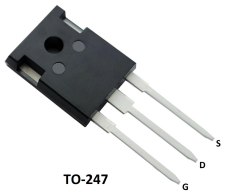
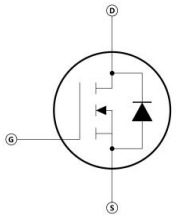
Features

- 100% avalanche tested
- Avalanche ruggedness
- Gate charge minimized
- Very low intrinsic capacitances
- High speed switching
- Very low on-resistance





Applications

- PV Inverter
- Switching applications

Absolute maximum ratings (T_C=25℃, unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-source voltage (V_{GS} = 0)	V_{DSS}	1700	V
Transient Gate- source voltage	V_{GSM}	± 30	
Continuous Gate- source voltage	V_{GSS}	± 20	
Drain current (continuous) at T_C = 25 °C	I_D	15	A
Drain current (continuous) at T_c = 100 °C		11	
Drain current (pulsed)	I_{DM}	60	
Total dissipation at T_C = 25 °C	P_D	176	W
Derating factor		1.41	W/℃
Maximum current during repetitive or single pulse avalanche(Pulse width limited by T_{Jmax})	I_{AS}	3	A
Single pulse avalanche energy (starting TJ = 25 °C, ID = IAR, VDD = 50 V)	E_{AS}	720	mJ
Operating junction temperature	T_J	-55 ~ 150	℃
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_J	300	

Electrical Characteristics (Tvj = 25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
On /off states						
Drain-source breakdown voltage	$V_{(BR)DSS}$	I_D = 1 mA, V_{GS} = 0	1700			V
Zero gate voltage drain current (V_{GS} = 0)	I_{DSS}	V_{DS} = Max rating V_{DS}=Max rating, T_C=125 °C			100 1000	μA
Gate-body leakage current (V_{DS} = 0)	I_{GSS}	V_{GS} = ± 20 V			±200	nA

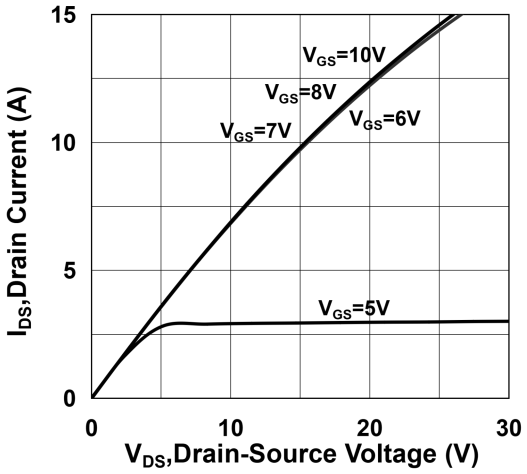
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250 μA	3	4	5	V
Static drain-source on resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 1A	-	1.75	2.5	Ω
Dynamics						
Forward transconductance	g_{fs}	V_{DS} = 15 V, I_D = 4A		7		S
Input capacitance	C_{iss}	V_{DS}=25V,f=1MHz,V_{GS}=0		5100		pF
Output capacitance	C_{oss}			505		
Reverse transfer capacitance	C_{rss}			42.5		
Total gate charge	Q_g	V_{DD}=1200V,I_D=15A V_{GS}=10V		42		nC
Gate-source charge	Q_{gs}			14		
Gate-drain charge	Q_{gd}			16		
Switching times						
Turn-on delay time	$t_{d(on)}$	V_{DD} = 750 V, I_D =7 A, R_G = 4.7 Ω, V_{GS} = 10 V		50		ns
Rise time	t_r			16		
Turn-off-delay time	$t_{d(off)}$			100		
Fall time	t_f			80		
Source drain diode						
Source-drain current	I_{SD}			15		A
Source-drain current (pulsed)	I_{SDM}			60		
Forward on voltage	V_{SD}	I_{SD}= 15 A, V_{GS}= 0		1.5		V
Reverse recovery time	t_{rr}	I_{SD}= 15A, di/dt=100A/μs V_{DD}= 60 V		950		ns
Reverse recovery charge	Q_{rr}			9		μC
Reverse recovery current	I_{RRM}			20		A
Reverse recovery time	t_{rr}	S_D=15A, di/dt=100A/μs V_{DD}= 60V T_J=150°C		900		ns
Reverse recovery charge	Q_{rr}			8.5		μC
Reverse recovery current	I_{RRM}			19		A

