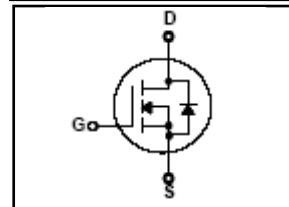
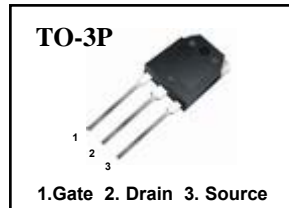


■ FEATURES

- 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

$BV_{DSS} = 60\text{ V}$
 $R_{DS(on) \text{ typ}} = 4\text{ m}\Omega$
 $I_D = 210\text{ A}$



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Maximum	Unit
V_{DSS}	Drain-to-Source Voltage	60	V
V_{GSS}	Gate-to-Source Voltage	± 25	V
I_D^3	Continuous Drain Current	$T_C=25^\circ\text{C}$	210
		$T_C=100^\circ\text{C}$	130
I_{DP}^4	Pulsed Drain Current	$T_C=25^\circ\text{C}$	A
I_{AS}^5	Avalanche Current	40	
E_{AS}^5	Avalanche energy	800	mJ
PD	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	220
		$T_C=100^\circ\text{C}$	110
T_J, T_{STG}	Junction & Storage Temperature Range	-55~175	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Typical	Unit
$R_{\theta jc}$	Thermal Resistance-Junction to Case	0.68	$^\circ\text{C/W}$
$R_{\theta ja}$	Thermal Resistance-Junction to Ambient	62.5	

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

Symbol	Parameter	Test Conditions	Min.	Typ	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60	—	—	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =48V, V _{GS} =0V	—	—	1	uA
		T _J =125°C	—	—	20	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	3	4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±25V, V _{DS} =0V	—	—	±100	nA
R _{DS(on)} ¹	Drain-Source On-Resistance	V _{GS} =10V, I _D =75A	—	3.2	4	mΩ
			—	—	—	
Diode Characteristics						
V _{SD} ¹	Diode Forward Voltage	I _{SD} =75A, V _{GS} =0V	—	0.8	1.3	V
I _S ³	Diode Continuous Forward Current		—	—	50	A
t _{rr}	Reverse Recovery Time	I _F =75A, V _{DD} =60V	—	48	—	nS
Q _{rr}	Reverse Recovery Charge	di/dt=100A/us	—	72	—	nC
Dynamic Characteristics²						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, Frequency=1MHz	—	2	—	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =25V, Frequency=1MHz	—	5800	—	pF
C _{oss}	Output Capacitance		—	1020	—	
C _{rss}	Reverse Transfer Capacitance		—	505	—	
t _{d(on)}	Turn-On Delay Time	V _{DD} =30V, I _D =75A, V _{GS} =10V, R _G =25Ω	—	29	—	nS
t _r	Rise Time		—	19	—	
t _{d(off)}	Turn-Off Delay Time		—	42	—	
t _f	Fall Time		—	53	—	
Gate Charge Characteristics²						
Q _g	Total Gate Charge	V _{DS} =48V, V _{GS} =10V, I _D =75A	—	135	—	nC
Q _{gs}	Gate-to-Source Charge		—	23	—	
Q _{gd}	Gate-to-Drain Charge		—	48	—	

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

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

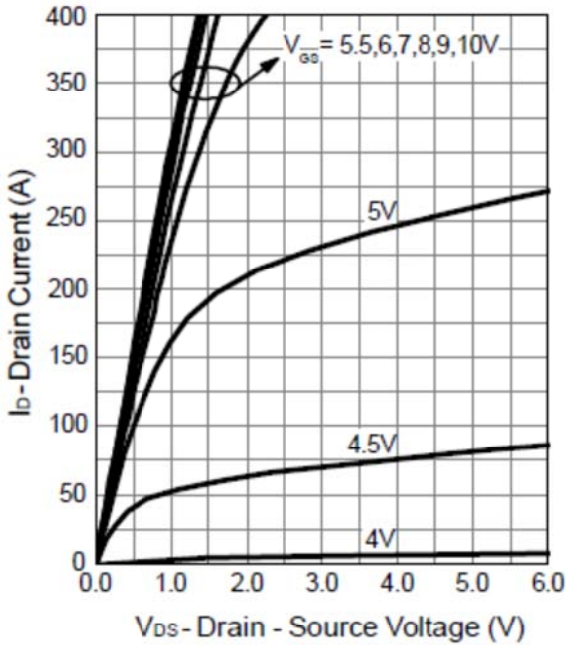
3: Package limitation current is 50A. Calculated continuous current based on maximum allowable junction temperature.

