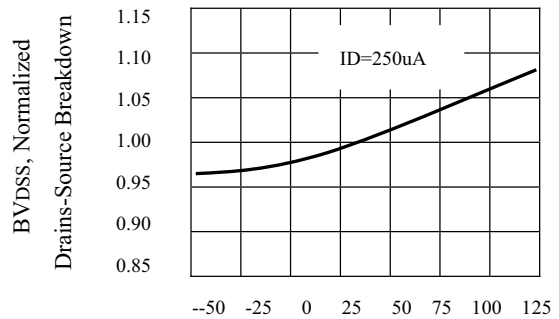


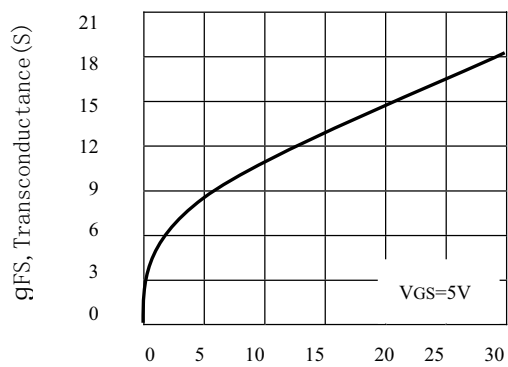
Figure4. On-Resistance Variation with Temperature



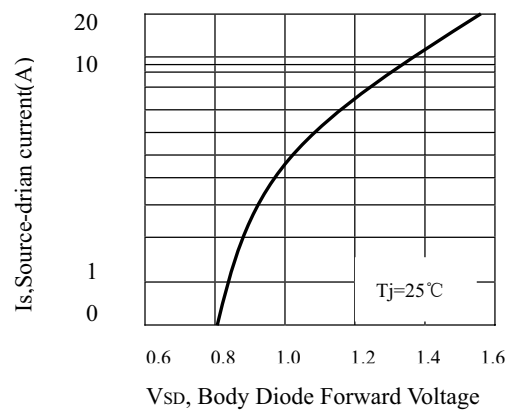
Tj, Junction Temperature(°C)  
**Figure5. Gate Threshold Variation With Temperature**



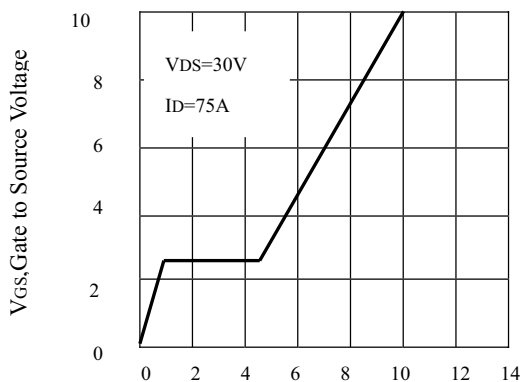
Tj, Junction Temperature (°C)  
**Figure6. Breakdown Voltage Variation With Temperature**



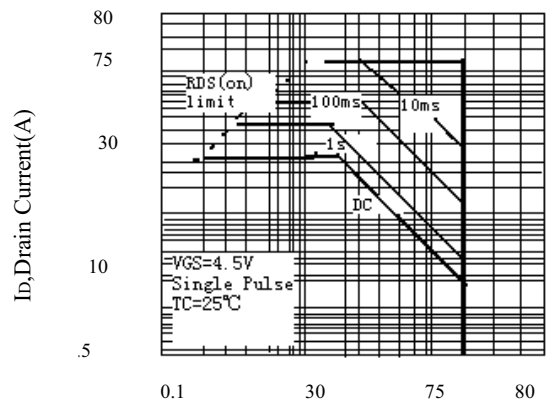
Ids, Drain-Source Current (A)  
**Figure7. Transconductance Variation With Drain Current**



Tj=25°C  
**Figure8. Body Diode Forward Voltage Variation with Source Current**



Qg, Total Gate Charge (nC)  
**Figure9. Gate Charge**



VDS, Drain-Source Voltage(V)  
**Figure10. Maximum Safe Operating Area**