Thermal Characteristics

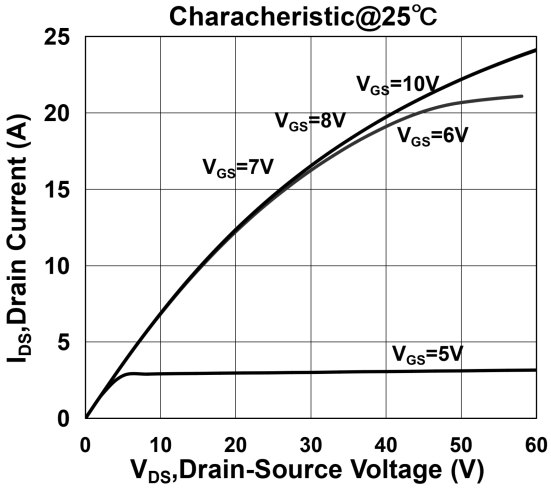
Parameter	Symbol	Value	Unit
Thermal resistance junction-case max	$R_{thj\text{-}case}$	0.71	℃/W
Thermal resistance junction-ambient max	$R_{thj\text{-}amb}$	50	

Electrical characteristics(curve)

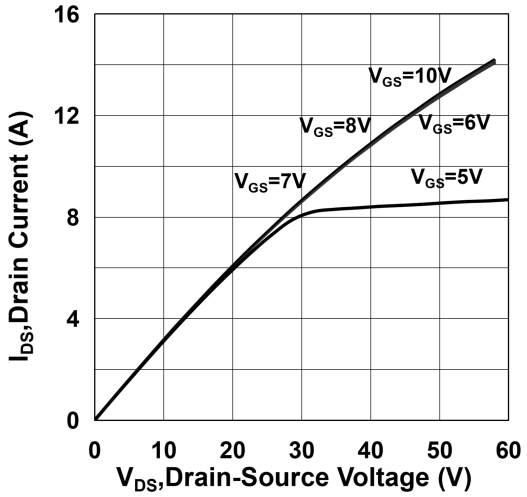
On-Region Characteristic@25℃



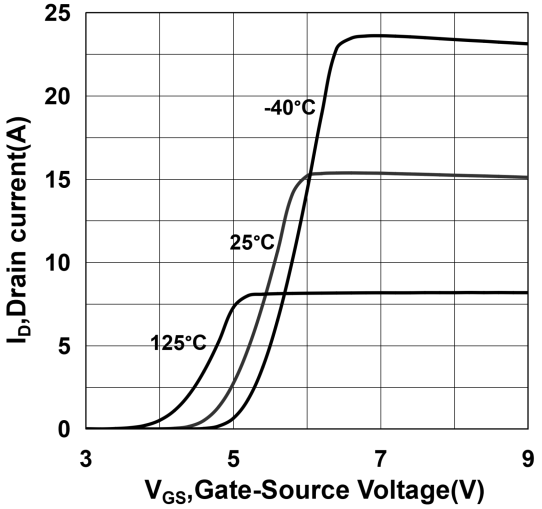
Extended On-Region Characheristic@25℃



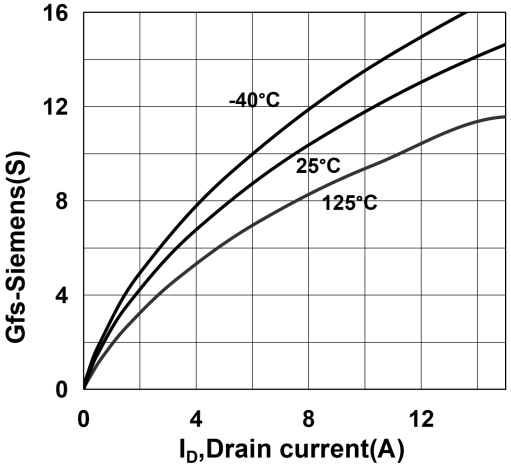
On-Region Characteristic@125℃