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

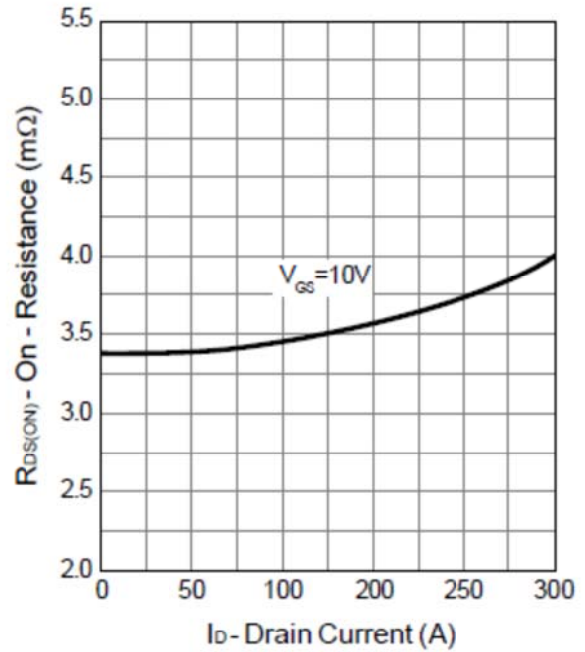
5: Starting T_J = 25°C, L = 0.5mH, I_{AS} = 82A.

