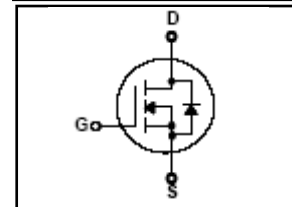
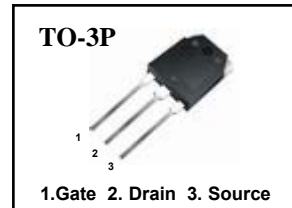


### ■ FEATURES

- 60V/210A  
RDS(ON)= 4mΩ (Max)@ VGS=10V
  - Lead free and Green Device Available
  - Low Rds-on to Minimize Conductive Loss
  - High avalanche Current
- 
- Application
  - Power Supply
  - UPS
  - Battery Management System

$BV_{DSS} = 60\text{ V}$   
 $R_{DS(on) \text{ typ}} = 3\text{ m}\Omega$   
 $I_D = 210\text{ A}$



### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Maximum	Unit
V <sub>DSS</sub>	Drain-to-Source Voltage	60	V
V <sub>GSS</sub>	Gate-to-Source Voltage	±25	V
I <sub>D</sub> <sup>3</sup>	Continuous Drain Current	T <sub>C</sub> =25°C	210
		T <sub>C</sub> =100°C	130
I <sub>DP</sub> <sup>4</sup>	Pulsed Drain Current	T <sub>C</sub> =25°C	A
I <sub>AS</sub> <sup>5</sup>	Avalanche Current	40	
EAS <sup>5</sup>	Avalanche energy	800	mJ
PD	Maximum Power Dissipation	T <sub>C</sub> =25°C	220
		T <sub>C</sub> =100°C	110
T <sub>J</sub> , T <sub>STG</sub>	Junction & Storage Temperature Range	-55~175	°C

### Thermal Characteristics

Symbol	Parameter	Typical	Unit
R <sub>θjc</sub>	Thermal Resistance-Junction to Case	0.68	°C/W
R <sub>θja</sub>	Thermal Resistance-Junction to Ambient	62.5	

**Electrical Characteristics** (TA=25°C unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
<b>Static Characteristics</b>						
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	60	—	—	V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =48V, V <sub>GS</sub> =0V	—	—	1	uA
		T <sub>J</sub> =125°C	—	—	20	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	2	3	4	V
I <sub>GSS</sub>	Gate Leakage Current	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0V	—	—	±100	nA
R <sub>DS(on)</sub> <sup>1</sup>	Drain-Source On-Resistance	V <sub>GS</sub> =10V, I <sub>D</sub> =75A	—	3.0	4	mΩ
			—	—	—	
<b>Diode Characteristics</b>						
V <sub>SD</sub> <sup>1</sup>	Diode Forward Voltage	I <sub>SD</sub> =75A, V <sub>GS</sub> =0V	—	0.8	1.3	V
I <sub>S</sub> <sup>3</sup>	Diode Continuous Forward Current		—	—	50	A
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =75A, V <sub>DD</sub> =60V	—	48	—	nS
Q <sub>rr</sub>	Reverse Recovery Charge	di/dt=100A/us	—	72	—	nC
<b>Dynamic Characteristics<sup>2</sup></b>						
R <sub>G</sub>	Gate Resistance	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, Frequency=1MHz	—	2	—	Ω
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V, Frequency=1MHz	—	5800	—	pF
C <sub>oss</sub>	Output Capacitance		—	1020	—	
C <sub>rss</sub>	Reverse Transfer Capacitance		—	505	—	
t <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =30V, I <sub>D</sub> =75A, V <sub>GS</sub> =10V, R <sub>G</sub> =25Ω	—	29	—	nS
t <sub>r</sub>	Rise Time		—	19	—	
t <sub>d(off)</sub>	Turn-Off Delay Time		—	42	—	
t <sub>f</sub>	Fall Time		—	53	—	
<b>Gate Charge Characteristics<sup>2</sup></b>						
Q <sub>g</sub>	Total Gate Charge	V <sub>DS</sub> =48V, V <sub>GS</sub> =10V, I <sub>D</sub> =75A	—	135	—	nC
Q <sub>gs</sub>	Gate-to-Source Charge		—	23	—	
Q <sub>gd</sub>	Gate-to-Drain Charge		—	48	—	

Note: 1: Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

2: Guaranteed by design, not subject to production testing.