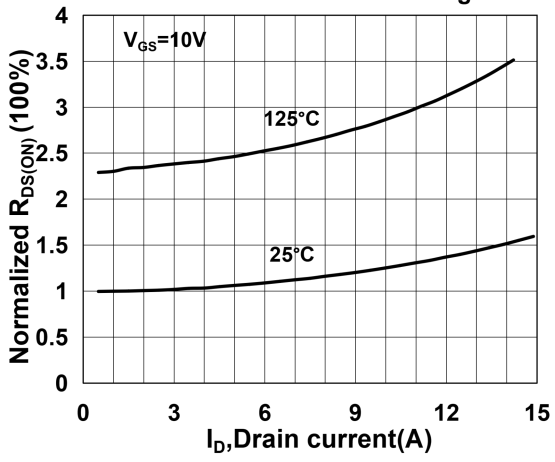
Transfer Characteristics



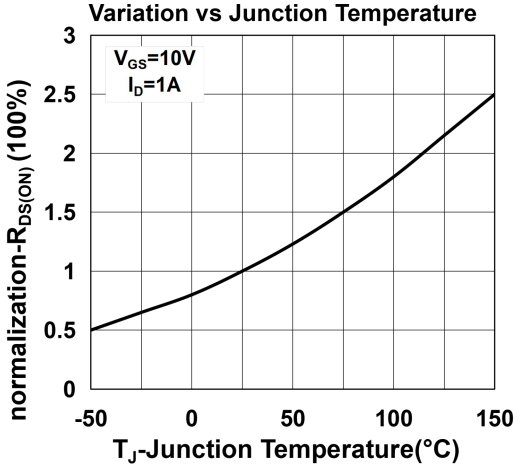
Transconductance



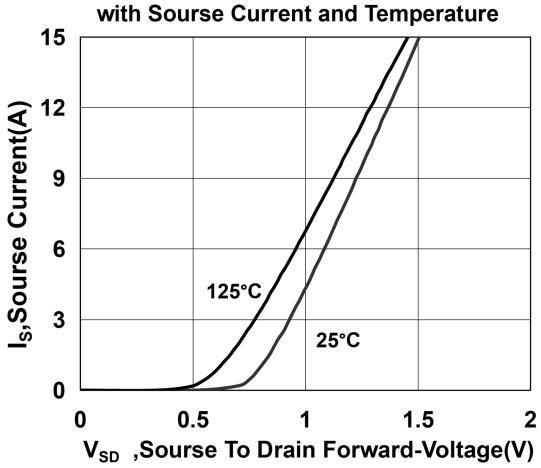
NormalizedOn-Resistance Variation vs Drain Current and Gate Voltage



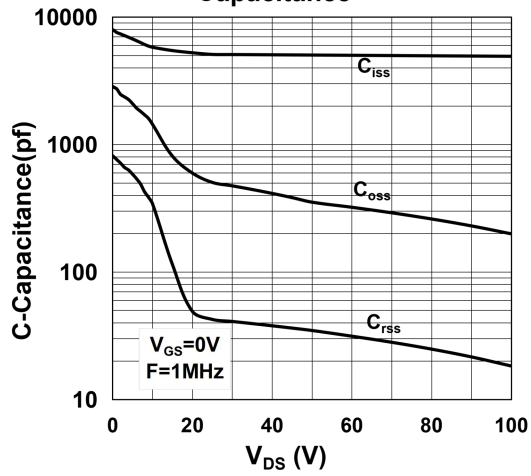
Normalization On-Resistance Variation vs Junction Temperature



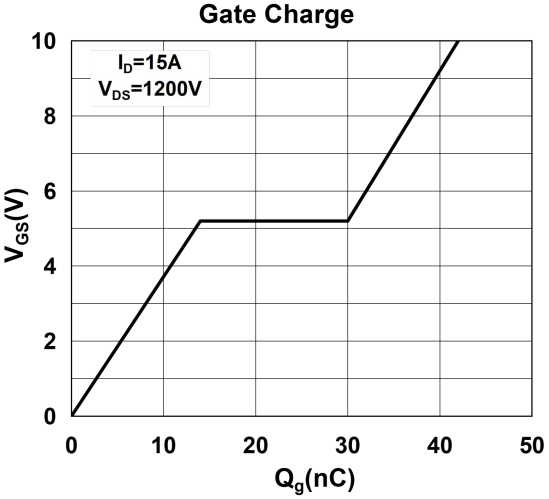
Body Diode Forward Voltage Variation with Sourse Current and Temperature



