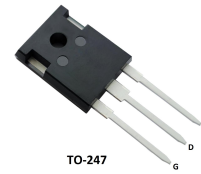


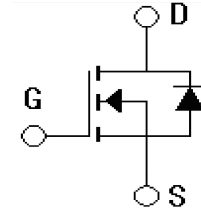
Features

- $V_{DS}=250V, I_D=150A, R_{DS(on), Type}=20m\Omega$
- Low gate charge
- Improved dv/dt capability



Applications

- High Efficiency Synchronous Rectification in SMPS
- Uninterruptible Power Supply
- High Speed Power Switching
- Hard Switched and High Frequency Circuits



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

Parameter	Symbol		Limit	Unit
Drain-Source Voltage	V _{DSS}		250	V
Transient Gate-Source Voltage	V _{GSM}		±30	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current-continuous	I _D		150	A
Drain Current-pulse (note 1)	I _{DM}		600	A
Single Pulsed Avalanche Energy (note 2)	E _{AS}		780	mJ
Peak Diode Recovery dv/dt(note 3)	dv/dt		24	V/ns
Maximum Power Dissipation	P _D	T _C =25℃	500	W
		T _C =100℃	200	
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃
Maximum Lead Temperature for Soldering Purposes	T _L		300	℃

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

Parameter	Symbol	Tests conditions	Min	Type	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	250	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	20	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 =250μA	3.0	4.0	5.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =35A (note 4)	-	20	22	mΩ
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz (note 5)	-	4100	-	pF
Output capacitance	C _{oss}		-	600	-	pF
Reverse transfer capacitance	C _{rss}		-	180	-	pF
Gate Resistance	R _G	f=1.0MHz	-	2.1	-	Ω
Switching-Characteristics						
Turn-On delay time	t _{d(on)}	V _{DS} =125V, I _D =75A, V _{GS} =10V	-	33	-	ns
Turn-On rise time	t _r		-	154	-	ns
Turn-Off delay time	t _{d(Off)}		-	55	-	ns
Turn-Off rise time	t _f		-	109	-	ns
Total Gate Charge	Q _g	V _{DS} =125V, I _D =75A, V _{GS} =10V (note 5)	-	130	-	nC
Gate-Source charge	Q _{gs}		-	22	-	nC
Gate-Drain charge	Q _{gd}		-	38	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =75A (note 4)	-	-	1.3	V
Diode Forward Current	I _S	TC=25℃	-	-	150	A
Reverse recovery time	T _{rr}	I _S =75A, di/dt=100A/μs	-	180		ns
Reverse recovery charge	Q _{rr}		-	1400		nC