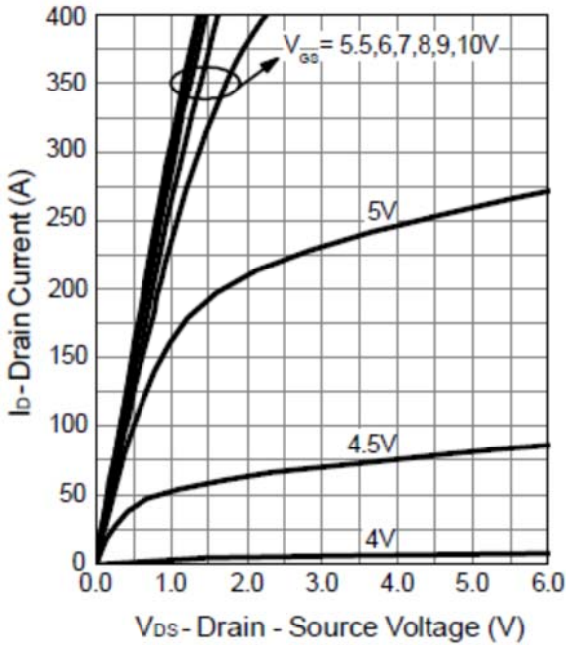
3: Package limitation current is 50A. Calculated continuous current based on maximum allowable junction temperature.

4: Repetitive rating, pulse width limited by max junction temperature.

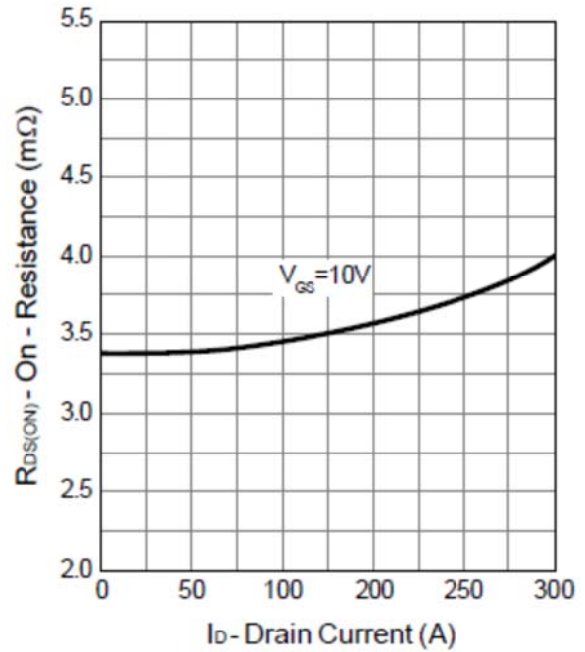
5: Starting T<sub>J</sub> = 25°C, L = 0.5mH, I<sub>AS</sub> = 82A.