Typical Operating Characteristics

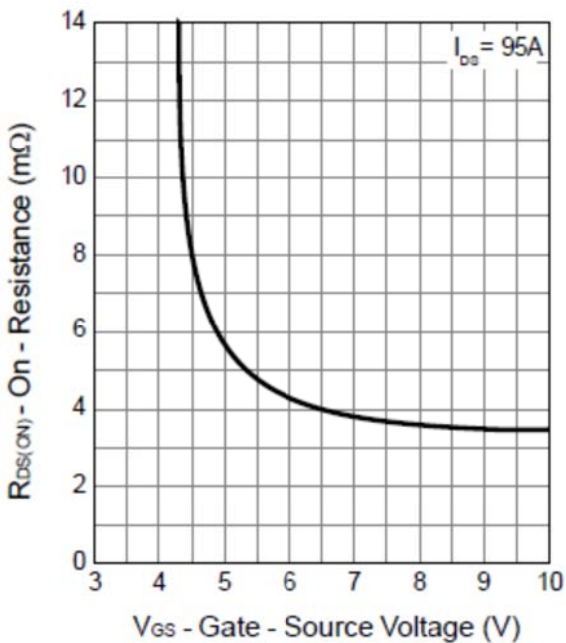
Output Characteristics



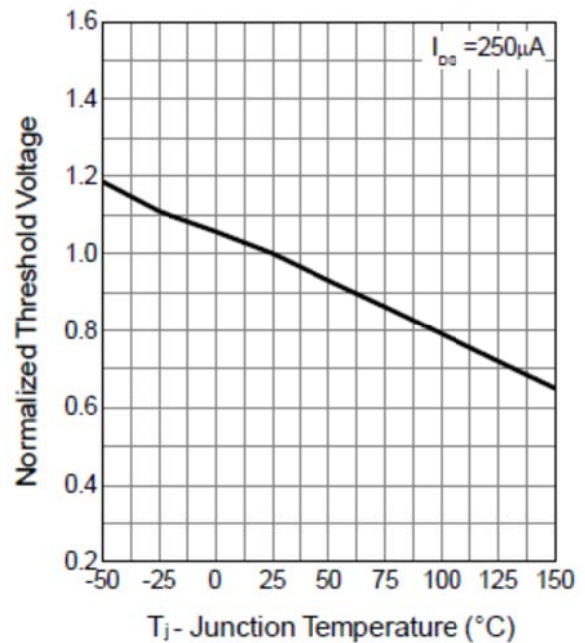
Drain-Source On Resistance



Gate-Source On Resistance

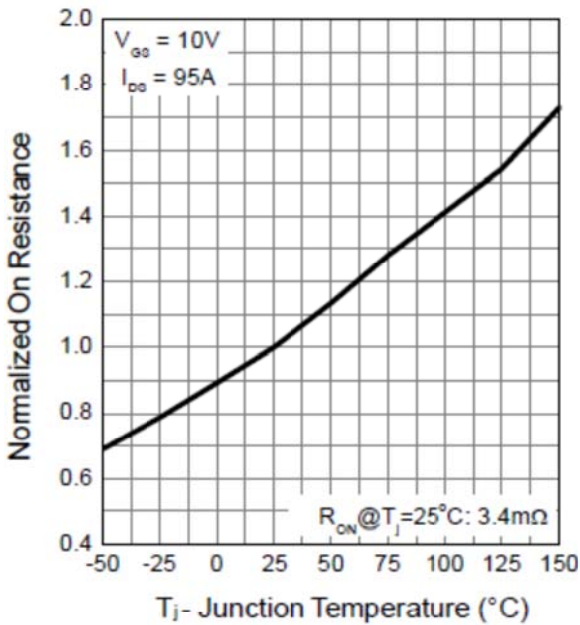


Gate Threshold Voltage

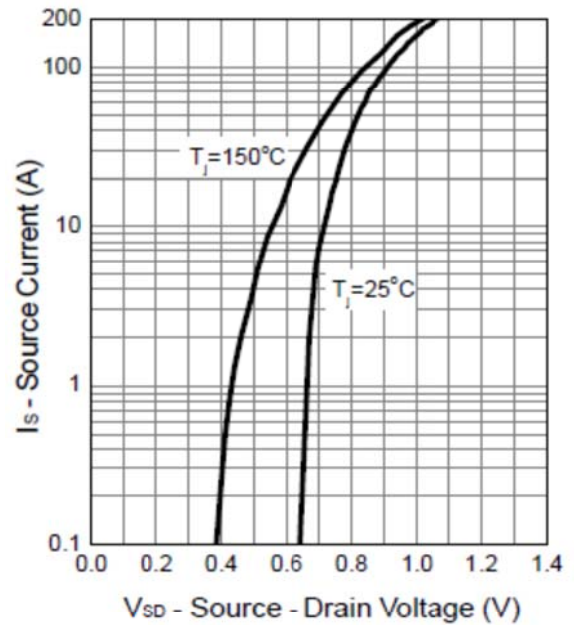


