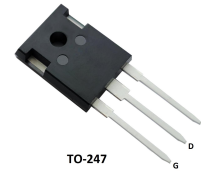


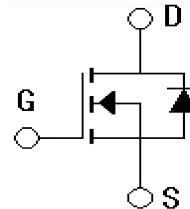
## Features

- $V_{DS}=250V, I_D=120A$   
 $R_{DS(on)}=30m\Omega$
- Low gate charge
- Improved dv/dt capability



## Applications

- High Efficiency Synchronous Rectification in SMPS
- Uninterruptible Power Supply
- High Speed Power Switching
- Hard Switched and High Frequency Circuits



## Absolute Ratings (Tc=25°C)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	$V_{DSS}$	250	V
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V
Drain Current-continuous	$I_D$	120	A
Drain Current-pulse	$I_{DM}$	480	A
Single Pulsed Avalanche Energy	$E_{AS}$	800	mJ
Peak Diode Recovery dv/dt	dv/dt	24	V/ns
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	$BV_{DSS}$	$I_D=250\mu A, V_{GS}=0V$	250	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	20	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	$\pm 100$	nA
<b>On-Characteristics</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	3.0	4.0	5.0	V

Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=60A$	-	30	35	m $\Omega$
Forward Trans conductance	gfs	$V_{GS}=10V, I_D=60A$	100			S
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1.0MHZ$	-	10500	-	pF
Output capacitance	$C_{oss}$		-	600	-	pF
Reverse transfer capacitance	$C_{rss}$		-	180	-	pF

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
<b>Switching-Characteristics</b>						
Turn-On delay time	$t_{d(on)}$	$V_{DS}=125V,$ $I_D=60A,$ $V_{GS}=10V$	-	33	-	ns
Turn-On rise time	$t_r$		-	154	-	ns
Turn-Off delay time	$t_{d(Off)}$		-	55	-	ns
Turn-Off rise time	$t_f$		-	109	-	ns
Total Gate Charge	$Q_g$	$V_{DS}=125V,$ $I_D=60A,$ $V_{GS}=10V$	-	130	-	nC
Gate-Source charge	$Q_{gs}$		-	22	-	nC
Gate-Drain charge	$Q_{gd}$		-	38	-	nC
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Maximum Continuous Drain-Source Diode Forward Current	$V_{SD}$	$V_{GS}=0V, I_S=60A$	-	-	0.8	V
Diode Forward Current	$I_S$	$TC=25^{\circ}C$	-	-	120	A
Reverse recovery time	$T_{rr}$	$I_S=60A,$ $dI/dT=100A/\mu S$	-	180		nS
Reverse recovery charge	$Q_{rr}$		-	1400		nC

**Thermal Characteristic**

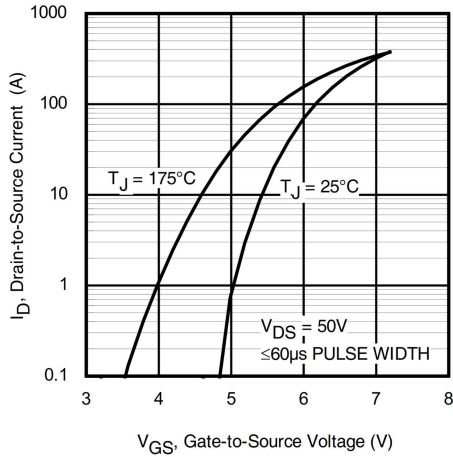
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.4	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}C/W$

Notes:

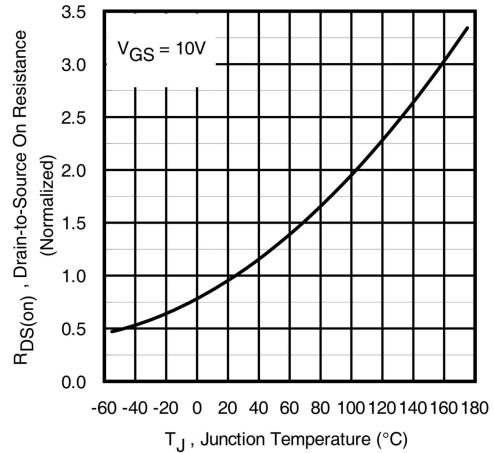
1. Pulse Test: Pulse Width  $\leq 400\mu\text{s}$ , Duty Cycle  $\leq 2\%$
2. Limited by  $T_{j\text{max}}$ , starting  $T_j = 25^\circ\text{C}$ ,  $L = 0.5\text{mH}$ ,  $V_{GS} = 10\text{V}$

## Electrical Characteristics

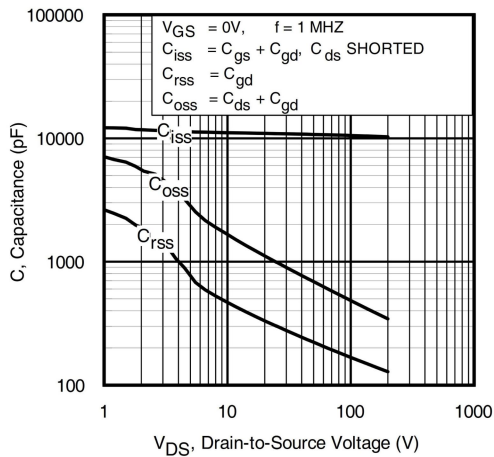
Typical Transfer Characteristics



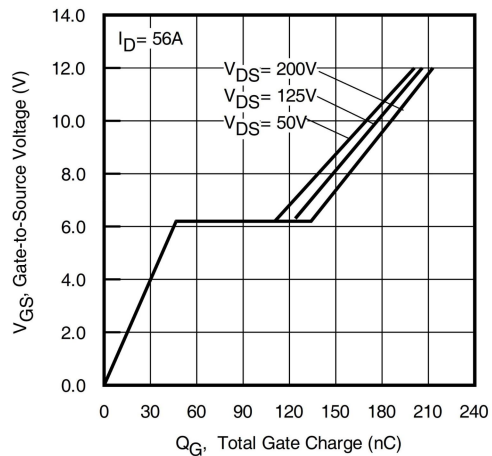
Normalized On-Resistance vs. Temperature



