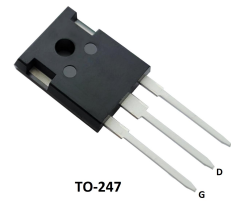


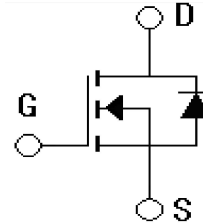
Features

- $V_{DS}=100V, I_D=290A$
- Low C_{rss}
- Low gate charge



Applications

- Secondary synchronous rectifier
- Load Switch
- LED backlighting
- Industrial power supplies



Absolute Ratings ($T_c=25^\circ C$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	± 25	V
Drain Current-continuous	I_D $T_C=25^\circ C$	290	A
	$T_C=100^\circ C$	200	
Drain Current-pulse ⁽¹⁾	I_{DM}	1160	A
Single Pulsed Avalanche Energy ($T_j=25^\circ C, I_D=I_{AR}, V_{DD}=50V$)	E_{AS}	740	mJ
Maximum Power Dissipation	PD $T_C=25^\circ C$	520	W
Peak Diode Recovery voltage slope ⁽²⁾	dv/dt	10	V/ns
Operating and Storage Temperature Range	T_J, T_{STG}	$-55 \sim +175$	$^\circ C$

1. Pulse width Limited by safe operating arer

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V, T_C=25^\circ C$	-	-	1	μA
		$T_C=125^\circ C$	-	-	100	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 25V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						

Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2	-	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=180A$	-	2.0	2.6	m Ω
Forward Trans-conductance	g_{fs}	$V_{DS}=50V, I_D=180A$	310	-	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	19550	-	pF
Output capacitance	C_{oss}		-	1250	-	pF
Reverse transfer capacitance	C_{rss}		-	430	-	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} =50V,I _D =180A, V _{GS} =10V,R _G =2Ω	-	51	-	ns
Turn-On rise time	t _r		-	224	-	ns
Turn-Off delay time	t _{d(Off)}		-	160	-	ns
Turn-Off rise time	t _f		-	256	-	ns
Total Gate Charge	Q _g	V _{DS} =50V,I _D =180A, V _{GS} =10V	-	354	534	nC
Gate-Source charge	Q _{gs}		-	79	-	nC
Gate-Drain charge	Q _{gd}		-	85	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Curret	V _{SD}	V _{GS} =0V,I _S =180A	-	0.85	1.2	V
Diode Forward Current	I _S		-	-	290	A
Reverse recovery time	T _{rr}	I _S =180A, dI/dT=100A/μS VR=85V,T _j =150℃	-	100	-	nS
Reverse recovery charge	Q _{rr}		-	375	-	nC

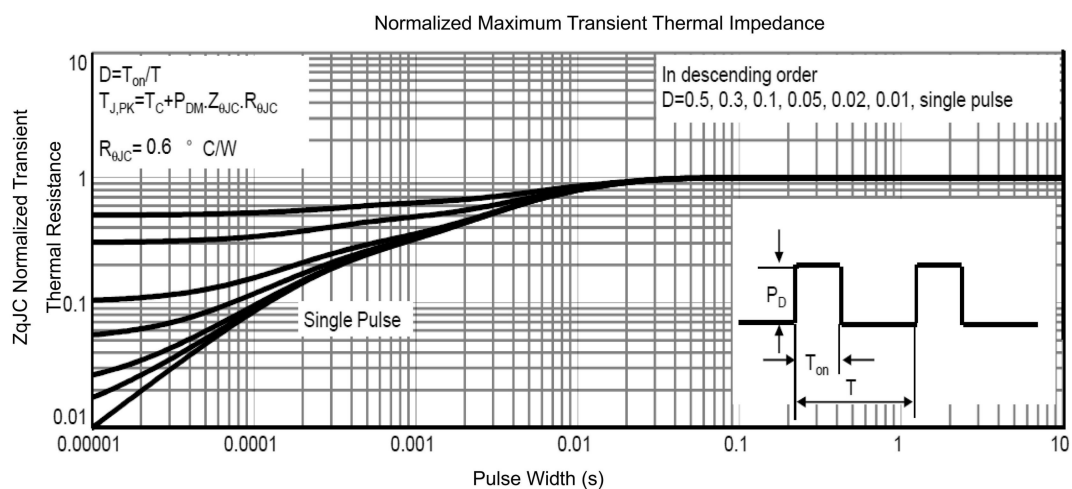
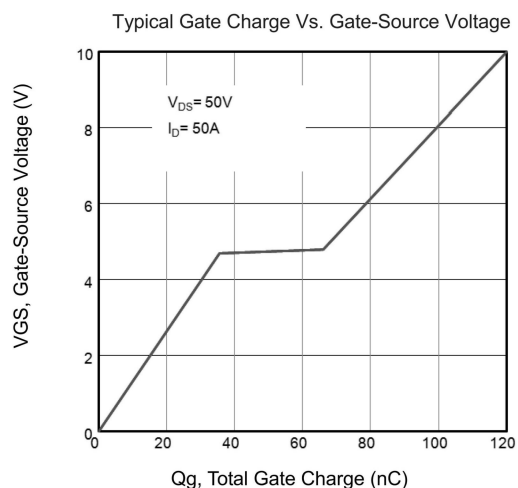
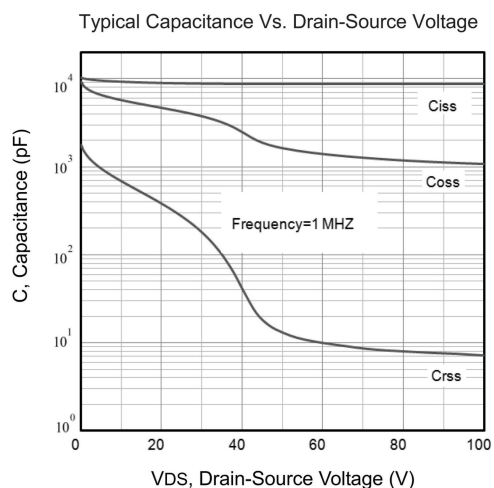
Thermal Characteristic

Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.29	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}\text{C}/\text{W}$

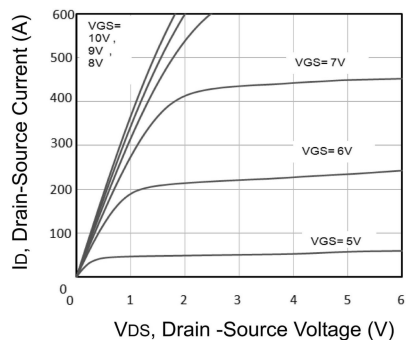
Notes:

1. Pulse width limited by maximum junction temperature
2. $L=0.045\text{mH}$, $I_{AS}=180\text{A}$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}\text{C}$
3. $ISD \leq 180\text{A}$, $di/dt \leq 600\text{A}/\mu\text{s}$, $V_{DD} \leq BVDSS$, Starting $T_J < 175^{\circ}\text{C}$
4. Pulse Test: Pulse Width $\leq 400\mu\text{s}$, Duty Cycle $\leq 2\%$
5. Essentially independent of operating temperature

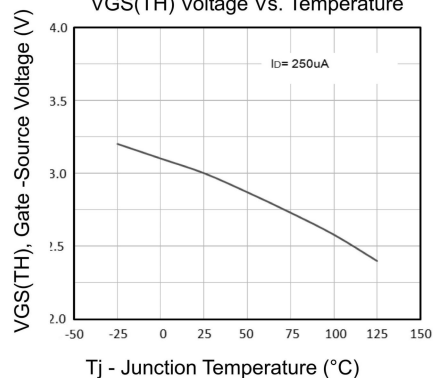
Electrical Characteristics



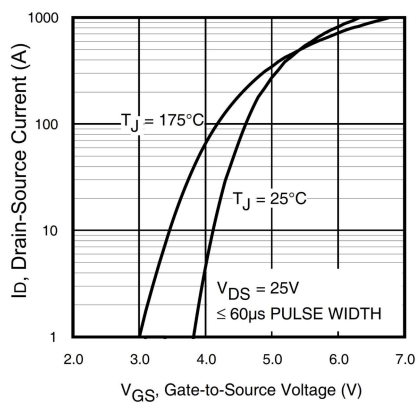
Typical Output Characteristics



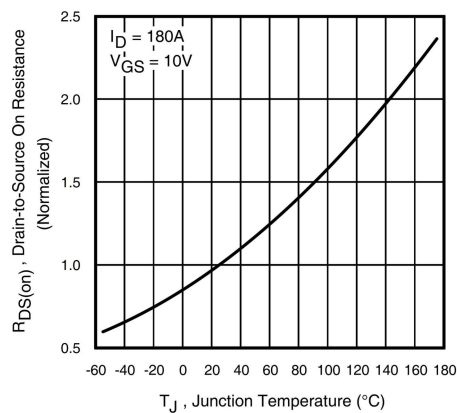
$V_{GS(TH)}$ Voltage Vs. Temperature



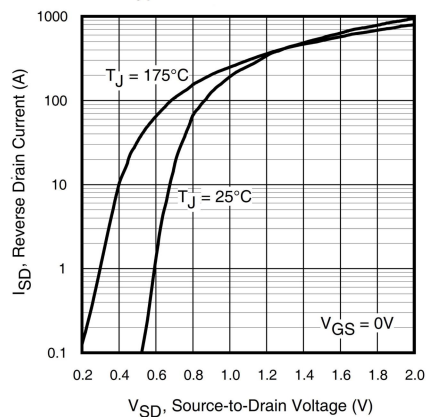
Typical Output Characteristics



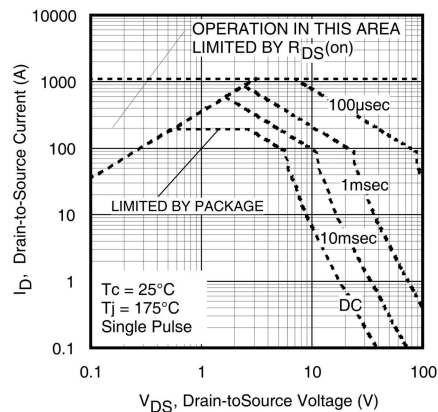
Typical Output Characteristics



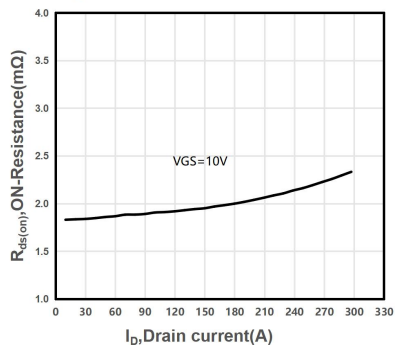
Typical Source-Drain Diode



Maximum Safe Operating Area



Typical On-resistance vs drain current



Package Mechanical Data