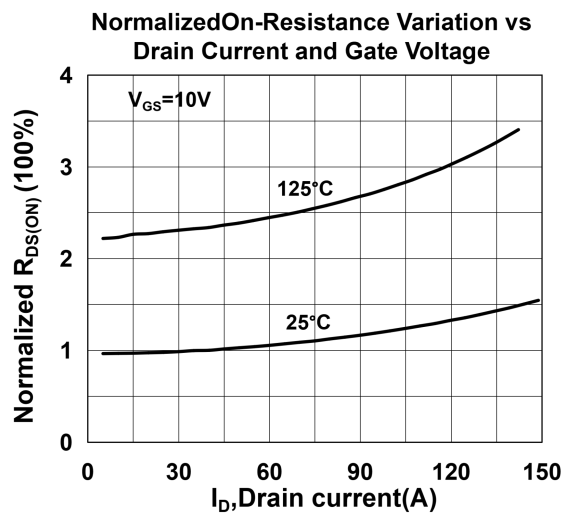
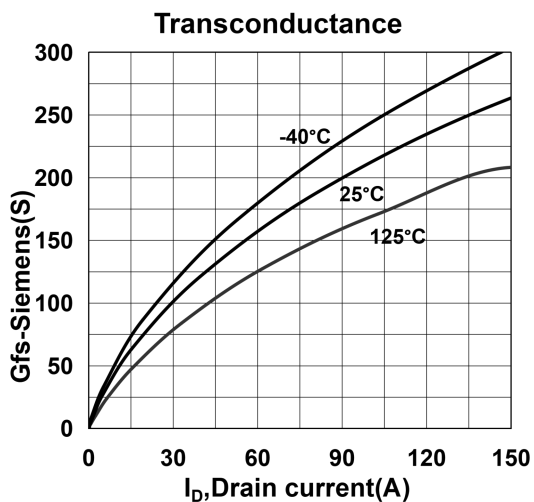
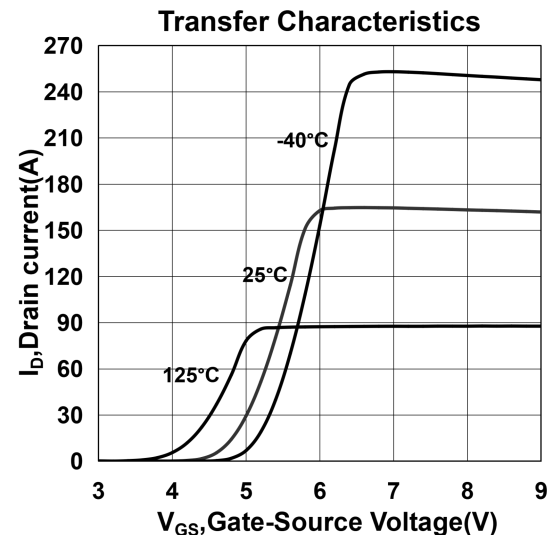
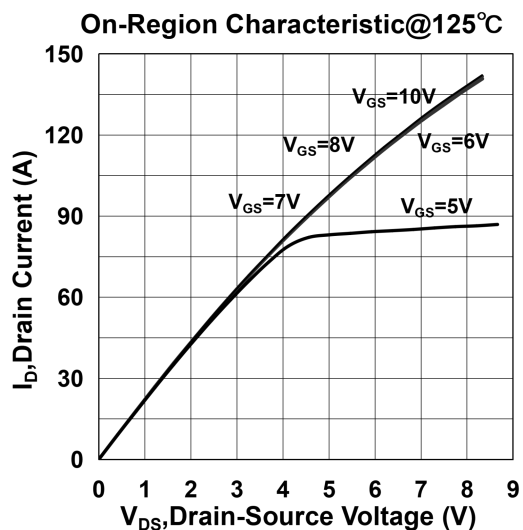
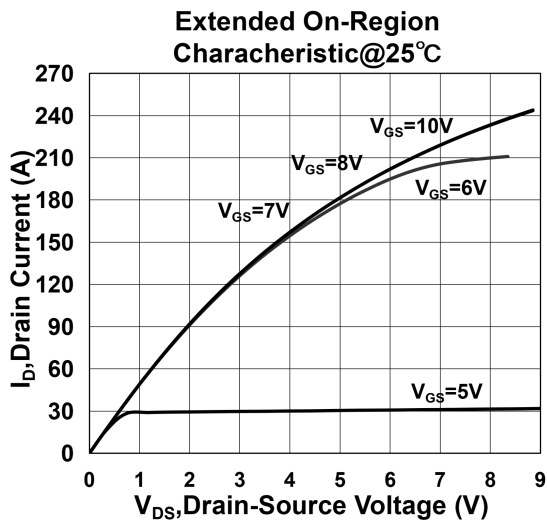
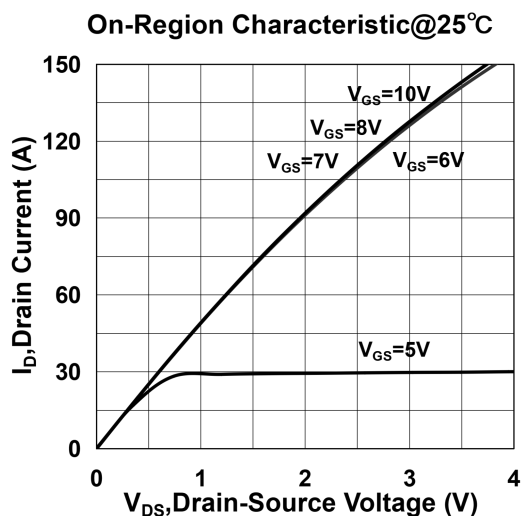
Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.25	$^\circ C/W$
Thermal Resistance, junction to Ambient	$R_{th(j-A)}$	40	$^\circ C/W$

