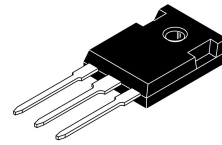


## Features

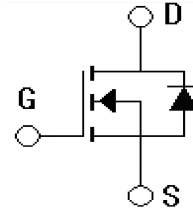
- $V_{DS}=150V, I_D=170A$   
 $R_{DS(on)}=6m\Omega$
- Low gate charge
- Improved dv/dt capability



TO-247

## Applications

- Quick Charger
- Load Switch
- industrial power supplies
- Telecom
- Optimized for Power Management Applications



## Absolute Ratings (Tc=25°C)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	150	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current-continuous	$I_D$	170	A
Drain Current-pulse	$I_{DM}$	680	A
Single Pulsed Avalanche Energy	$E_{AS}$	400	mJ
Maximum Power Dissipation	PD TC=25°C TC=100°C	375	W
		187.5	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55~+175	°C

## Electrical Characteristics(T<sub>CASE</sub>=25°C unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	$BV_{DSS}$	$I_D=250\mu A, V_{GS}=0V$	150	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	3.0	4.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=50A$	-	6.0	7.5	m $\Omega$

Dynamic Characteristics						
Input capacitance	$C_{iss}$	$V_{DS}=75V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	8590	-	pF
Output capacitance	$C_{oss}$		-	580	-	pF
Reverse transfer capacitance	$C_{rss}$		-	13.4	-	pF

**Electrical Characteristics**( $T_{CASE}=25^{\circ}C$  unless otherwise specified)

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=75V, I_D=10A,$ $V_{GS}=10V$ $R_G=2\Omega$	-	19	-	ns
Turn-On rise time	$t_r$		-	22	-	ns
Turn-Off delay time	$t_{d(off)}$		-	78	-	ns
Turn-Off rise time	$t_f$		-	18	-	ns
Total Gate Charge	$Q_g$	$V_{DS}=75V,$ $I_D=50A,$ $V_{GS}=10V$	-	139	-	nC
Gate-Source charge	$Q_{gs}$		-	35	-	nC
Gate-Drain charge	$Q_{gd}$		-	54	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	$V_{SD}$	$V_{GS}=0V, I_S=50A$		0.85	1.2	V
Diode Forward Current	$I_S$	$TC=25^{\circ}C$	-	-	170	A
Reverse recovery time	$T_{rr}$	$I_S=50A,$ $di/dT=100A/\mu S$	-	89		nS
Reverse recovery charge	$Q_{rr}$		-	1120		nC

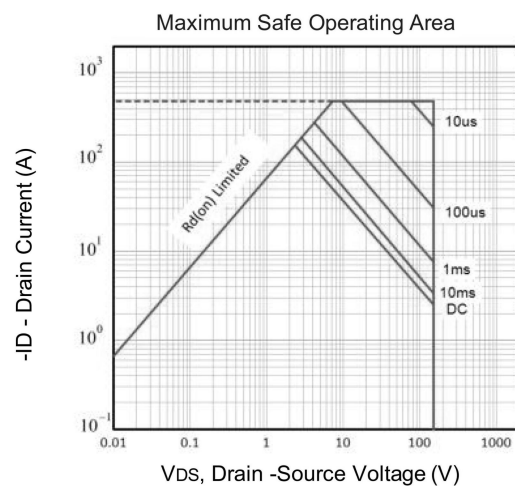
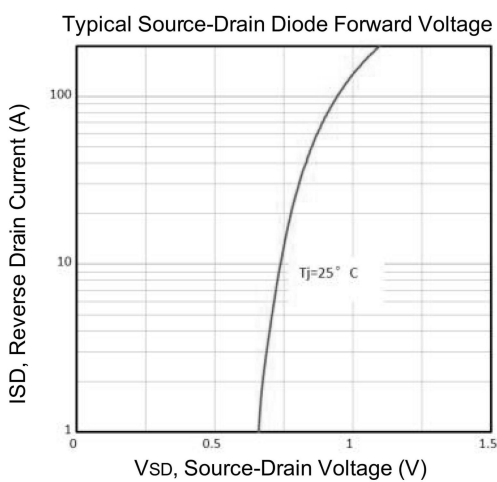
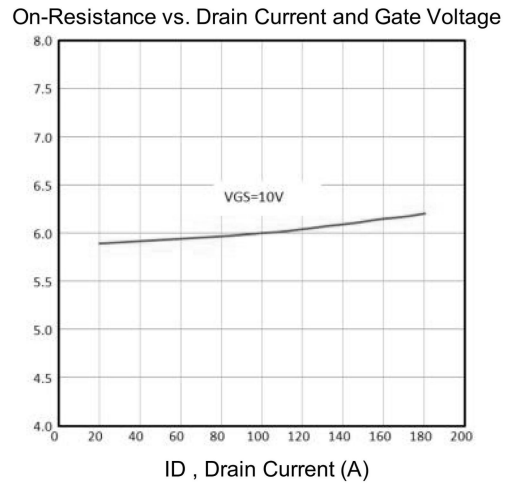
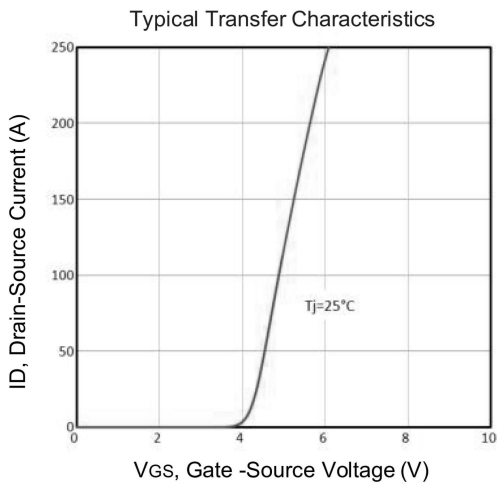
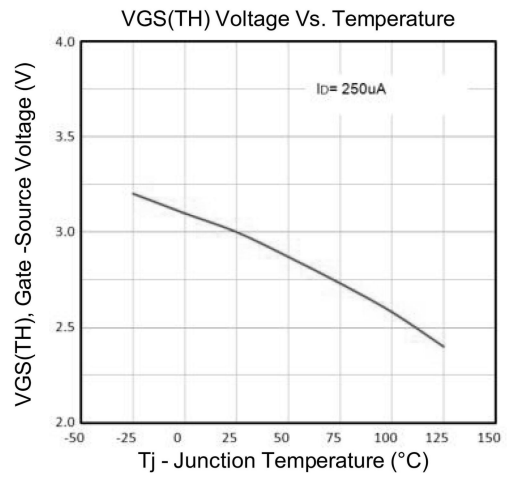
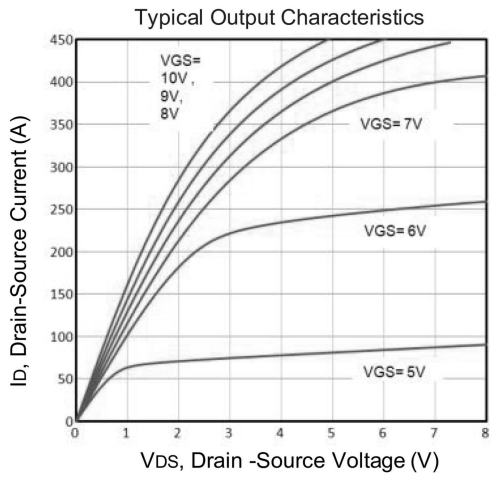
**Thermal Characteristic**

