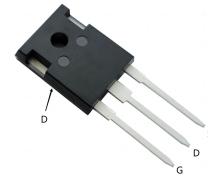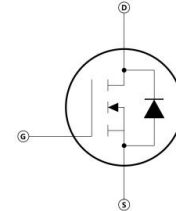## Features

- 100% avalanche tested
- Fast Intrinsic Diode
- Gate charge minimized
- Very low intrinsic capacitances
- High speed switching

Applications

- High Voltage Power Supplies
- PV Inverter
- Switching applications

Electrical ratings

Absolute maximum ratings			
Parameter	**Symbol**	**Value**	**Unit**
Drain-source voltage (V_{GS} = 0)	V_{DS}	3000	V
Gate- source voltage	V_{GS}	± 30	
Drain current (continuous) at T_C = 25 °C	I_D	2.0	A
Drain current (continuous) at T_C = 100 °C		1.6	
Drain current (pulsed)	I_{DM}	6.0	
Total dissipation at T_C = 25 °C	P_D	520	W
Avalanche Current	I_{AR}	1.3	A
Single pulse avalanche energy (starting T_J = 25 °C, I_D = I_{AR}, V_{DD} = 50 V,L=20mH)	E_{AS}	16.9	mJ
Operating junction temperature	T_J	-55 ~ 150	℃
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	℃
Mounting Torque	M_d	1.13	N・m
Weight	G	6	g

Electrical Characteristics (T_{vj} = 25°C unless otherwise specified)

On /off states						
Parameter	**Symbol**	**Test conditions**	**Min**	**Typ**	**Max**	**Unit**
Drain-source breakdown voltage	$V_{(BR)DSS}$	I_D = 250 μA, V_{GS} = 0	3000			V
Zero gate voltage drain current (V_{GS} = 0)	I_{DSS}	V_{DS} = Max rating V_{DS}=Max rating, T_C=125 °C			10 250	μA

Gate-body leakage current (V_{DS} = 0)	I_{GSS}	V_{GS} = ± 30 V			±200	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 250 µA	3.5	-	5.5	V
Static drain-source on resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 2A	-	19	25	Ω

Dynamic

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward transconductance	g_{fs}	V_{DS} = 50 V, I_D = 2A	1.2	2.7		S
Input capacitance	C_{iss}	V_{DS}=25V,f=1MHz,V_{GS}=0		2500		pF
Output capacitance	C_{oss}			191		
Reverse transfer capacitance	C_{rss}			55		
Total gate charge	Q_g	V_{DD}=1500V,I_D=2A V_{GS}=10V		80		nC
Gate-source charge	Q_{gs}			12		
Gate-drain charge	Q_{gd}			48		

Switching times

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Turn-on delay time	$t_{d(on)}$	**Resistive load** V_{DD} = 1500 V, I_D =2A, V_{GS} = 10 V, R_G = 5Ω(External)		19		ns
Rise time	t_r			23		
Turn-off-delay time	$t_{d(off)}$			52		
Fall time	t_f			53		

Source drain diode

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Source-drain current	I_{SD}				2	A
Source-drain current (pulsed)	I_{SDM}				8	
Forward on voltage	V_{SD}	I_{SD}= 1A, V_{GS}= 0		0.9	1.5	V
Reverse recovery time	t_{rr}	I_{SD}=2A, -di/dt=100A/µs V_{DD}= 1500V		600		ns
Reverse recovery charge	Q_{rr}			540		nC
Reverse recovery current	I_{RRM}			1.2		A
Reverse recovery time	t_{rr}	I_{SD}=2A, di/dt=100A/µs V_{DD}= 1500 V T_J=125°C		800		ns
Reverse recovery charge	Q_{rr}			420		nC
Reverse recovery current	I_{RRM}			1.5		A

| Thermal data			
Parameter	**Symbol**	**Value**	**Unit**
Thermal resistance junction-case max	$R_{thj-case}$	0.21	W/℃
Thermal resistance junction-ambient max	$R_{thj-amb}$	50	