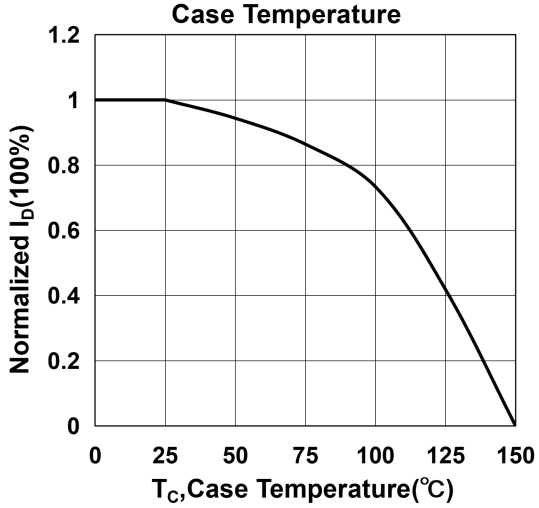
Capacitance



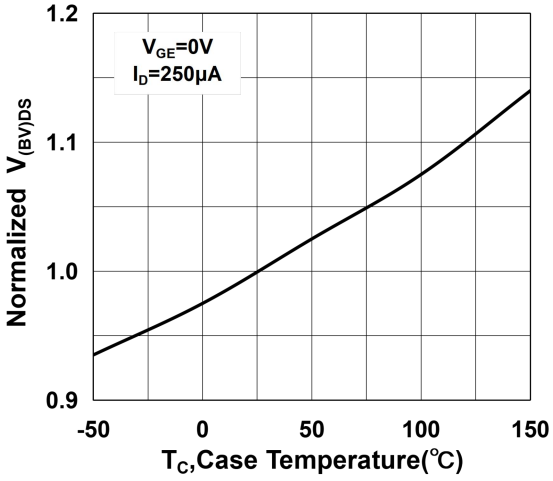
Gate Charge



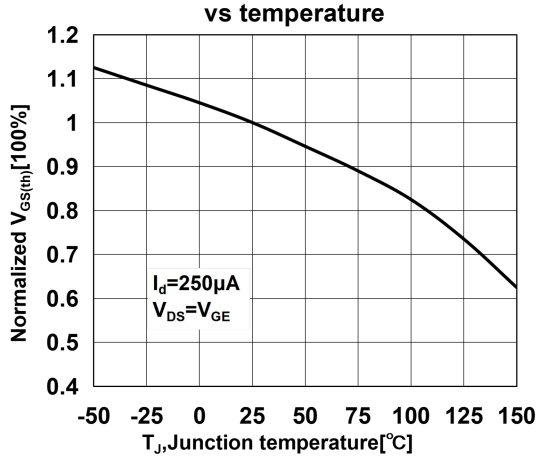
Maximum Drain Current vs Case Temperature



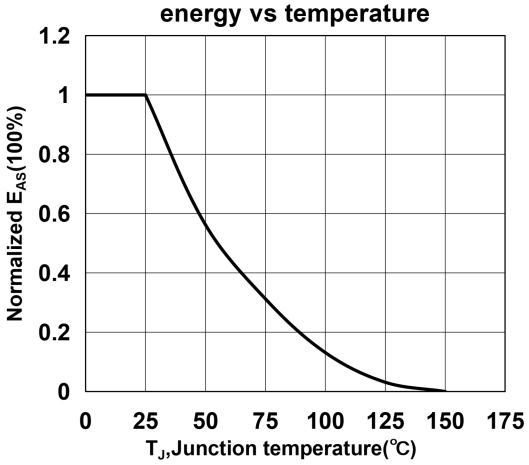
Normalized $V_{(BV)DS}$ vs temperature



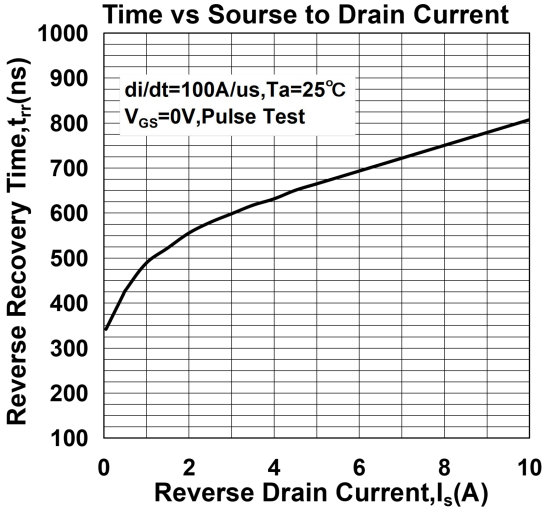
Normalized gate threshold voltage vs temperature



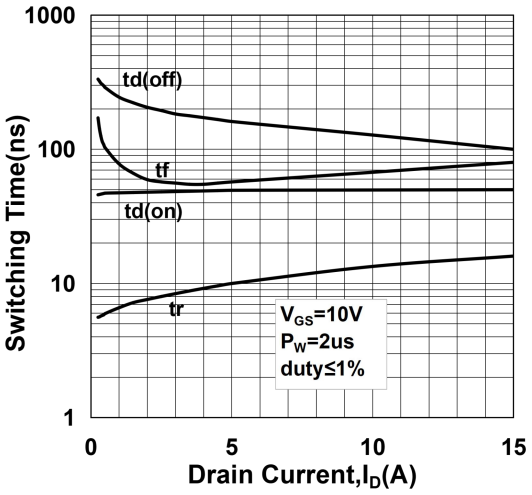
Normalized maximum avalanche energy vs temperature



