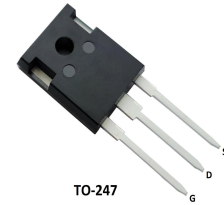


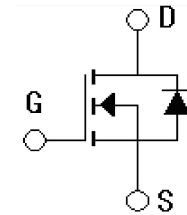
Features

- 40A / 1000V Super Junction Power MOSFET
- $R_{DS(on)}=0.13\Omega(\text{typ.})@V_{GE}=10V$
- Excellent reduced switching losses
- RoHS compliant
- 100% avalanche tested



Applications

- High Speed Power Switching
- Electronic lamp ballasts based on half bridge



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

Parameter	Symbol		Limit	Unit
Drain-Source Voltage	V _{DSS}		1000	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current-continuous(note 1)	I _D	T _C =25℃	40	A
		T _C =100℃	26	
Drain Current-pulse(note 2)	I _{DM}		160	A
Single Pulsed Avalanche Energy	E _{AS}		750	mJ
Maximum Power Dissipation	P _D	T _C =25℃	520	W
		T _C =100℃	280	
Operating and Storage Temperature Range	T _J , T _{STG}		-55~+150	℃
Maximum Lead Temperature for Soldering Purposes	T _L		260	℃

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0V$	1000	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V, T_C=25^\circ\text{C}$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	2.2	4.0	5.0	V

Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=10A$	-	0.13	0.15	Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=100V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	3220	-	pF
Output capacitance	C_{oss}		-	238	-	pF
Reverse transfer capacitance	C_{rss}		-	1.8	-	pF