Electrical characteristics

On-Region Characteristic@25℃

Extended On-Region Characheristic@25℃

On-Region Characteristic@125℃

Transfer Characteristics
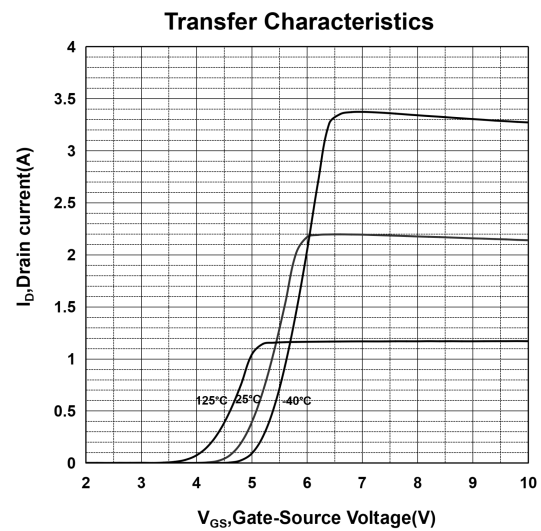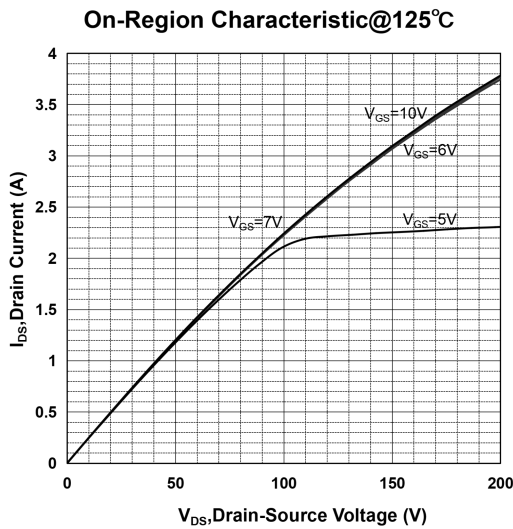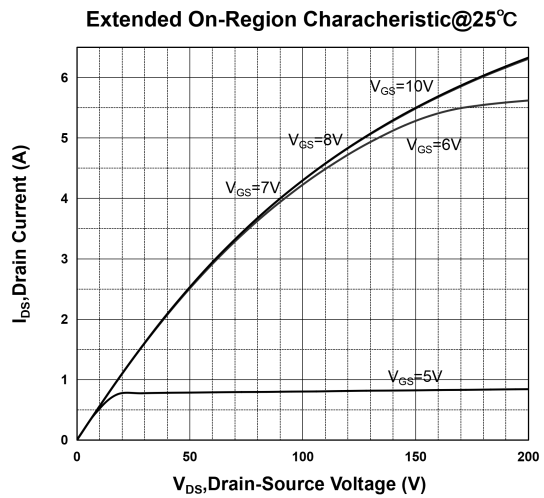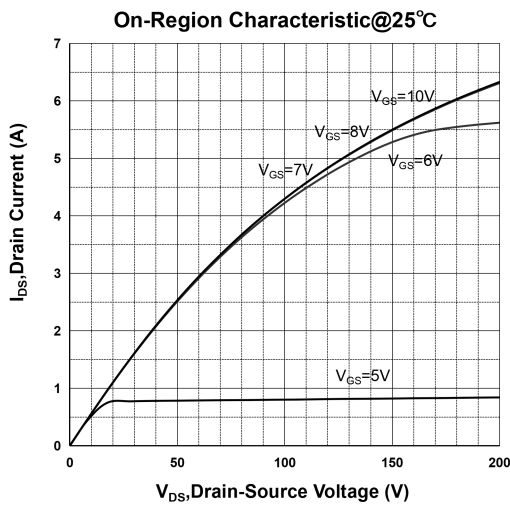
Transcendance
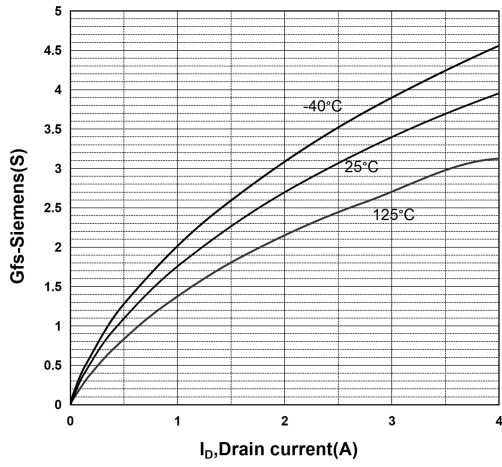
On-Resistance Variation vs Drain Current and Gate Voltage
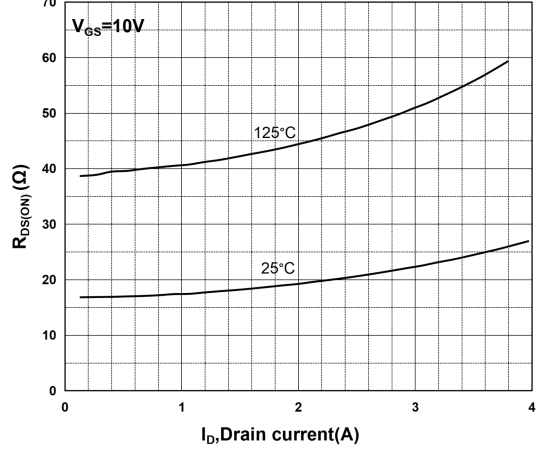
Normalization On-Resistance Variation vs Junction Temperature
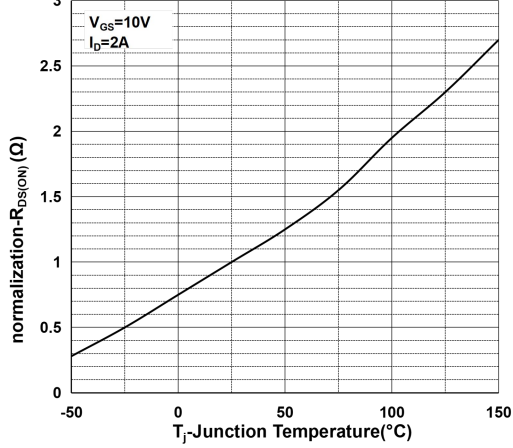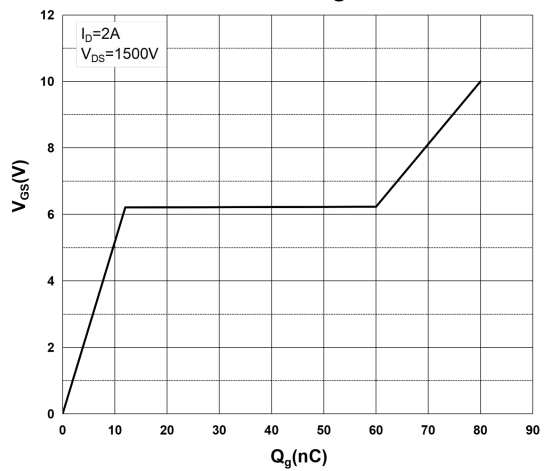