**Typical Operating Characteristics**

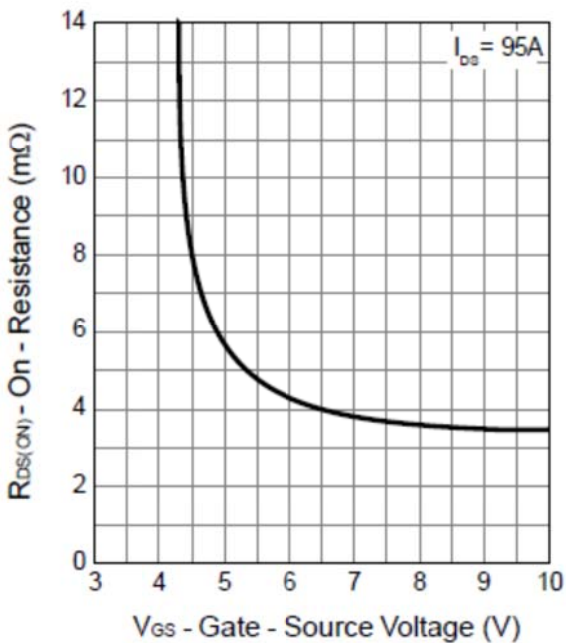
**Output Characteristics**



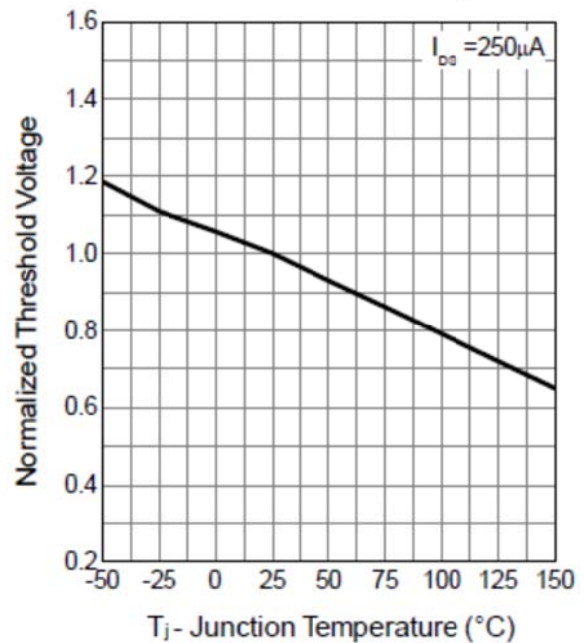
**Drain-Source On Resistance**



**Gate-Source On Resistance**

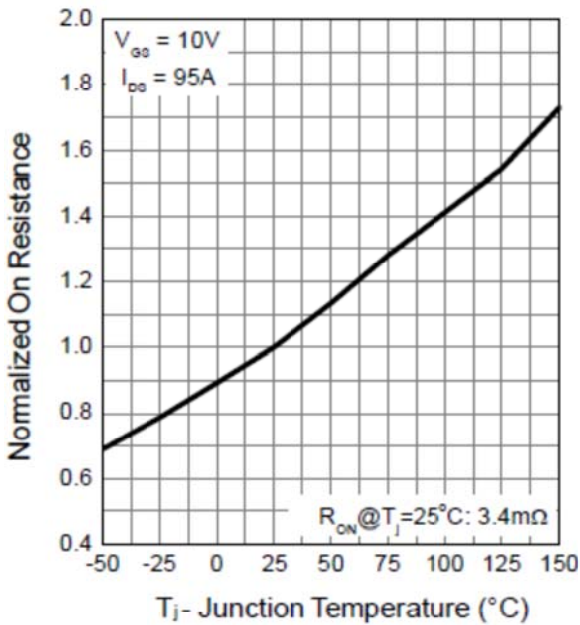


**Gate Threshold Voltage**

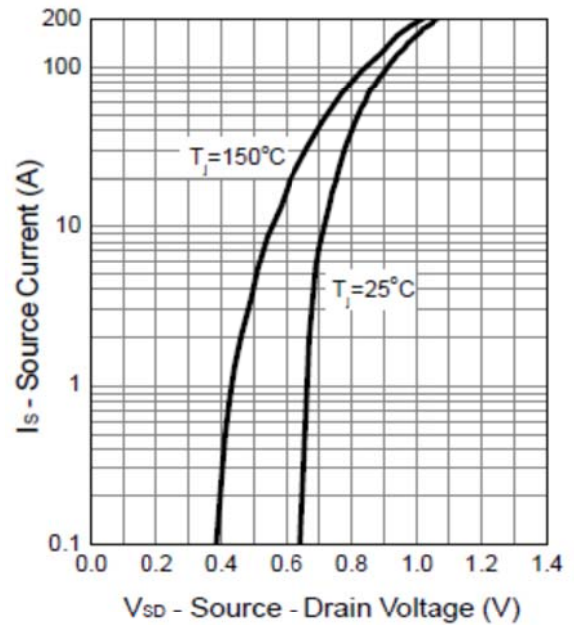


