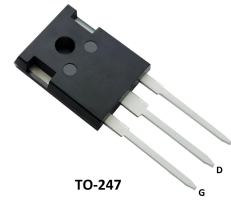


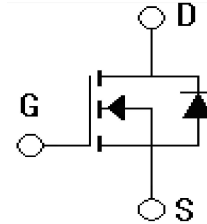
Features

- $V_{DS}=1000V, I_D=18A$
- Low C_{rss} (typ 30pF)
- Low gate charge
- Improved dv/dt capability
- Planar Mos



Applications

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



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

Parameter	Symbol		Limit	Unit
Drain-Source Voltage	V _{DSS}		1000	V
Transient Gate-Source Voltage	V _{GSM}		±30	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current-continuous	I _D	T _C =25℃	18	A
		T _C =100℃	12	
Drain Current-pulse(note1)	I _{DM}		52	A
Single Pulsed Avalanche Energy (note2)	E _{AS}		750	mJ
Maximum Power Dissipation	P _D	T _C =25℃	589	W
		T _C =100℃	235	W
Peak Diode Recovery voltage slope (note3)	dv/dt		4.1	V/ns
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃

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}	$V_{DS}=V_{DSS}, V_{GS}=0V,$	-	-	1	μA
		$T_C=125^\circ C$	-	-	10	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 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	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$ (note4)	-	0.55	0.75	Ω
Forward Transconductance	g_{fs}	$V_{DS}=40V, I_D=13A$ (note4)	-	27	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	2840	-	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} =450V,I _D =13A, V _{GS} =10V,R _G =25Ω	-	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} =720V,I _D =13A, V _{GS} =10V,R _G =25Ω (note5)	-	66.64	-	nC
Gate-Source charge	Q _{gs}		-	15.68	-	nC
Gate-Drain charge	Q _{gd}		-	25	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	V _{SD}	V _{GS} =0V,I _S =1A(note4)	-	0.7	1.2	V
Diode Forward Current	I _S		-	-	18	A
Reverse recovery time	T _{rr}	I _S =13A,di/dt=100A/μs	-	590	-	ns
Reverse recovery charge	Q _{rr}	V _R =100V,V _{GS} =0V, T _j =150℃(note4)	-	6702	-	nC

Thermal Characteristic

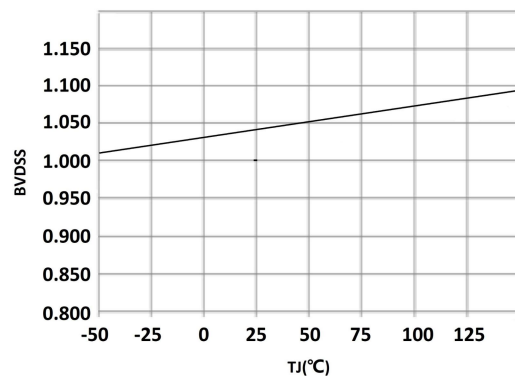
Parameter	Symbol	Value	Unit
Thermal Resistance,junction to Case	$R_{th(j-C)}$	0.212	$^{\circ}\text{C}/\text{W}$
Thermal Resistance,junction to Ambient	$R_{th(j-A)}$	62.5	$^{\circ}\text{C}/\text{W}$

Notes:

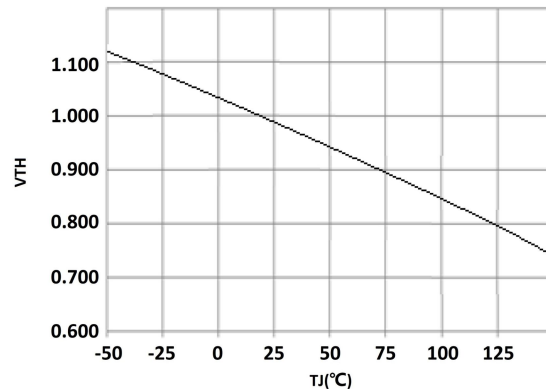
1. Pulse width limited by maximum junction temperature
2. $L=8.9\text{mH}$, $I_{AS}=18\text{A}$, $V_{DD}=100\text{V}$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}\text{C}$
3. $ISD \leq 18\text{A}$, $di/dt \leq 200\text{A}/\mu\text{s}$, $V_{DD} \leq BV_{DSS}$, Starting $T_J=25^{\circ}\text{C}$
4. Pulse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

