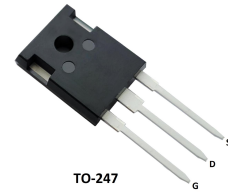


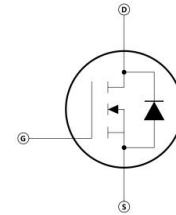
Features

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



Applications

- PV Inverter
- Switching applications



Electrical ratings

Absolute maximum ratings			
Parameter	Symbol	Value	Unit
Drain-source voltage ($V_{GS} = 0$)	V_{DSS}	1650	V
Transient Gate- source voltage	V_{GSM}	± 30	
Continuous Gate- source voltage	V_{GSS}	± 20	
Drain current (continuous) at $T_C = 25^\circ\text{C}$	I_D	12	A
Drain current (continuous) at $T_C = 100^\circ\text{C}$		9	
Drain current (pulsed)	I_{DM}	48	
Avalanche current	I_{AR}	8.81	A
Single pulse avalanche energy (starting $T_J=25^\circ\text{C}$, $L=20\text{mH}$, $I_D=I_{AR}$, $V_{DD}=50\text{V}$)	E_{AS}	800	mJ
Total dissipation at $T_C = 25^\circ\text{C}$	P_D	125	W
Derating factor		1	W/ $^\circ\text{C}$
Operating junction temperature	T_J	-55 ~ 150	$^\circ\text{C}$
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	$^\circ\text{C}$