**Typical Operating Characteristics**

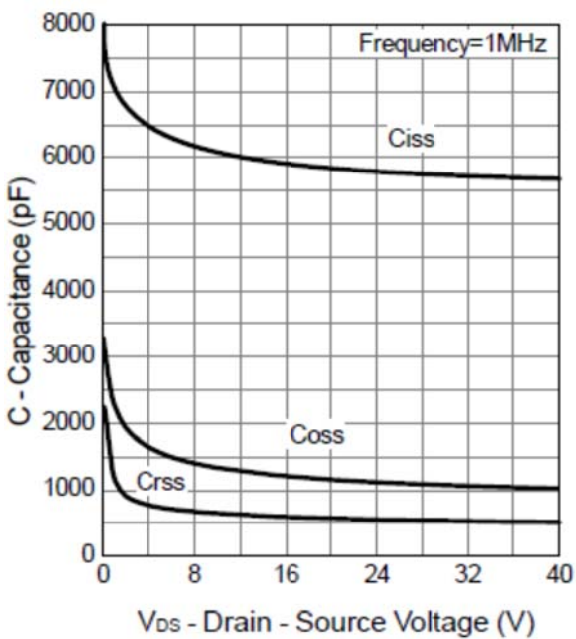
**Drain-Source On Resistance**



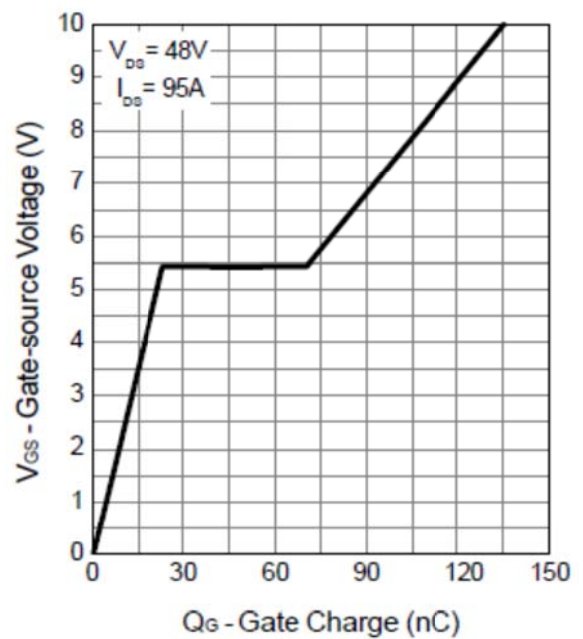
**Source-Drain Diode Forward**



**Capacitance**

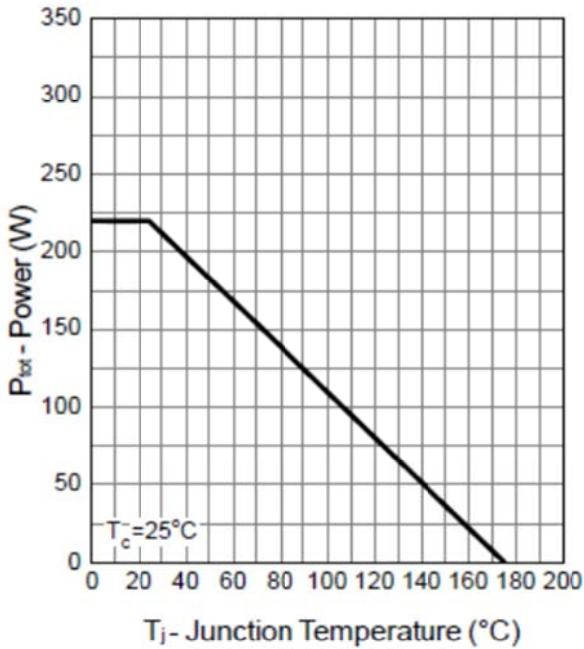