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

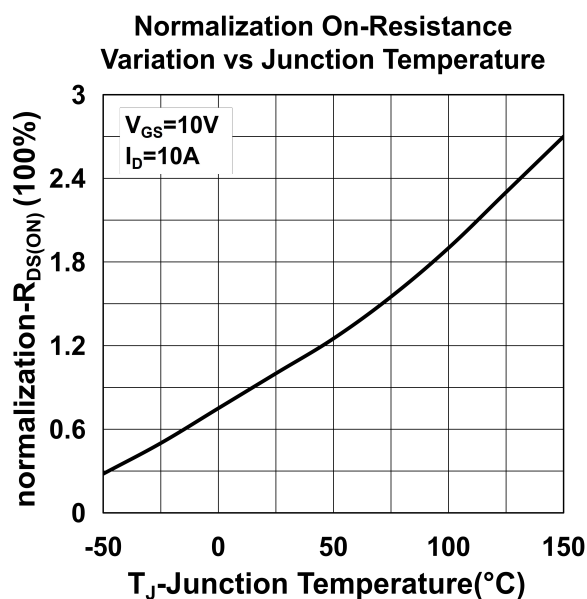
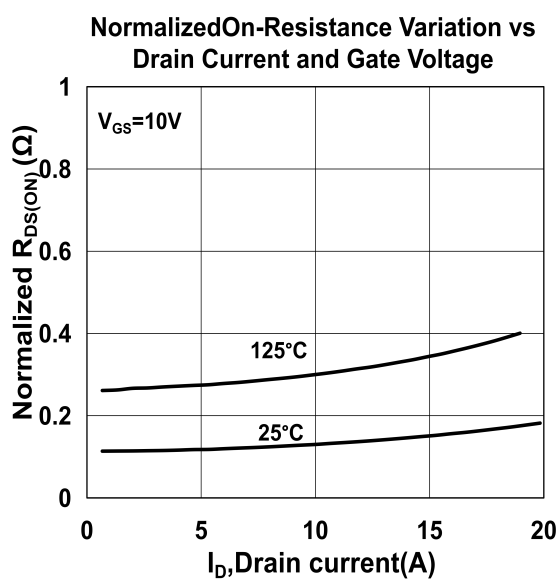
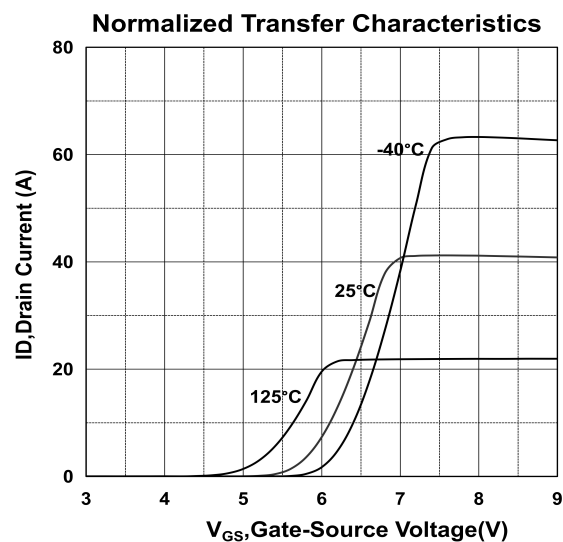
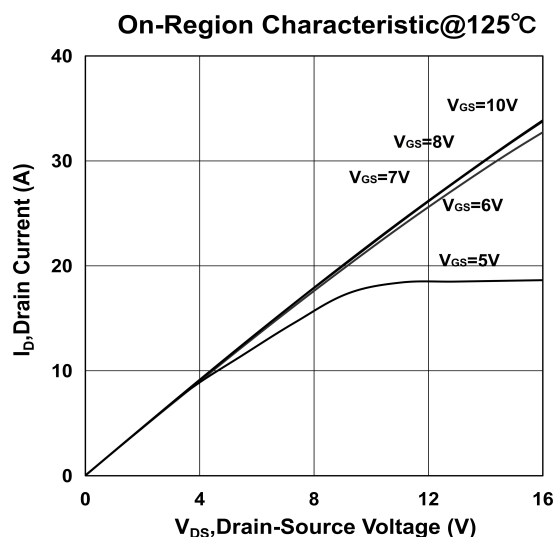
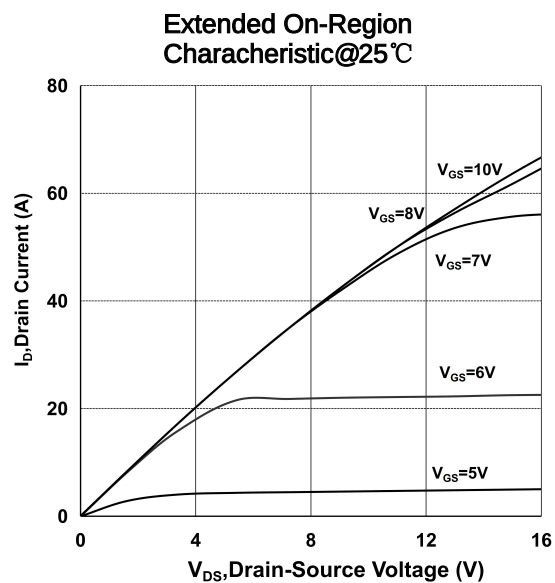
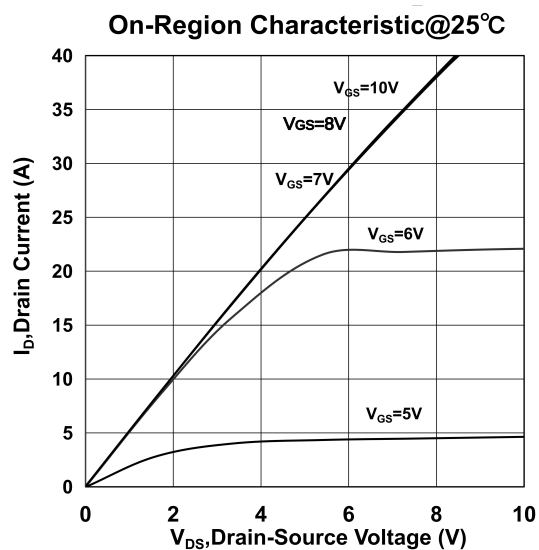
Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	t _{d(on)}	V _{DS} =500V,I _D =20A, V _{GS} =10V,R _G =4.7Ω	-	36	-	ns
Turn-On rise time	t _r		-	54	-	ns
Turn-Off delay time	t _{d(Off)}		-	96	-	ns
Turn-Off rise time	t _f		-	13	-	ns
Total Gate Charge	Q _g	V _{DS} =800V,I _D =40A, V _{GS} =10V	-	90	-	nC
Gate-Source charge	Q _{gs}		-	17	-	nC
Gate-Drain charge	Q _{gd}		-	57	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =1A	-	0.70	1.2	V
Continuous Source Current (Body Diode)	I _S				40	A
Reverse recovery time	T _{rr}	V _{DD} =60 V,I _S =40A, dI/dt=100A/μs	-	720	-	ns
Reverse recovery charge	Q _{rr}		-	23.6	-	μC