Typical Operating Characteristics

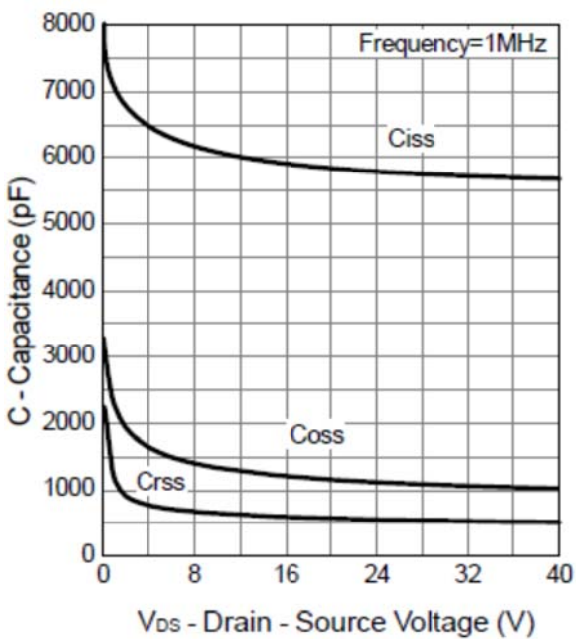
Drain-Source On Resistance



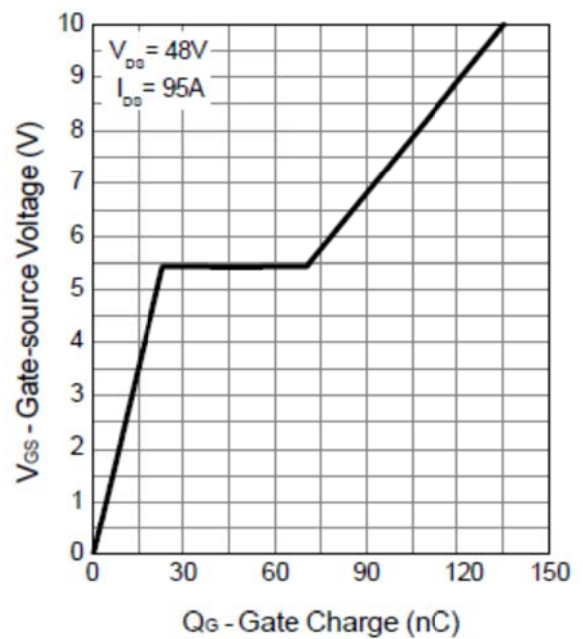
Source-Drain Diode Forward



Capacitance

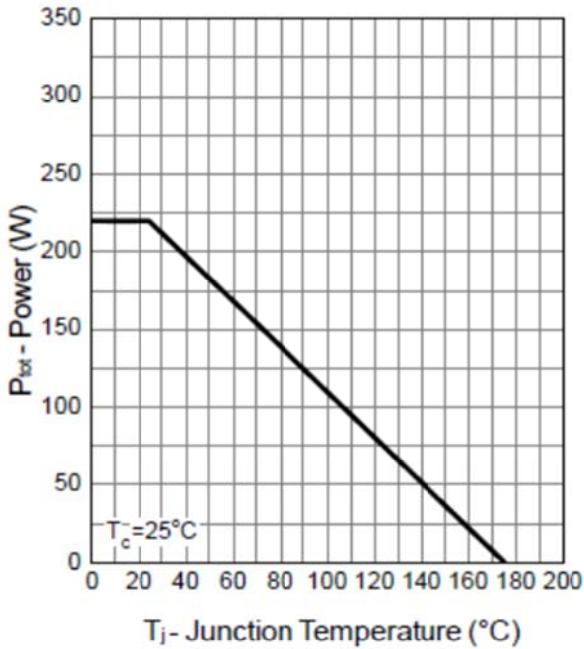


Gate Charge

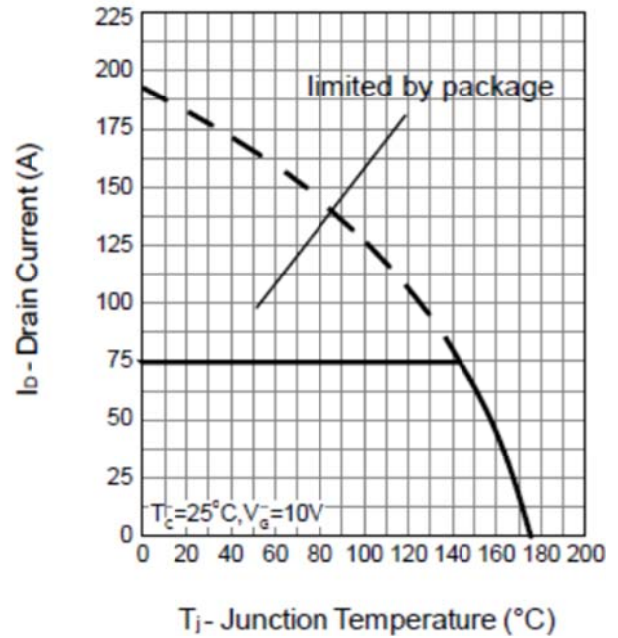


Typical Operating Characteristics