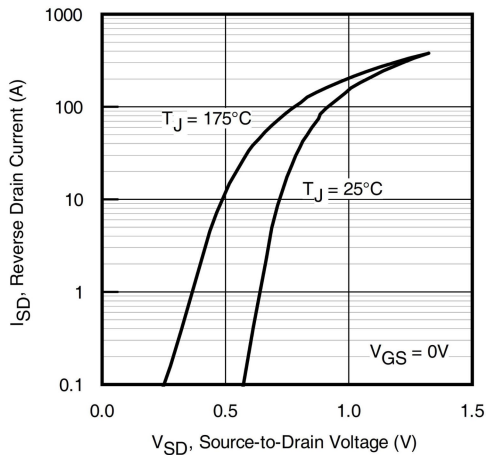
Typical Capacitance vs. Drain-to-Source Voltage



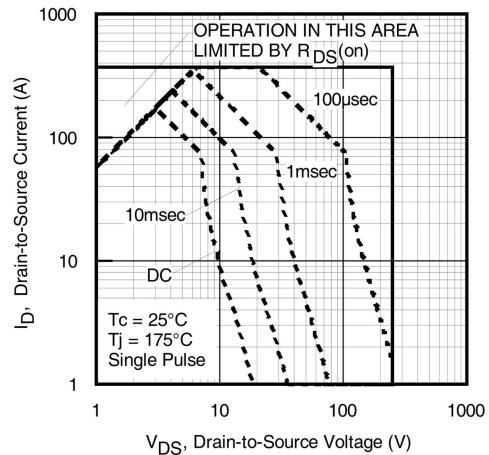
Typical Gate Charge vs. Gate-to-Source Voltage



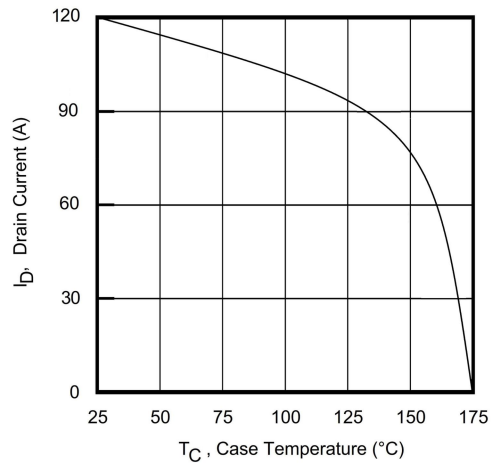
Typical Source-Drain Diode Forward Voltage



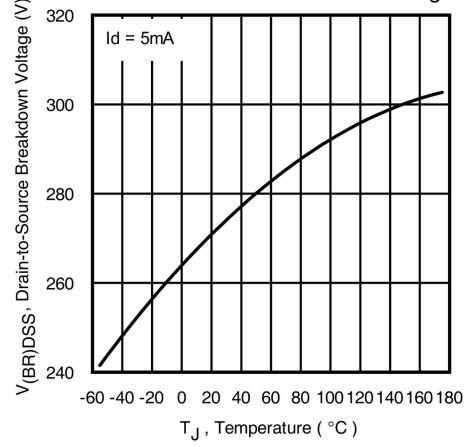
Maximum Safe Operating Area



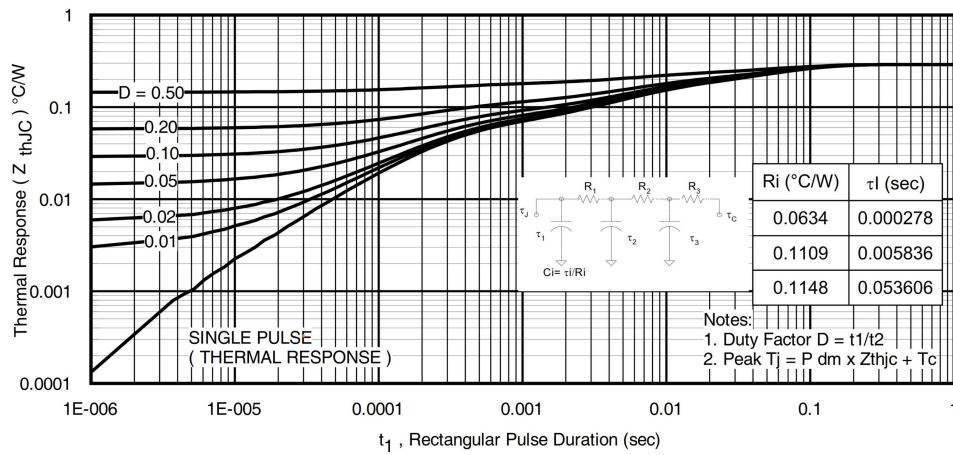
Maximum Drain Current vs. Case Temperature



Drain-to-Source Breakdown Voltage



Maximum Effective Transient Thermal Impedance, Junction-to-Case



Package Mechanical DATA