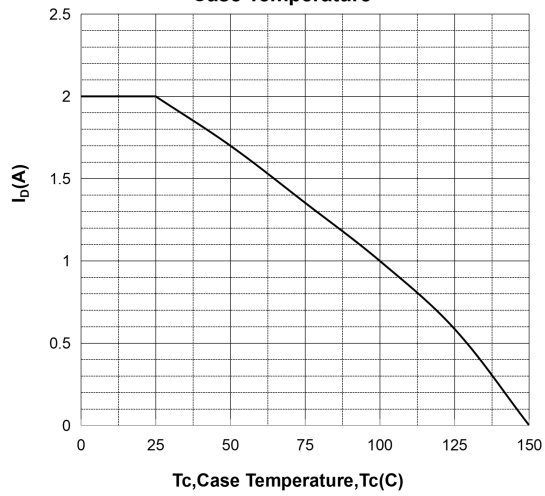## Body Diode Forward Voltage Variation with Sourse Current and Temperature
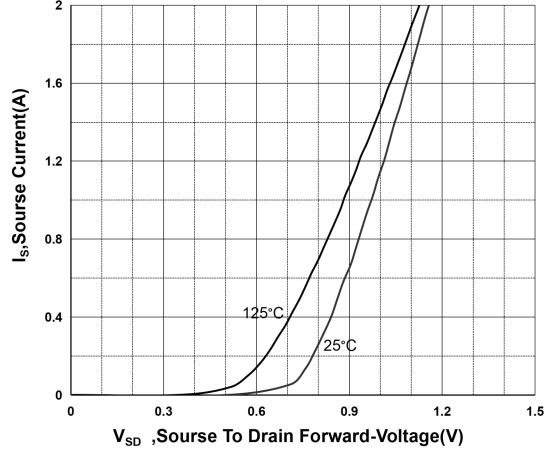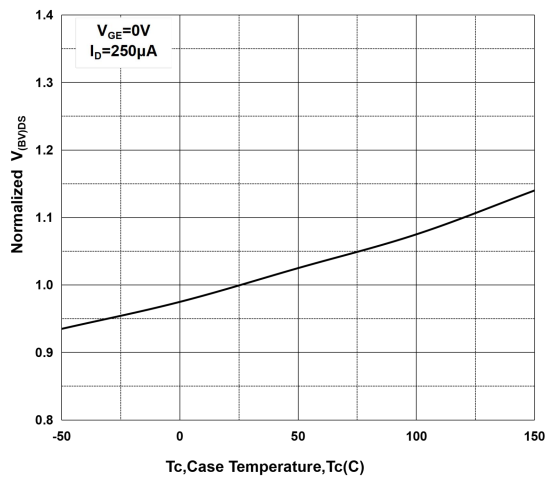