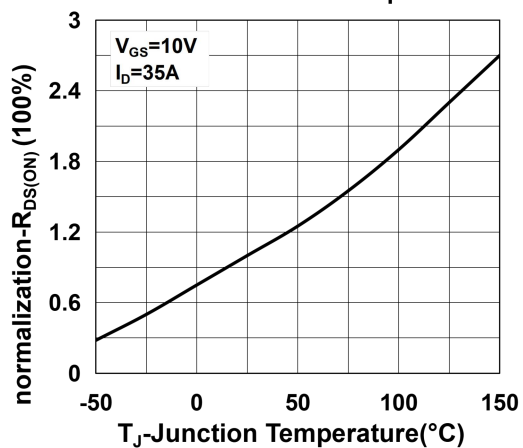
Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $L=0.5mH, I_{AS}=I_{AR}, V_{GS}=10V, V_{DD}=50V, R_G=25\Omega$, Limited by T_{jmax} , starting $T_j=25^\circ C$
3. $I_{SD}\leq 50A, di/dt=600A/\mu s, V_{DD}\leq BV_{DSS}$, Starting $T_j\leq 150^\circ C$
4. Pulse Test: Pulse Width $\leq 400\mu s$, Duty Cycle $\leq 2\%$
5. Essentially independent of operating temperature

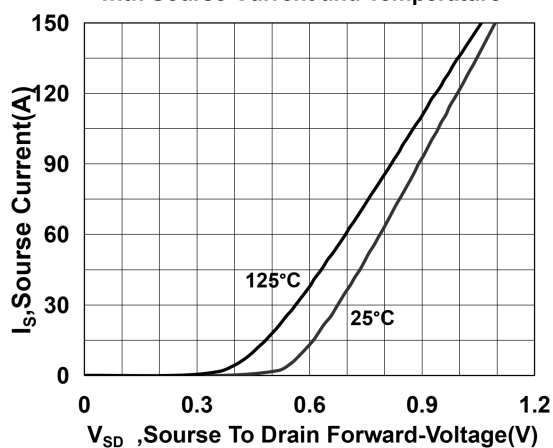
Electrical Characteristics



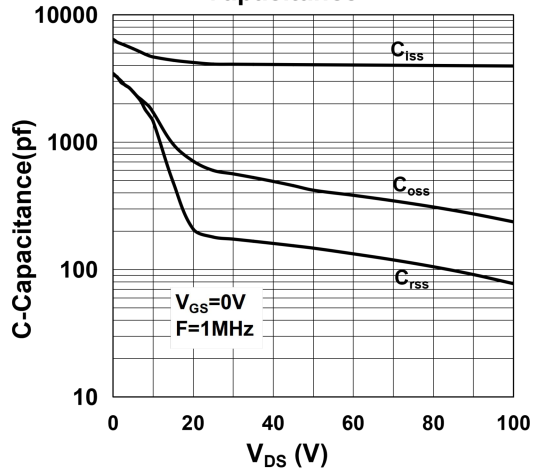
**Normalization On-Resistance
Variation vs Junction Temperature**



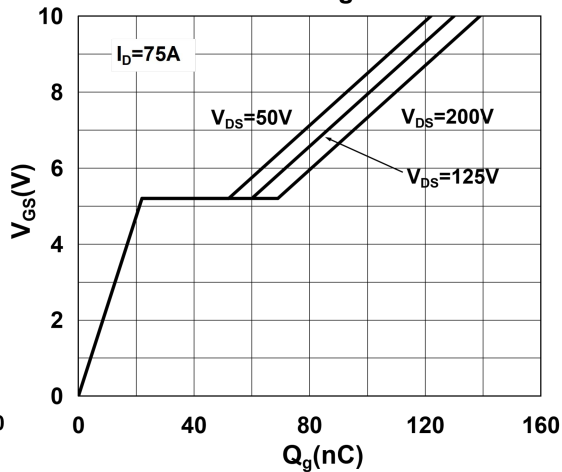
**Body Diode Forward Voltage Variation
with Source Current and Temperature**