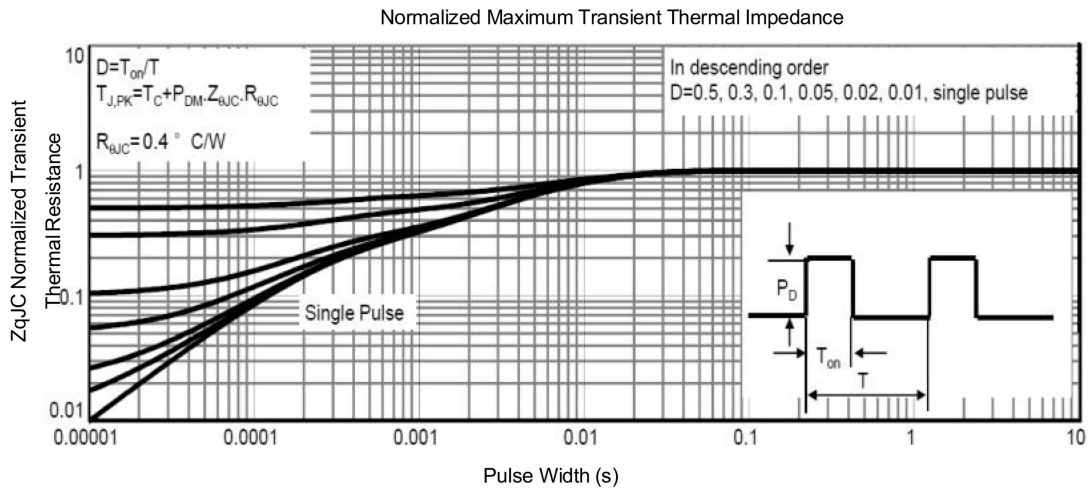
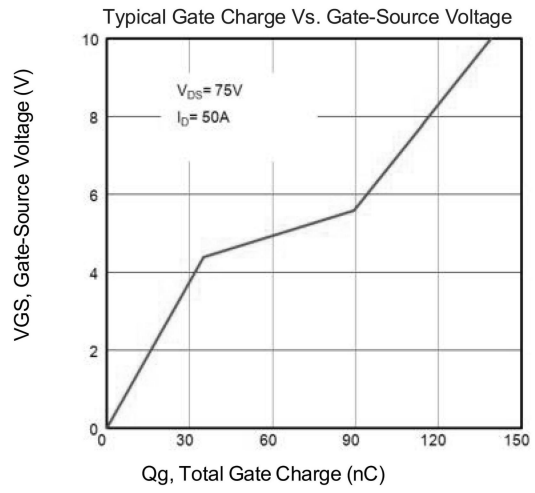
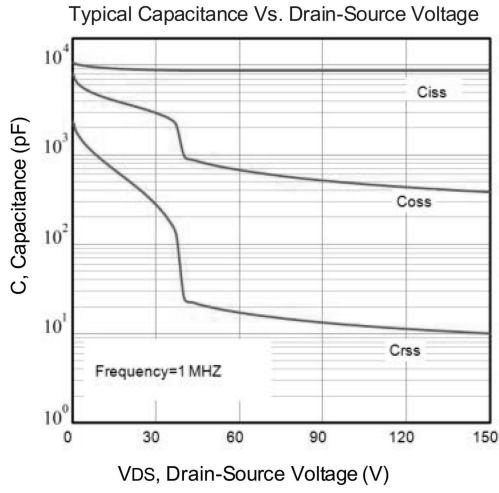
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.4	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}C/W$

Notes:

1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$
2. Limited by  $T_{jmax}$ , starting  $T_j=25^{\circ}C$ ,  $L=0.5mH$ ,  $V_{GS}=10V$

## Electrical Characteristics





## Package Mechanical DATA

