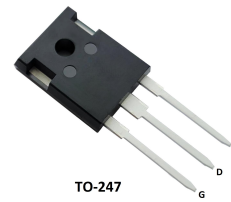


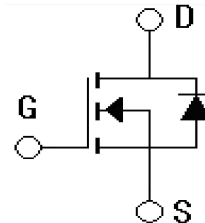
Features

- $V_{DS}=1000V, I_D=18A$
- Low C_{rss}
- Low gate charge
- Improved dv/dt capability



Applications

- High efficiency switch mode power supplies
- Electronic lamp ballasts based on half bridge
- UPS



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	1000	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current-continuous	I_D $T_C=25^\circ C$	18	A
	$T_C=100^\circ C$	12	
Drain Current-pulse ⁽¹⁾	I_{DM}	72	A
Single Pulsed Avalanche Energy ($T_j=25^\circ C, I_D=I_{AR}, V_{DD}=50V$)	E_{AS}	750	mJ
Maximum Power Dissipation	PD $T_C=25^\circ C$	470	W
	Derate above $25^\circ C$	3.76	W/ $^\circ C$
Peak Diode Recovery voltage slope ⁽²⁾	dv/dt	4.1	V/ns
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+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}	$I_D=250\mu A, V_{GS}=0V$	1000	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V,$ $T_C=25^\circ C$	-	-	1	μA
		$T_C=125^\circ C$	-	-	10	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=9A$	-	0.55	0.75	Ω
Forward Transconductance	g_{fs}	$V_{DS}=40V, I_D=18A$	-	27	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	2850	-	pF
Output capacitance	C_{oss}		-	290	-	pF
Reverse transfer capacitance	C_{rss}		-	30	-	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	$t_{d(on)}$	$V_{DS}=500V, I_D=18A, V_{GS}=10V, R_G=25\Omega$	-	40	-	ns
Turn-On rise time	t_r		-	50.2	-	ns
Turn-Off delay time	$t_{d(Off)}$		-	234.6	-	ns
Turn-Off rise time	t_f		-	67.2	-	ns
Total Gate Charge	Q_g	$V_{DS}=800V, I_D=18A, V_{GS}=10V, R_G=25\Omega$	-	66.64	-	nC
Gate-Source charge	Q_{gs}		-	15.68	-	nC
Gate-Drain charge	Q_{gd}		-	24.92	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	I_{SD}	$V_{GS}=0V, I_S=18A$	-	-	1.5	V
Diode Forward Current	I_S		-	-	18	A
Reverse recovery time	T_{rr}	$I_S=18A, di/dT=100A/\mu S$	-	590	-	nS
Reverse recovery charge	Q_{rr}	$V_R=100V, V_{GS}=0V, T_j=150^{\circ}C$	-	6702	-	nC

Thermal Characteristic

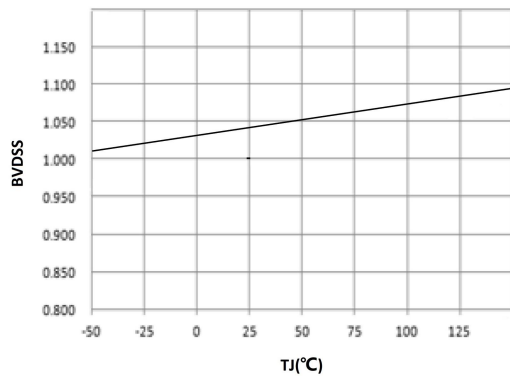
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.212	$^{\circ}C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	62.5	$^{\circ}C/W$

Notes:

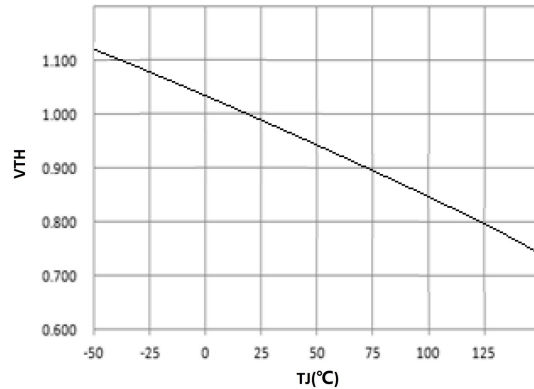
1. Pulse width limited by maximum junction temperature
2. $L=8.9mH$, $I_{AS}=18A$, $V_{DD}=100V$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}C$
3. $ISD \leq 18A$, $di/dt \leq 200A/\mu s$, $V_{DD} \leq BV_{DSS}$, Starting $T_J=25^{\circ}C$
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
5. Essentially independent of operating temperature