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

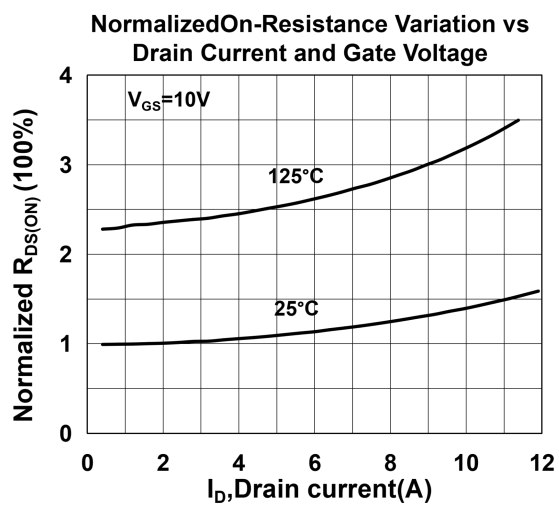
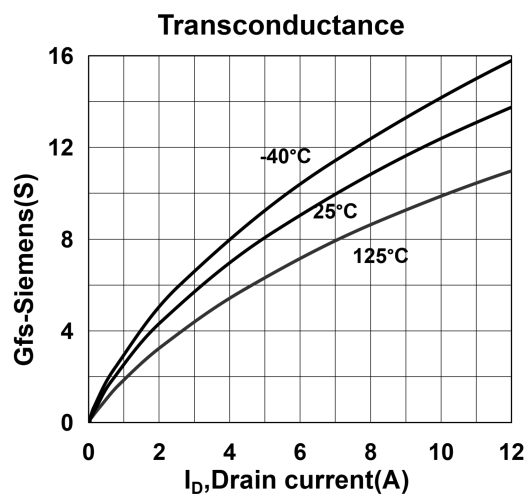
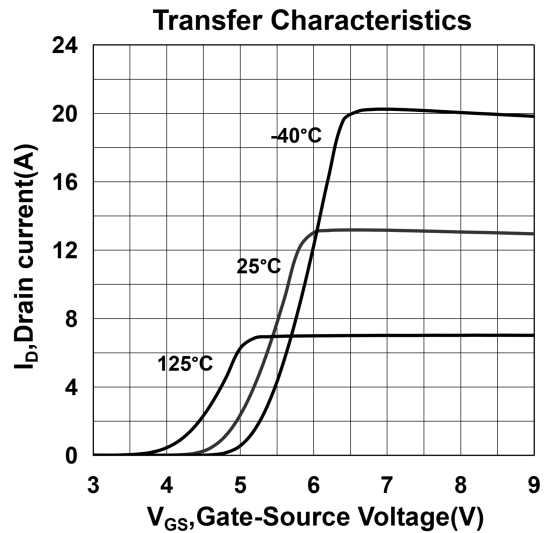
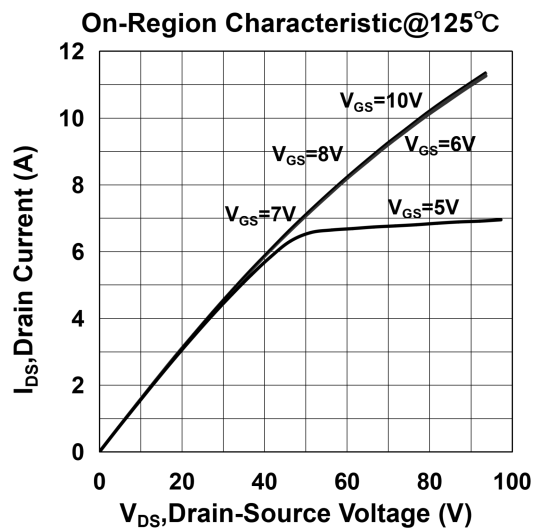
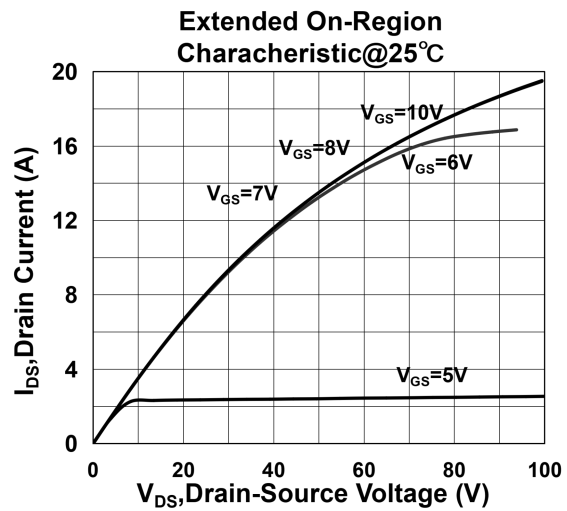
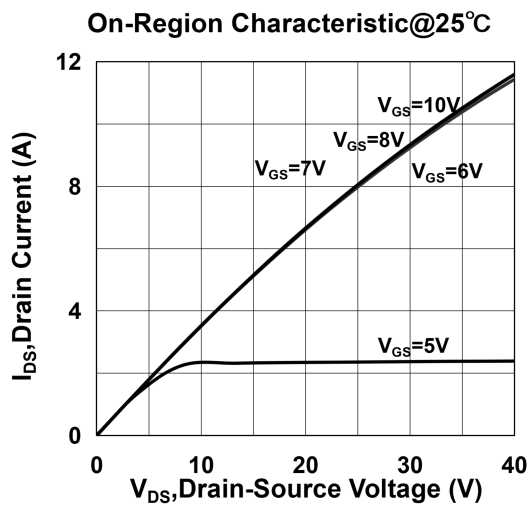
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
On /off states						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D = 1\text{mA}$, $V_{GS} = 0$	1650			V
Zero gate voltage drain current ($V_{GS} = 0$)	I_{DSS}	$V_{DS} = \text{Max rating}$ $V_{DS} = \text{Max rating}$, $T_C = 125^\circ\text{C}$			100 1000	μA
Gate-body leakage current ($V_{DS} = 0$)	I_{GSS}	$V_{GS} = \pm 20\text{V}$			± 200	nA

