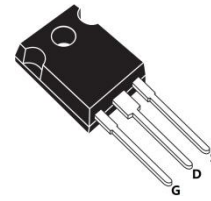


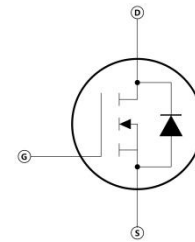
Features

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



Applications

- Welder
- UPS
- PV Inverter
- Switching applications



Electrical ratings

Absolute maximum ratings				
Parameter	Symbol		Value	Unit
Drain-source voltage ($V_{GS} = 0$)	V_{DSS}		1500	V
Transient Gate- source voltage	V_{GSM}		± 30	
Continuous Gate- source voltage	V_{GSS}		± 20	
Drain current (continuous)	I_D	$T_C = 25\text{ }^{\circ}\text{C}$	9	A
		$T_C = 100\text{ }^{\circ}\text{C}$	6	
Drain current-pulsed(note 1)	I_{DM}		36	
Total dissipation	P_{TOT}	$T_C = 25\text{ }^{\circ}\text{C}$	657	W
		$T_C = 100\text{ }^{\circ}\text{C}$	263	W
Operating junction temperature	T_J		-55 to 150	$^{\circ}\text{C}$
Storage temperature	T_{stg}			
Maximum lead temperature for soldering purpose	T_L		300	

Avalanche characteristics

Parameter	Symbol	Max value	Unit
Avalanche current, repetitive or not-repetitive (pulse width limited by T_J max)	I_{AR}	9	A
Single pulse avalanche energy (starting $T_J = 25\text{ }^{\circ}\text{C}$, $I_D = I_{AR}$, $V_{DD} = 50\text{ V}$)	E_{AS}	800	mJ

Electrical Characteristics (T_{vj} = 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 =250μA, V _{GS} = 0	1500			V
Zero gate voltage drain current (V _{GS} = 0)	I _{DSS}	V _{DS} = V _{DSS} V _{DS} =V _{DSS} , T _C =125 °C			10 500	μA
Gate-body leakage current (V _{DS} = 0)	I _{GSS}	V _{GS} = ± 20 V			± 100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	2.5	-	5.5	V
Static drain-source on Resistance(note 2)	R _{DS(on)}	V _{GS} = 10V, I _D = 1A	-	2.0	2.8	Ω
Dynamics						
Forward Transconductance(note 2)	g _{fs}	V _{DS} = 20 V, I _D = 5A		7		S
Input capacitance	C _{iss}	V _{DS} =25V,f=1MHz, V _{GS} =0(note 3)		3150		pF
Output capacitance	C _{oss}			300		
Reverse transfer capacitance	C _{rss}			25		
Total gate charge	Q _g	V _{DD} =1200V,I _D =9A V _{GS} =10V(note 3)		80		nC
Gate-source charge	Q _{gs}			14		
Gate-drain charge	Q _{gd}			48		
Switching times						
Turn-on delay time	t _{d(on)}	V _{DD} = 750 V, I _D = 4 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}			9		A
Source-drain current (pulsed)	I _{SDM}			40		
Forward on voltage	V _{SD}	I _{SD} = 1 A, V _{GS} = 0(note 2)		0.68	1.2	V
Reverse recovery time	t _{rr}	I _{SD} = 9A, 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}	I _D =9A, 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