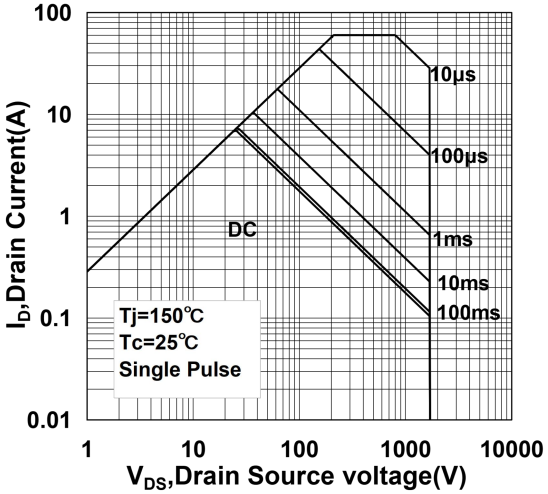
Body Diode Reverse Recovery Time vs Sourse to Drain Current



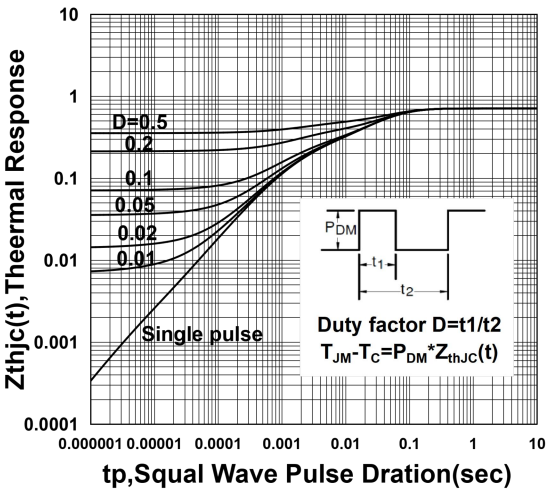
Switching Characteristics



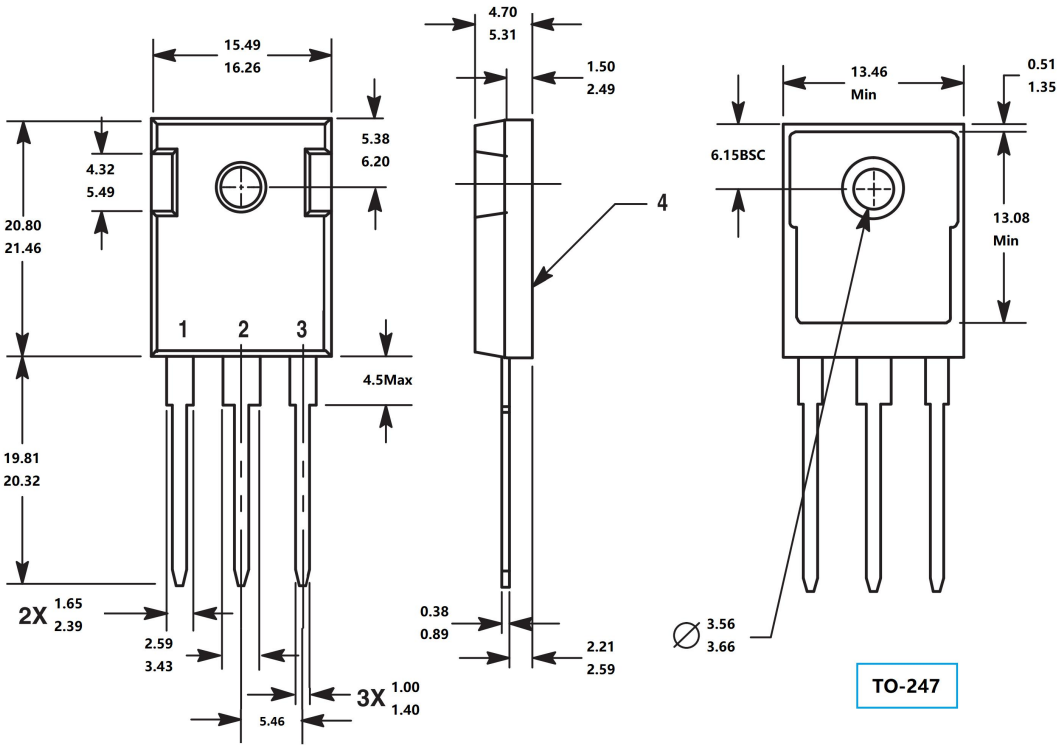
Safe Operating Area



Transient response Curve



Package outline dimension



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