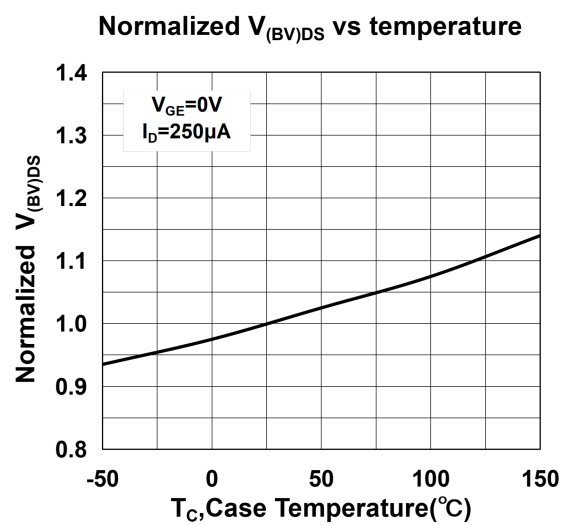
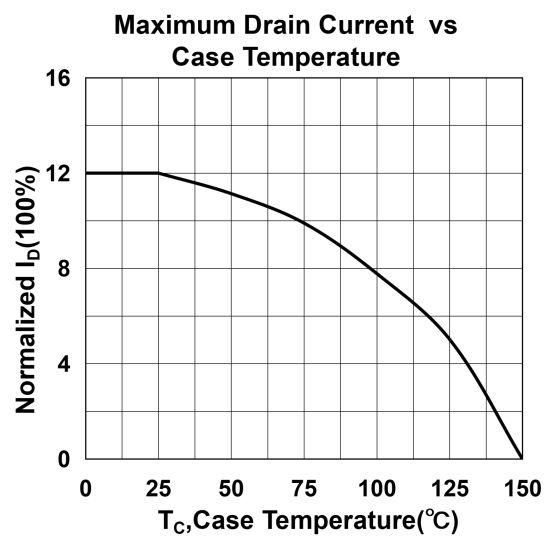
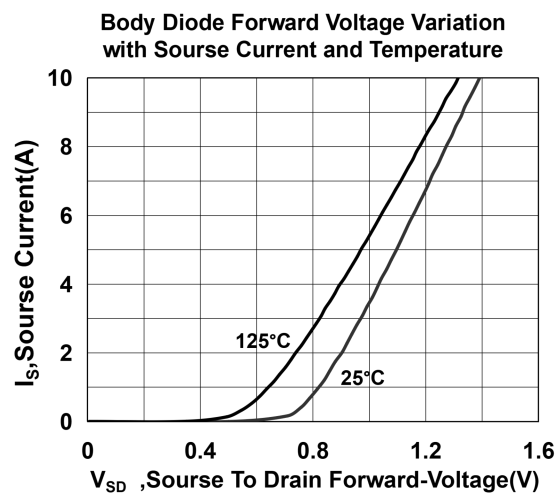
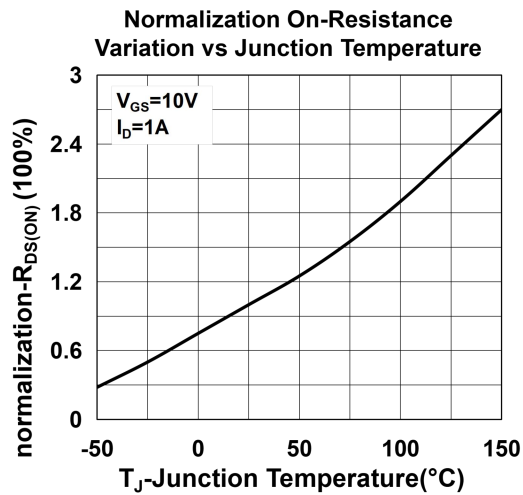
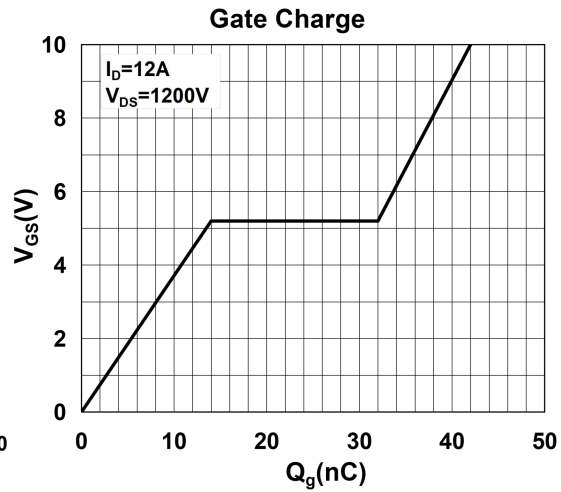
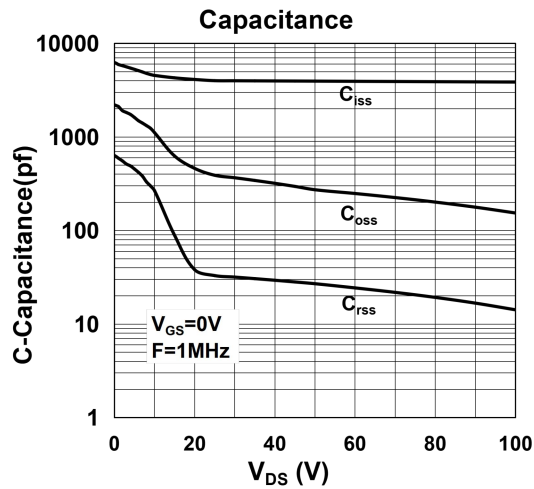
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	3	4	5	V
Static drain-source on resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 1A	-	2.7	3.2	Ω
Dynamic						
Forward transconductance	g _{fs}	V _{DS} = 15 V, I _D = 4A		7		S
Input capacitance	C _{iss}	V _{DS} =25V,f=1MHz,V _{GS} =0		4000		pF
Output capacitance	C _{oss}			390		
Reverse transfer capacitance	C _{rss}			33		
Total gate charge	Q _g	V _{DD} =1200V,I _D =12A V _{GS} =10V		42		nC
Gate-source charge	Q _{gs}			14		
Gate-drain charge	Q _{gd}			18		
Switching times						
Turn-on delay time	t _{d(on)}	V _{DD} = 750 V, I _D = 6 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}			12		A
Source-drain current (pulsed)	I _{SDM}			48		
Forward on voltage	V _{SD}	I _{SD} = 12 A, V _{GS} = 0		1.5		V
Reverse recovery time	t _{rr}	I _{SD} = 12A, 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 =12A, 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