Electrical Characteristics

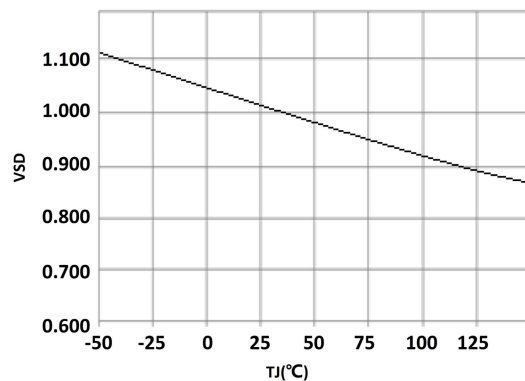
Normalized BV_{DSS} vs. temperature



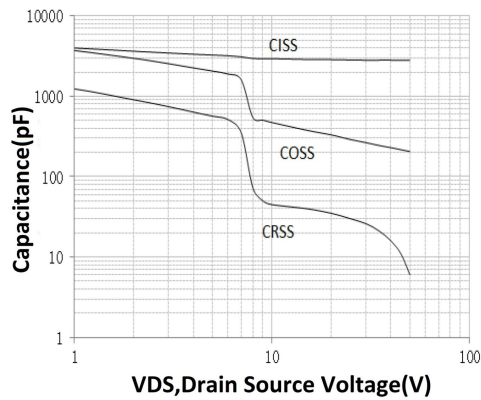
Normalized V_{TH} vs. temperature



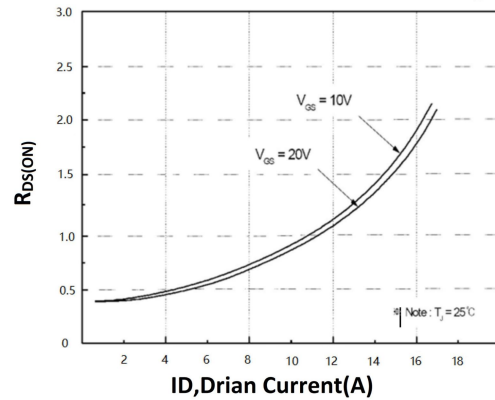
Normalized V_{SD} vs. temperature



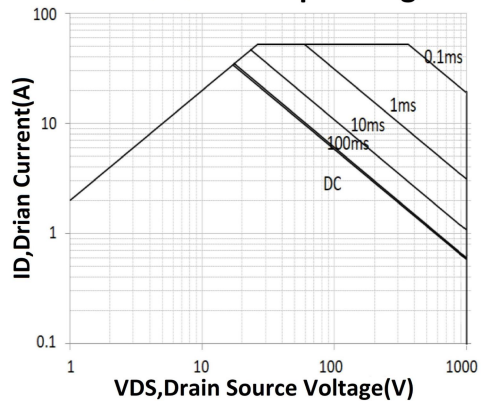
Capacitance Characteristics



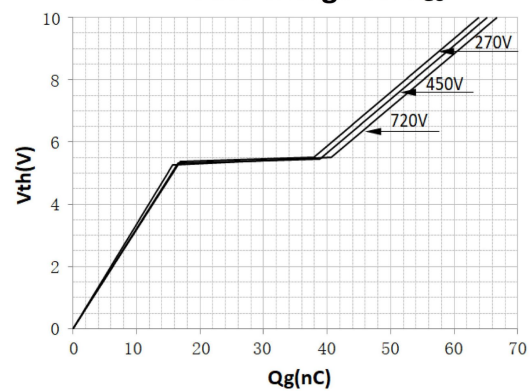
On-Resistance Variation vs. I_D



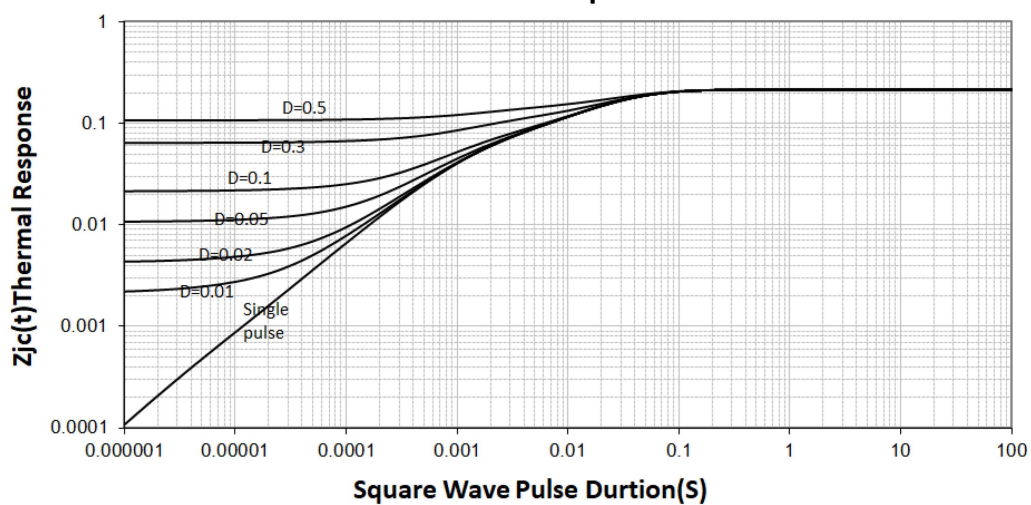
Maximum Safe Operating Area



Gate charge vs. V_{GS}



Thermal Impedance



Package Mechanical Data