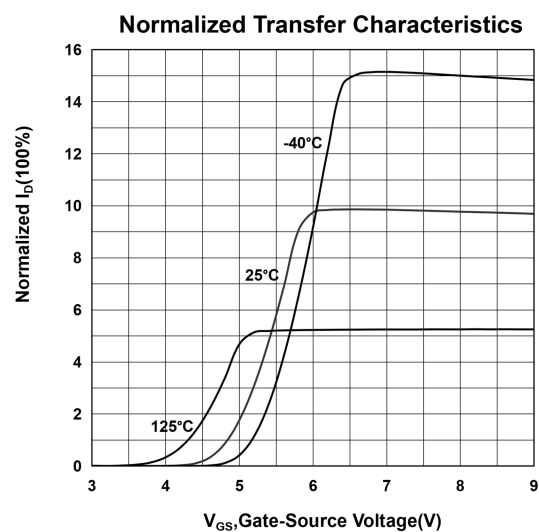
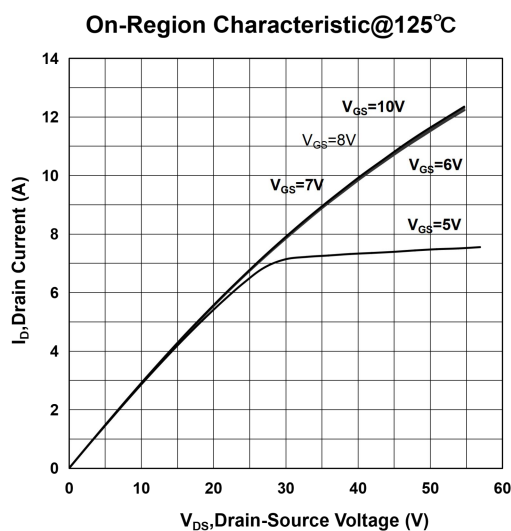
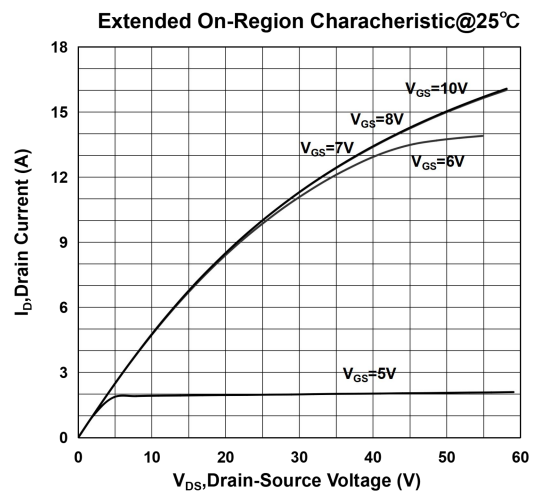
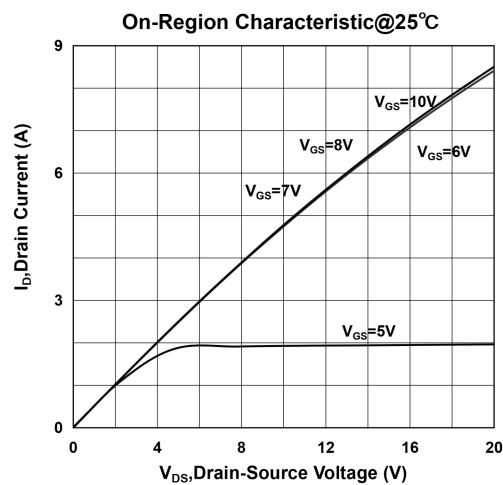
Thermal data

Parameter	Symbol	Value	Unit
Thermal resistance junction-case max	$R_{thj-case}$	0.19	°C/W
Thermal resistance junction-ambient max	$R_{thj-amb}$	50	

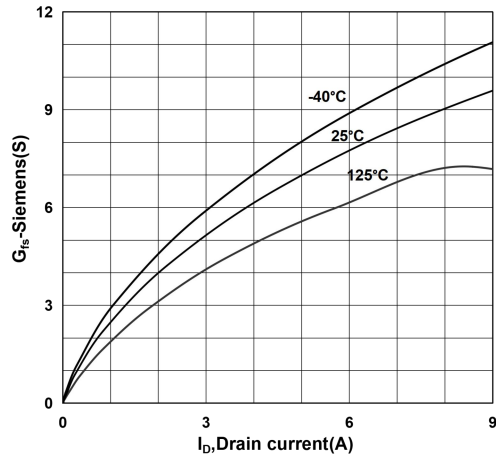
Notes:

1. Pulse width limited by maximum junction temperature
2. Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
3. Essentially independent of operating temperature