Thermal Characteristic

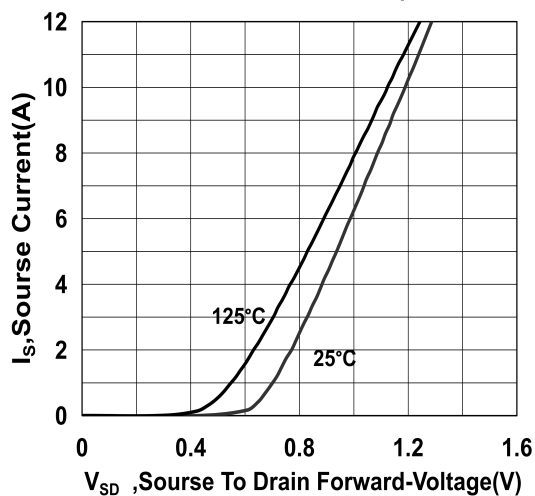
Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case, Max	$R_{th(j-C)}$	0.24	$^{\circ}C/W$
Thermal Resistance, junction to Ambient, Max	$R_{th(j-A)}$	50	$^{\circ}C/W$

Notes: 1. The max drain current rating is junction temperature limited
2. Repetitive Rating: Pulse width limited by maximum junction temperature

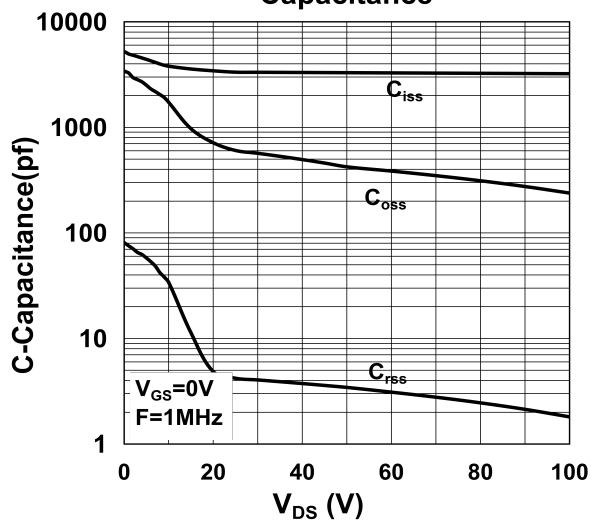
Electrical Characteristics



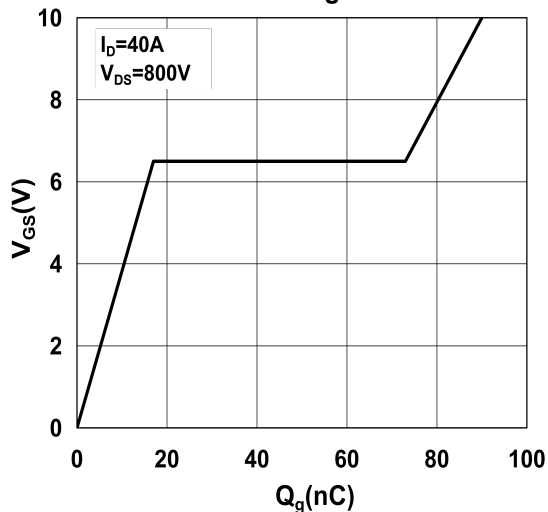
Body Diode Forward Voltage Variation with Source Current and Temperature



