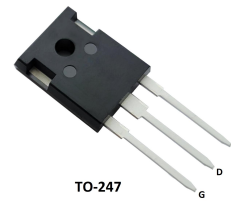


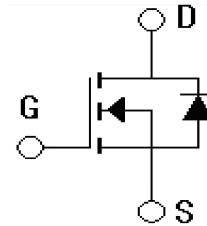
Features

- $V_{DS}=1000V, I_D=18A$
- 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
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(note1)	I_{DM}	52	A
Single Pulsed Avalanche Energy ($T_J=25^\circ C, I_{AR}=4A, V_{DD}=50V$)(note2)	E_{AS}	750	mJ
Maximum Power Dissipation	PD $T_C=25^\circ C$ Derate above $25^\circ C$	470	W
		3.76	W/ $^\circ C$
Peak Diode Recovery voltage slope (note3)	dv/dt	4.1	V/ns
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

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}	$V_{DS} = 40V, I_D = 13A$ (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 (note4,5)	-	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 (note4,5)	-	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 Curret	V _{SD}	V _{GS} =0V,I _S =18A	-	0.7	-	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}	VR=100V,VGS=0V, Tj=150℃(note4)	-	6702	-	nC

Thermal Characteristic

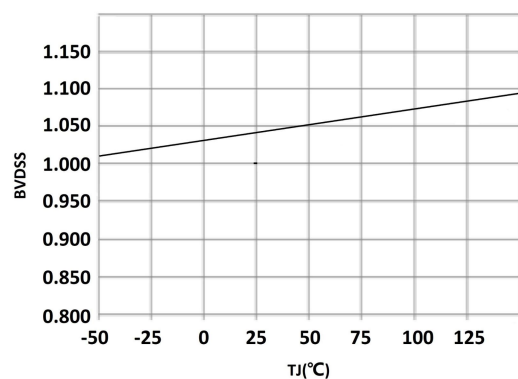
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.212	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	62.5	$^{\circ}\text{C}/\text{W}$

Notes:

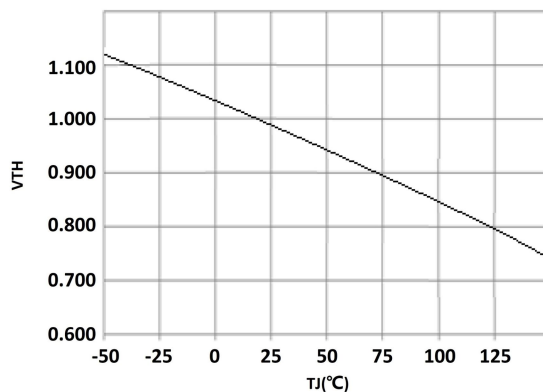
1. Pulse width limited by maximum junction temperature
2. $L=8.9\text{mH}$, $I_{AS}=18\text{A}$, $V_{DD}=100\text{V}$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}\text{C}$
3. $ISD \leq 18\text{A}$, $di/dt \leq 200\text{A}/\mu\text{s}$, $V_{DD} \leq BVDSS$, Starting $T_J=25^{\circ}\text{C}$
4. Pulse Test: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