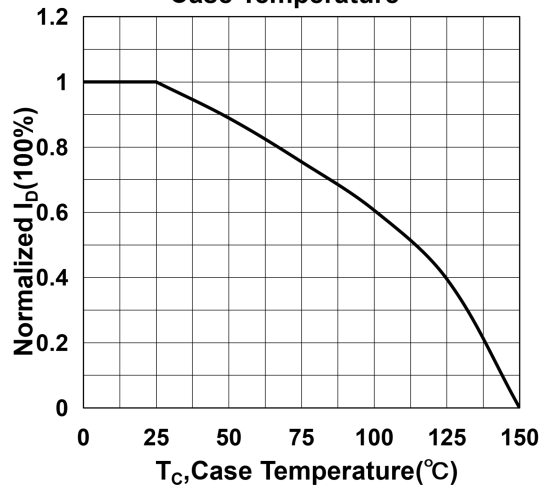
Capacitance



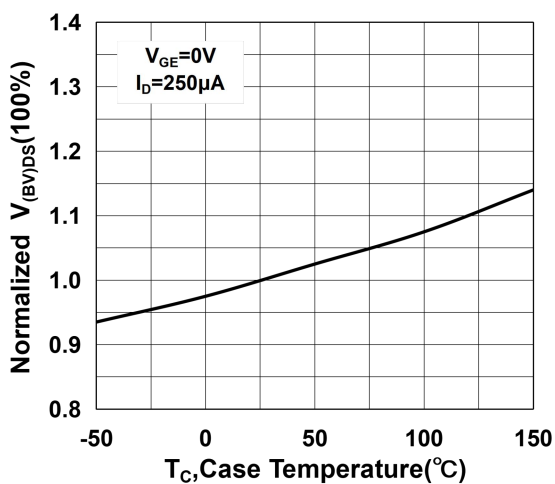
Gate Charge

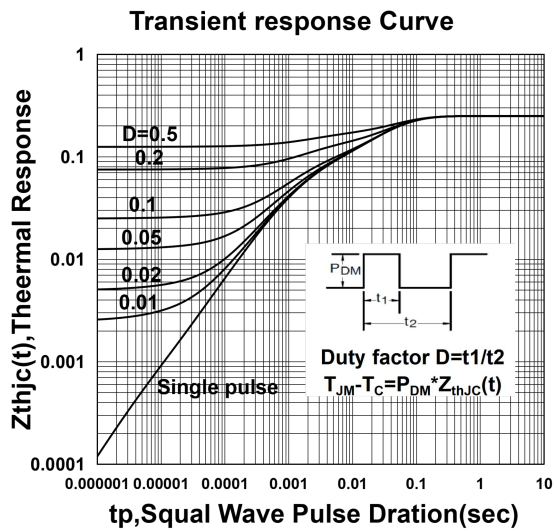
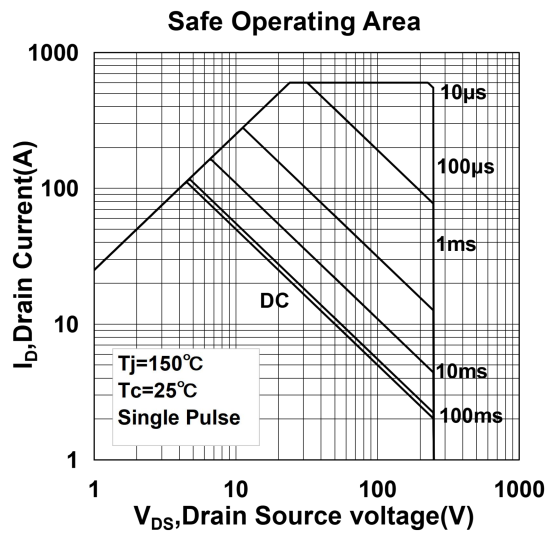
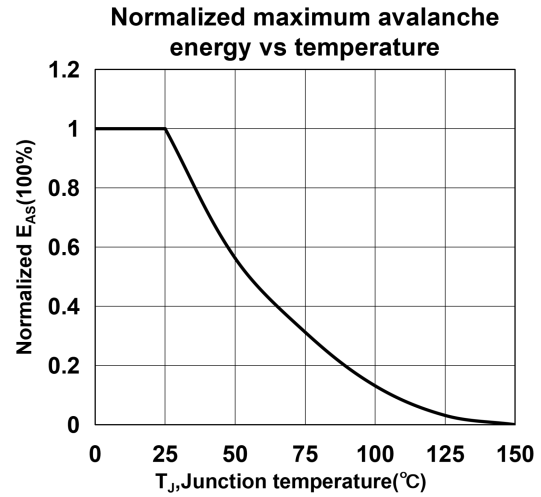
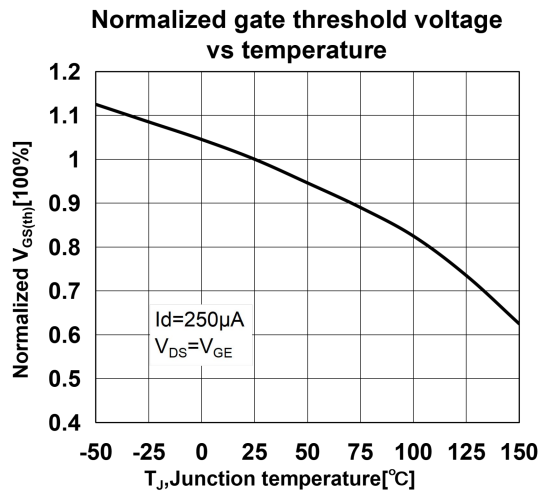


**Maximum Drain Current vs
Case Temperature**