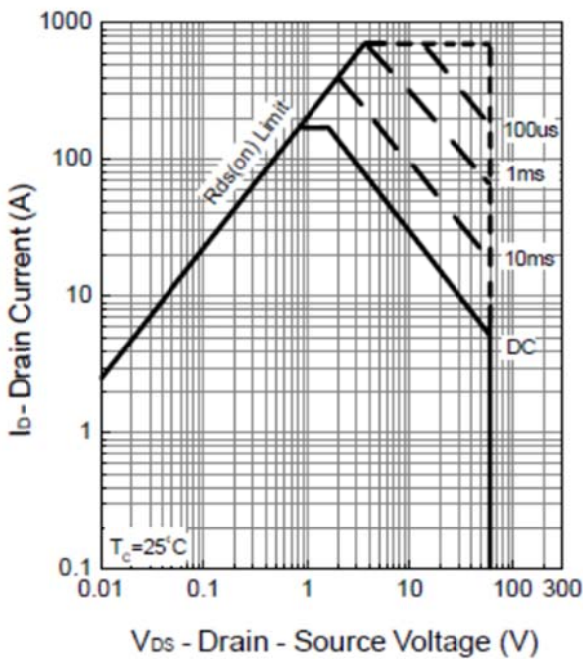
Power Dissipation



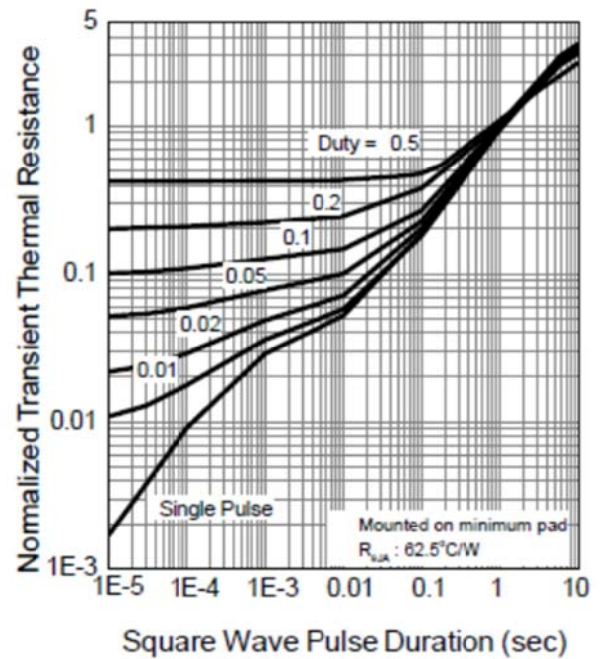
Drain Current



Safe Operation Area

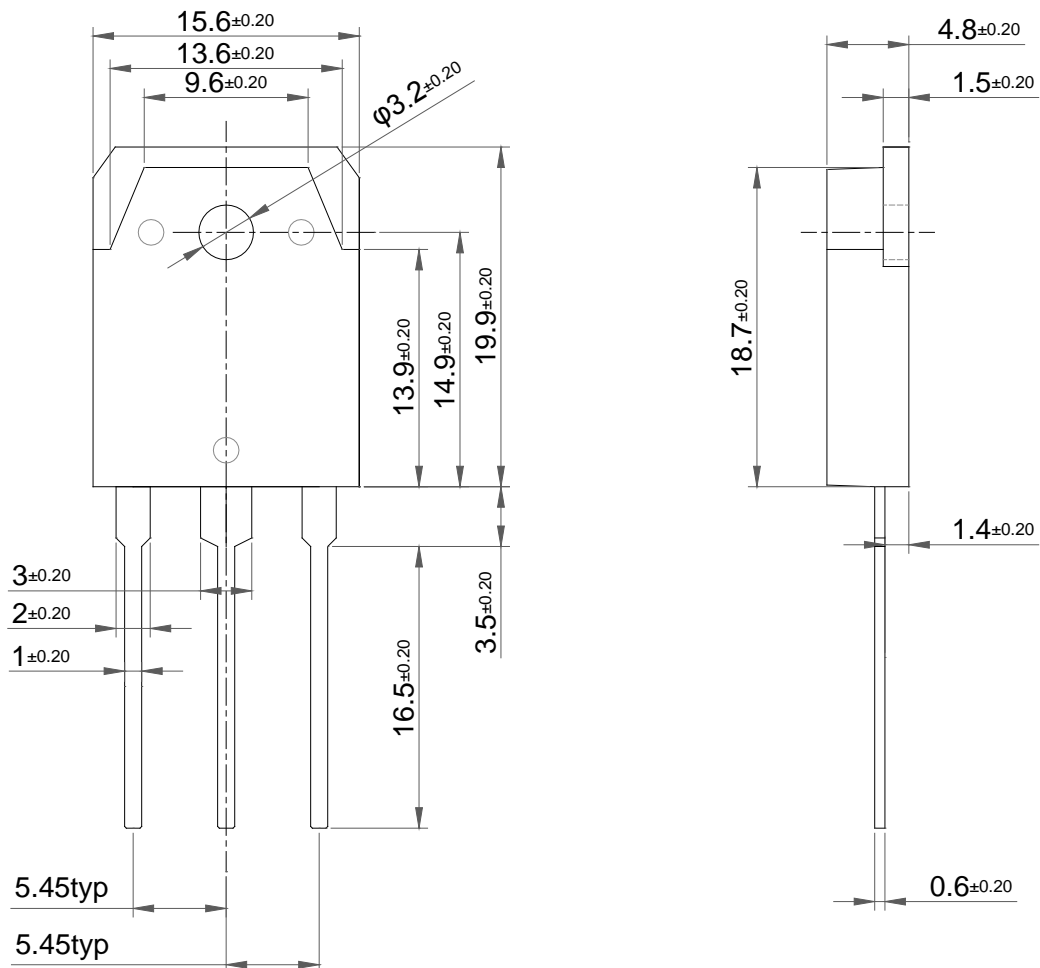


Thermal Transient Impedance



Package Dimension

TO-3P



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