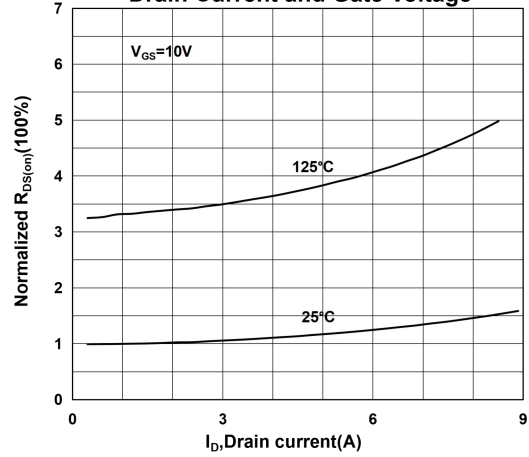
Electrical characteristics



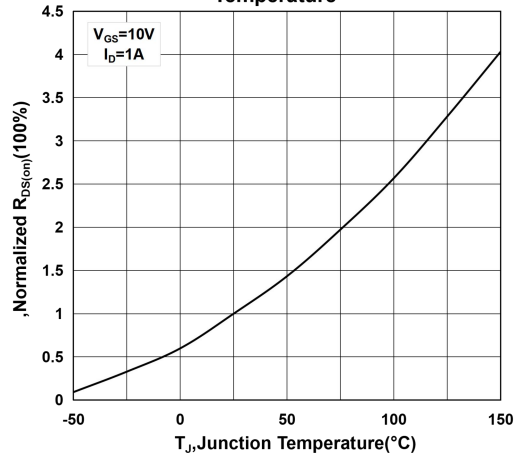
Transconductance



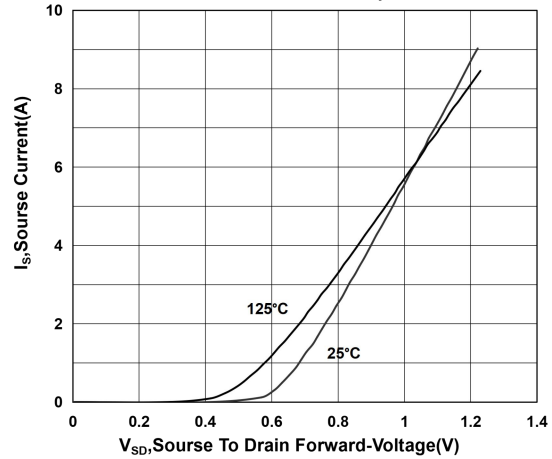
Normalized On-Resistance Variation vs Drain Current and Gate Voltage



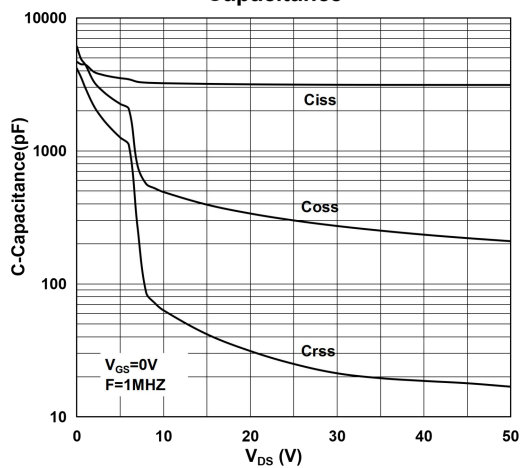
Normalized On-Resistance Variation vs Temperature



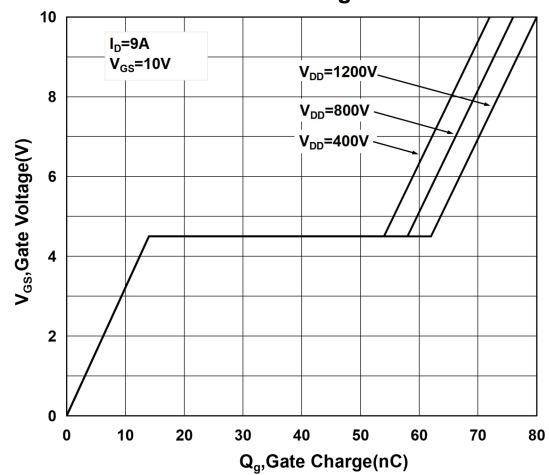
Body Diode Forward Voltage Variation with Source Current and Temperature