Electrical Characteristics

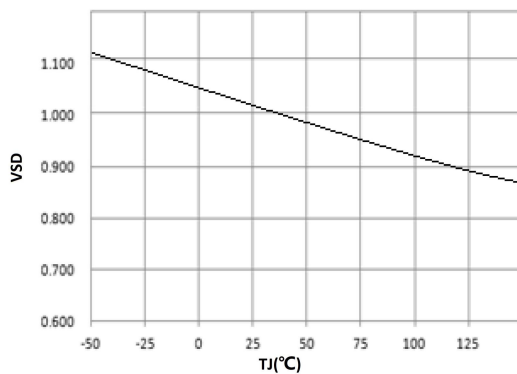
Normalized BV_{DSS} vs. temperature



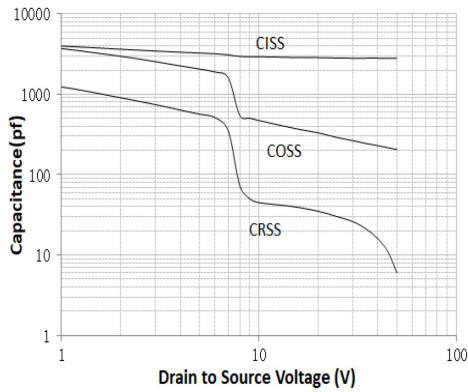
Normalized V_{TH} vs. temperature



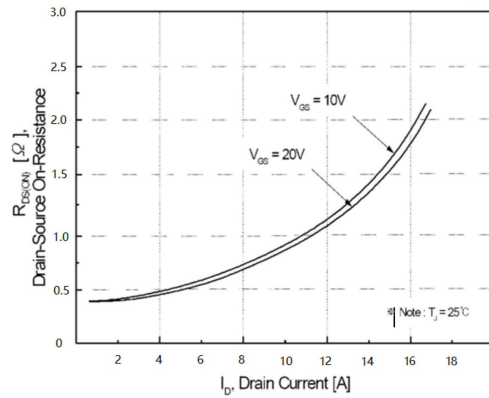
Normalized V_{SD} vs. temperature



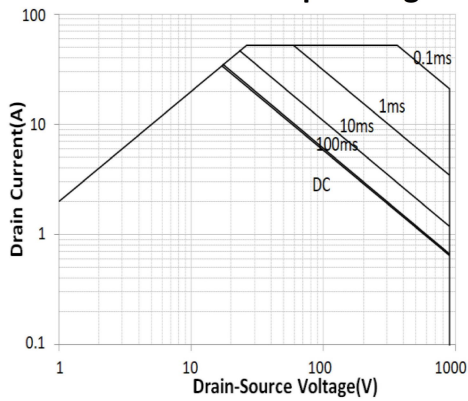
Capacitance Characteristics



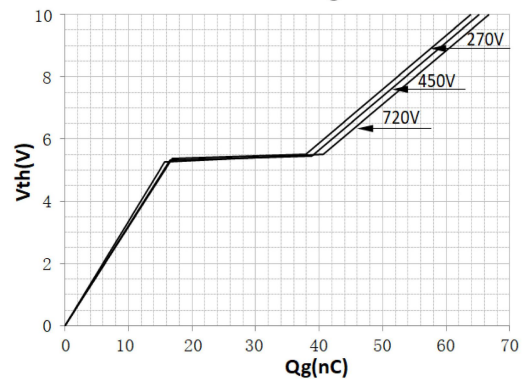
On-Resistance Variation vs. I_D



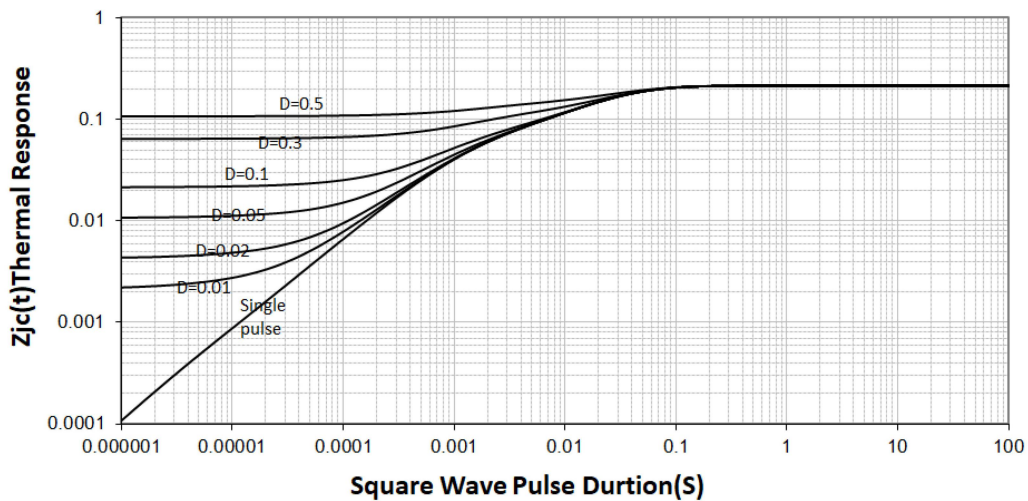
Maximum Safe Operating Area



Gate charge vs. V_{GS}



Thermal Impedance



Package Mechanical Data