**Gate Charge**

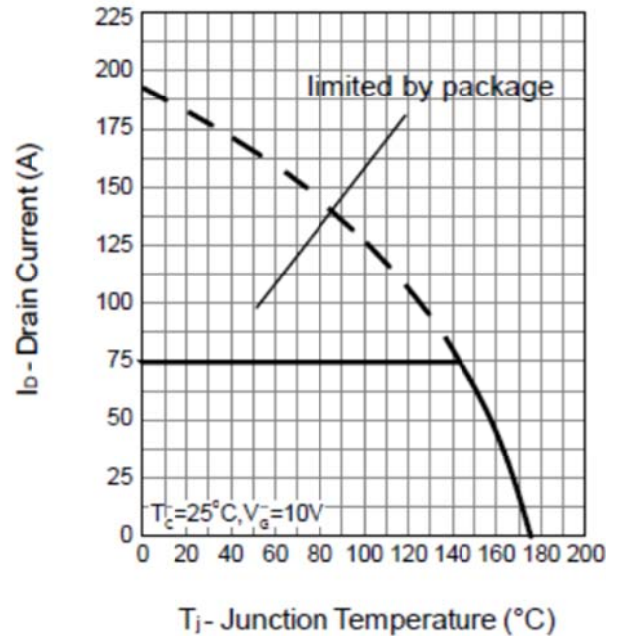


**Typical Operating Characteristics**

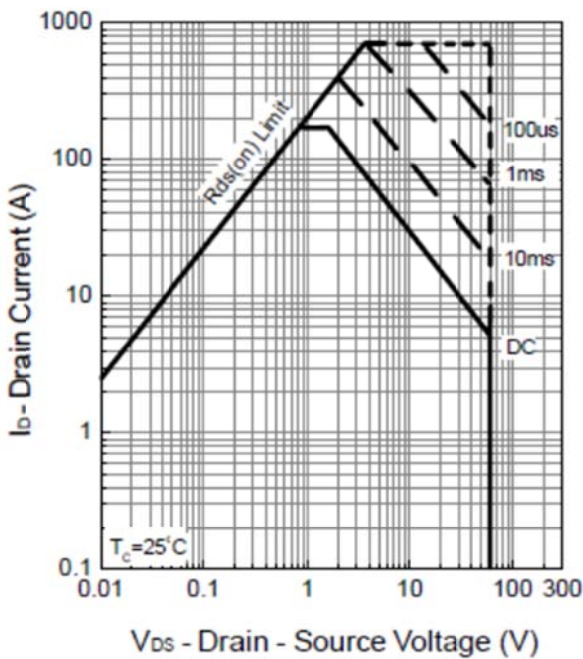
**Power Dissipation**



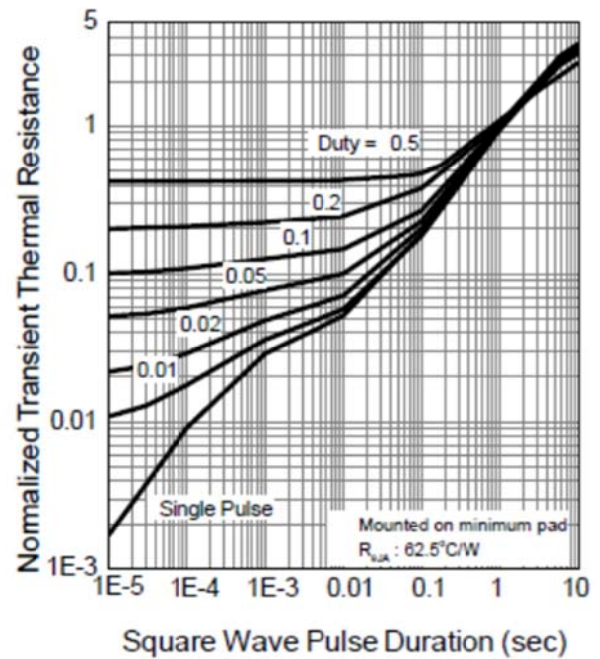
**Drain Current**



**Safe Operation Area**



**Thermal Transient Impedance**



Package Dimension

TO-3P