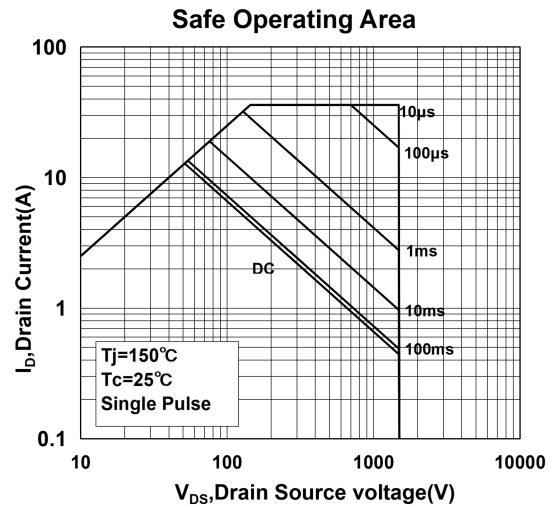
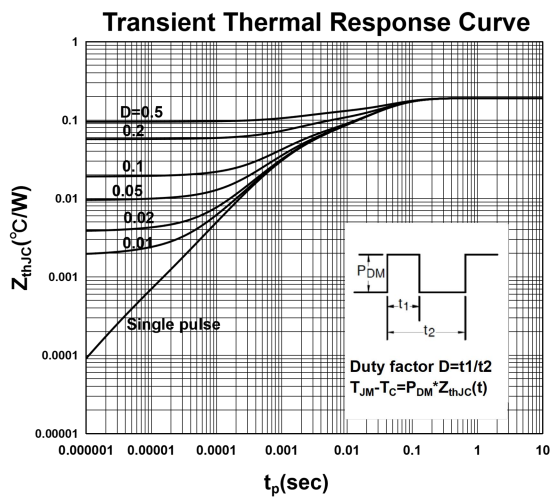
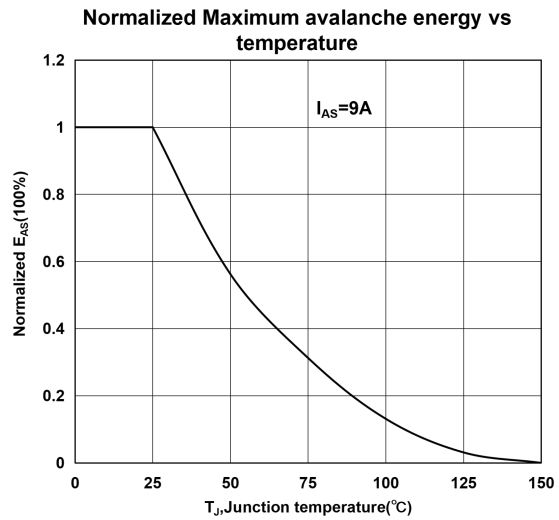
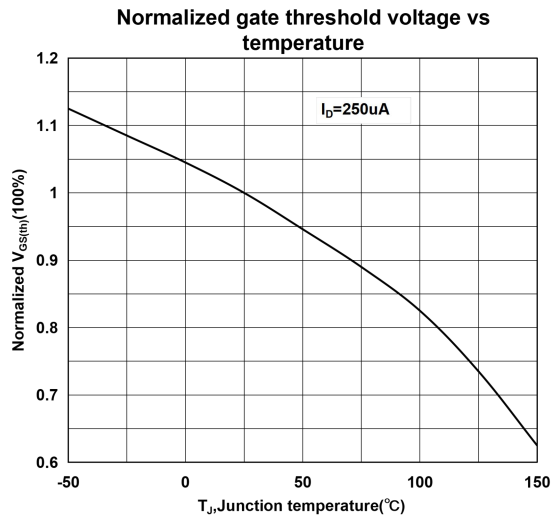
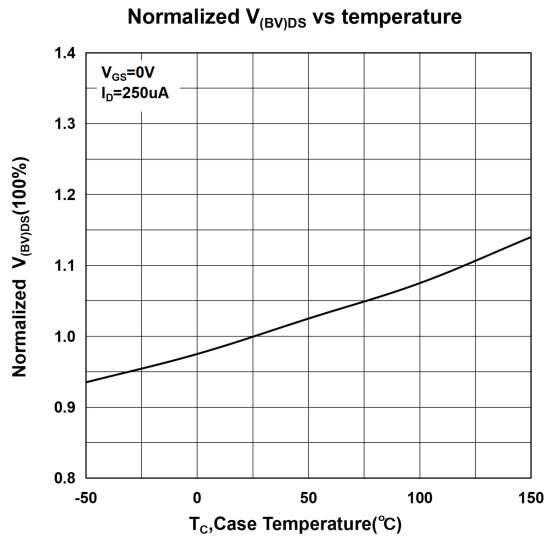
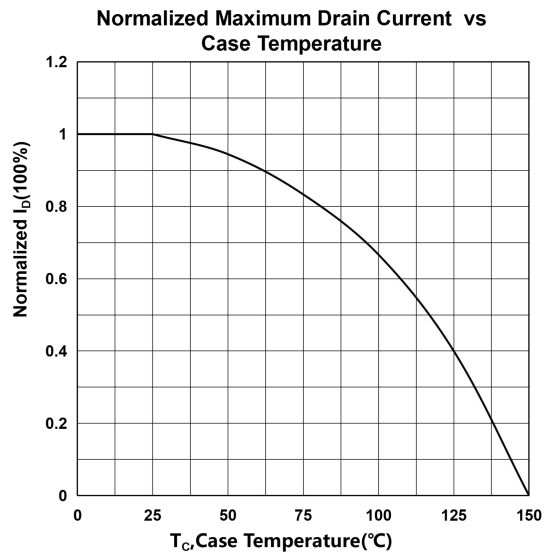


Capacitance



Gate Charge





Package outline dimension