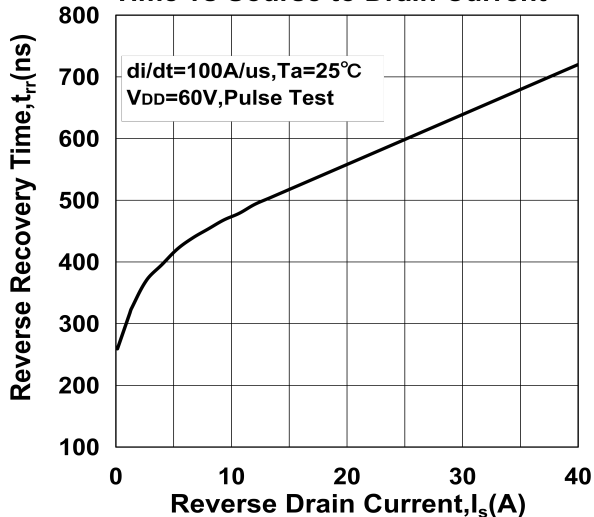
Capacitance



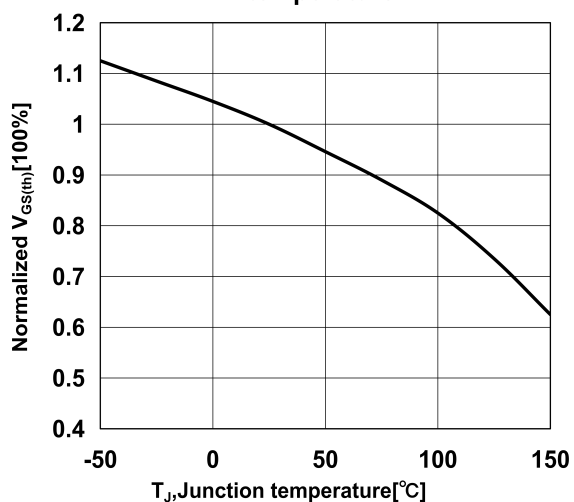
Gate Charge



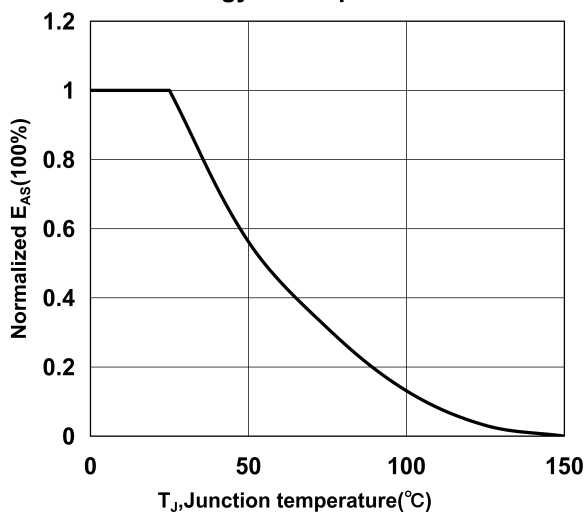
Body Diode Reverse Recovery Time vs Source to Drain Current



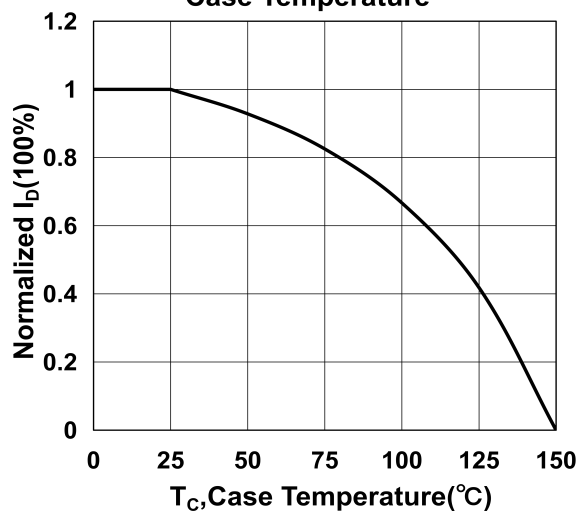
Normalized gate threshold voltage vs temperature