Electrical Characteristics

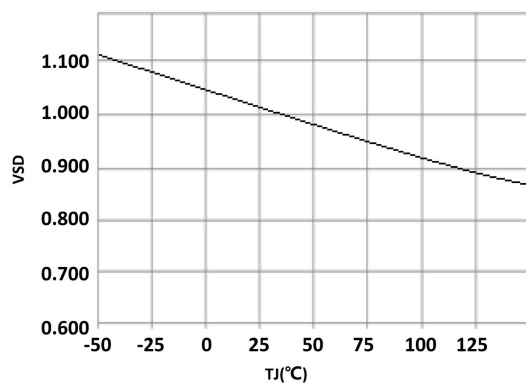
Normalized BV_{DSS} vs. temperature



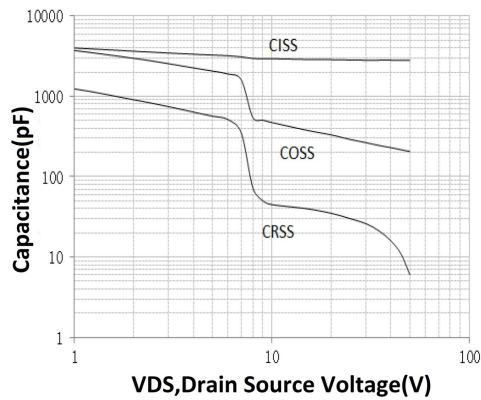
Normalized V_{TH} vs. temperature



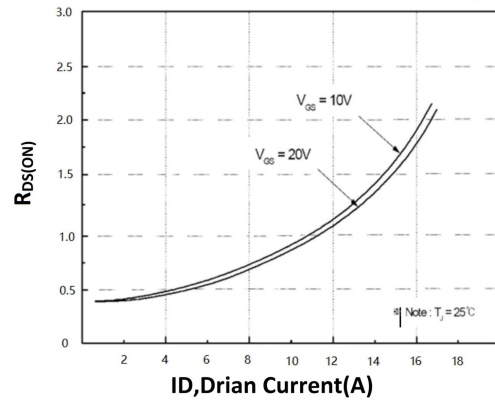
Normalized V_{SD} vs. temperature



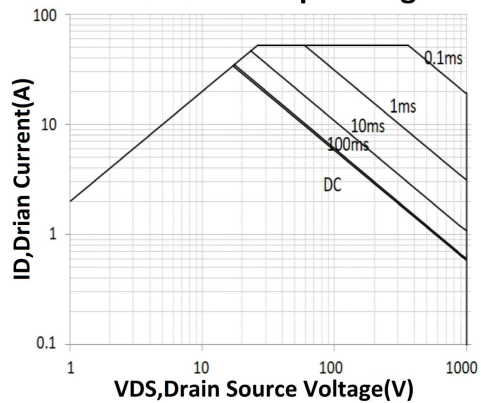
Capacitance Characteristics



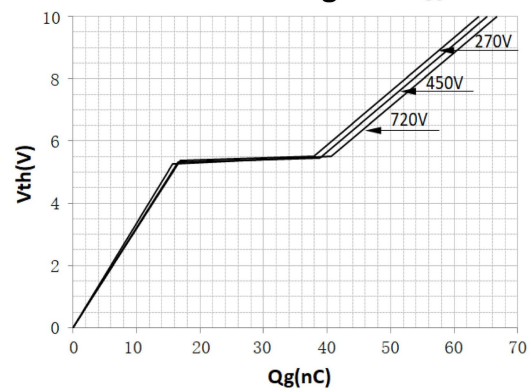
On-Resistance Variation vs. I_D



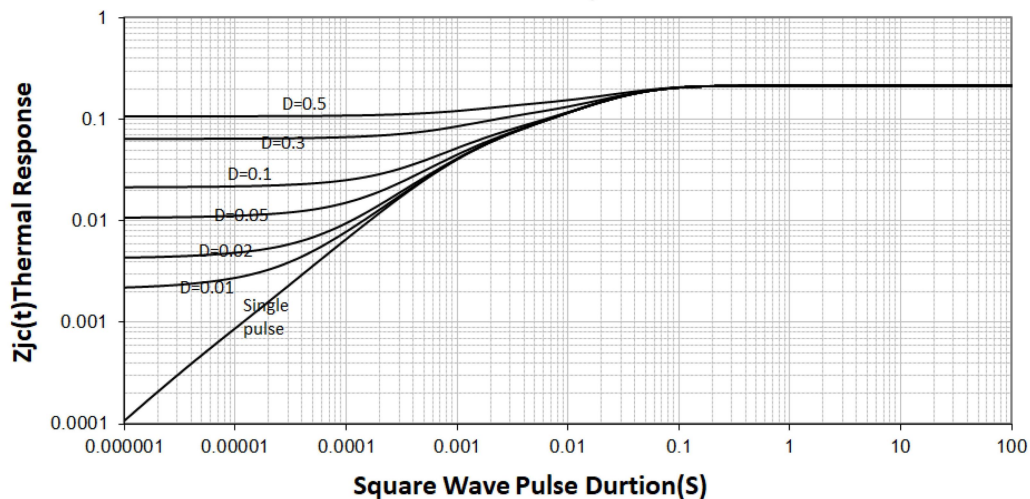
Maximum Safe Operating Area



Gate charge vs. V_{GS}



Thermal Impedance



Package Mechanical Data