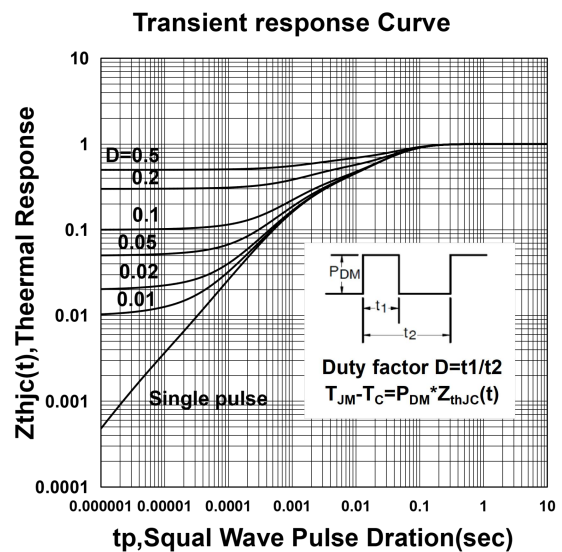
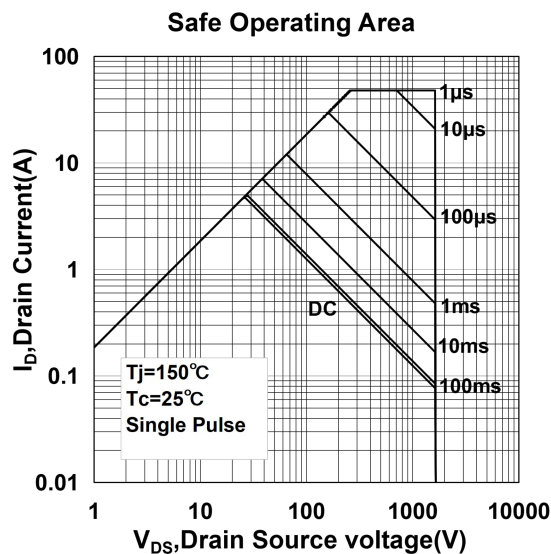
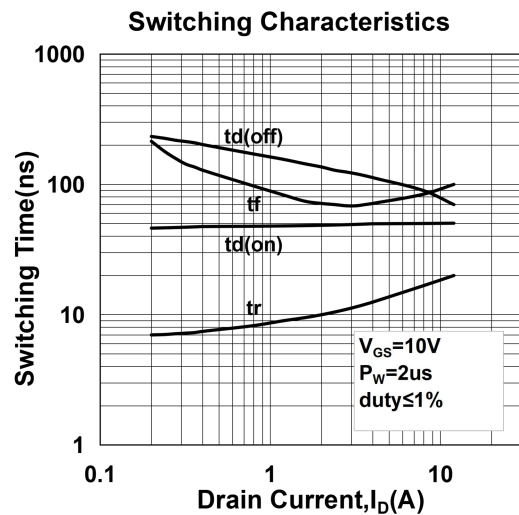
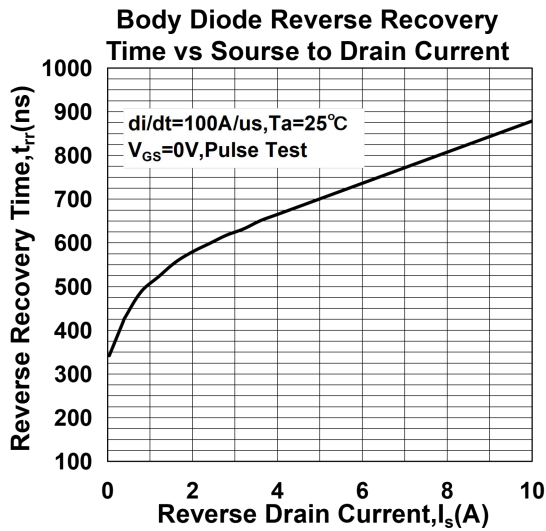
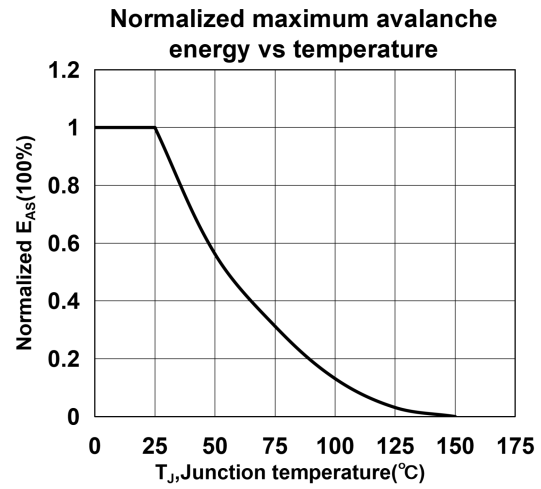
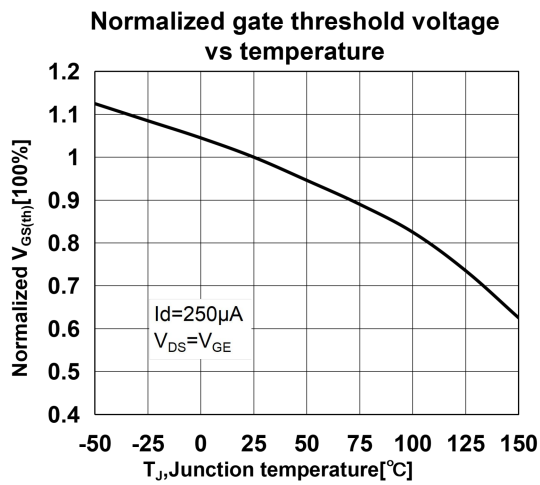
Thermal characteristics

Parameter	Symbol	Value	Unit
Thermal resistance junction-case max	$R_{thj-case}$	1	$^\circ C/W$
Thermal resistance junction-ambient max	$R_{thj-amb}$	50	

Electrical characteristics







Package outline dimension