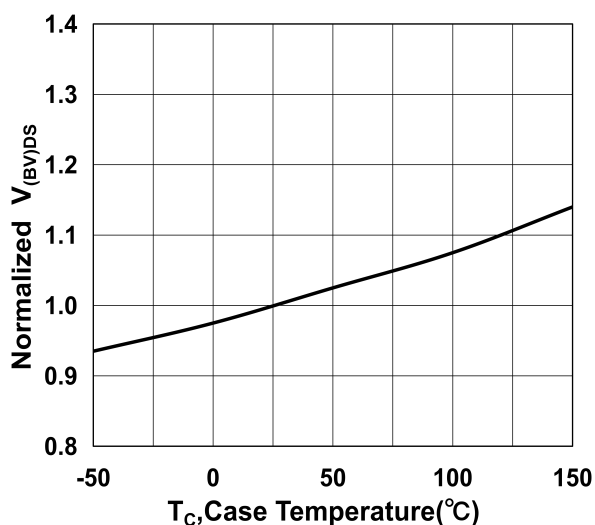
Normalized maximum avalanche energy vs temperature



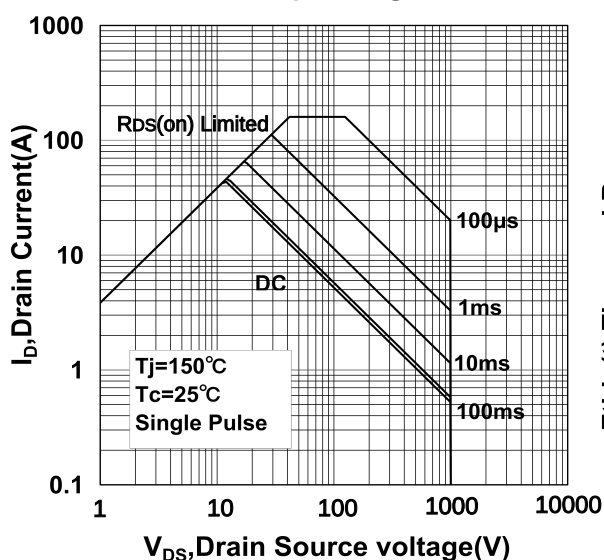
Maximum Drain Current vs
Case Temperature



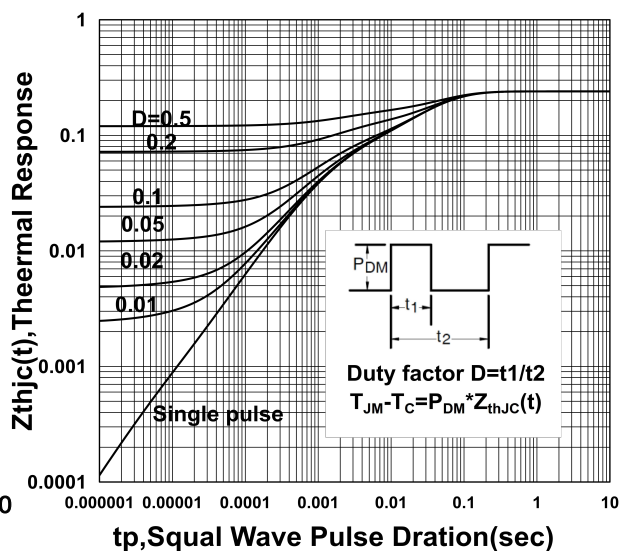
Normalized V_{(BV)DS} vs temperature



Safe Operating Area



Transient response Curve



Package Mechanical Data