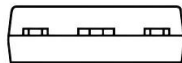
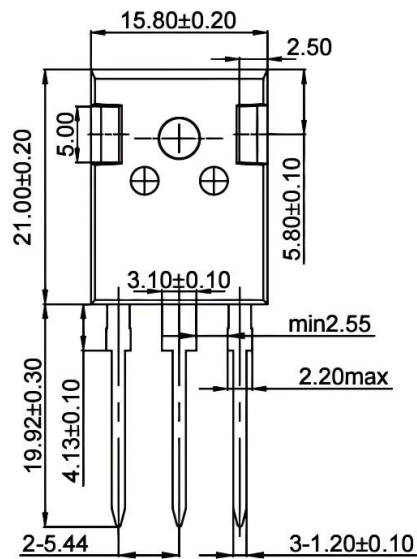


Normalized $V_{(BV)DS}$ vs temperature

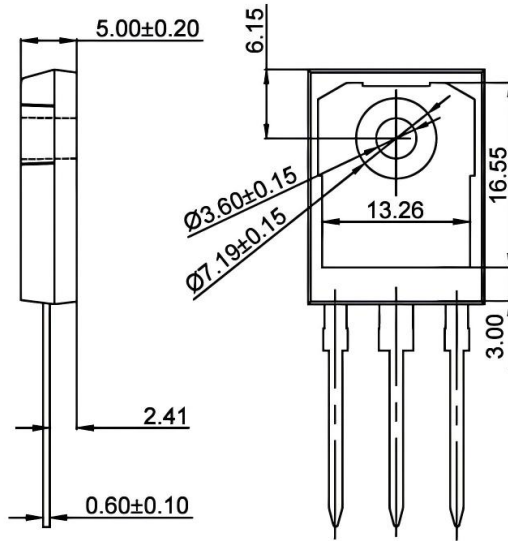




Package Mechanical DATA



NOTES: 1. surface roughness $R_a = 1.14 \pm 0.20 \mu m$
 2. Unmarked tolerance ± 0.15
 3. unit: mm



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