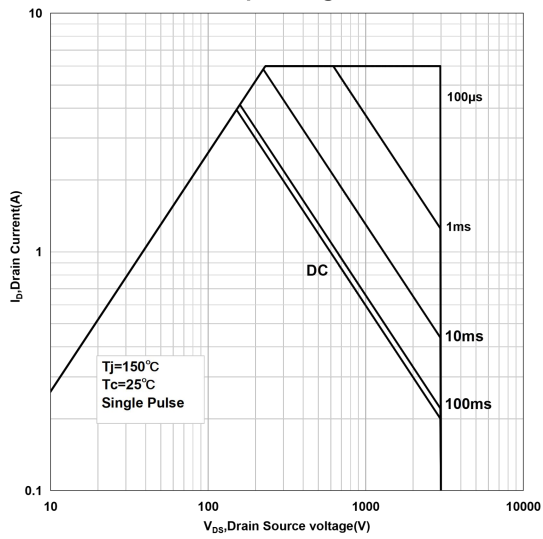## Capacitance
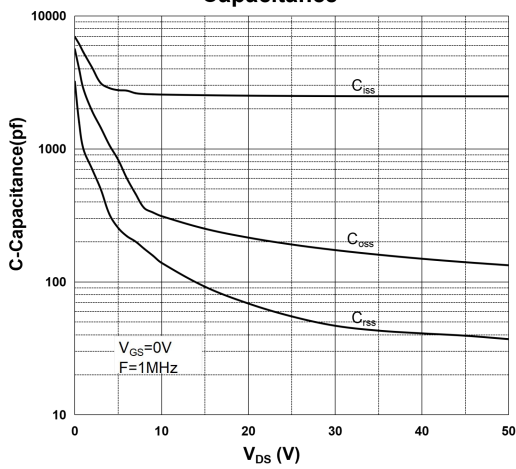
Gate Charge

Maximum Drain Current vs Case Temperature
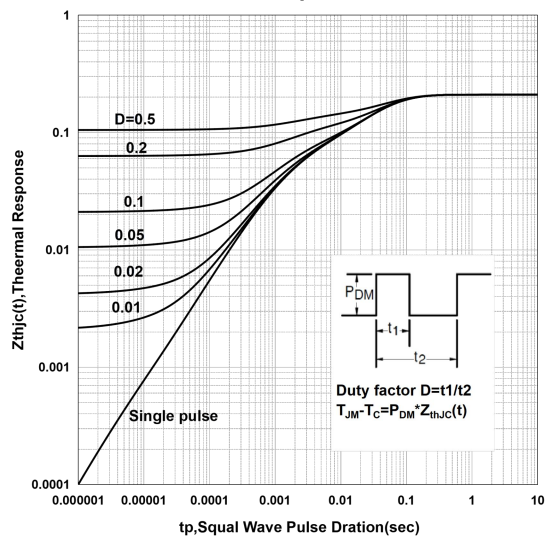

Normalized V_(BV)DS vs temperature

Safe Operating Area

Transient response Curve

Package outline dimension

TO-247