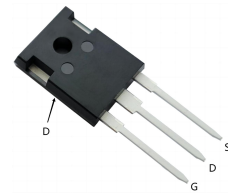


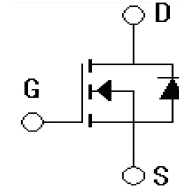
Features

- $V_{DS}=1000V, I_D=18A$
- Low C_{rss}
- Low gate charge
- Improved dv/dt capability



Applications

- High efficiency switch mode power supplies
- Electronic lamp ballasts based on half bridge
- UPS



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

Parameter	Symbol		Limit	Unit
Drain-Source Voltage	V _{DSS}		1000	V
Transient Gate-Source Voltage	V _{GSM}		±30	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current-continuous	I _D	T _C =25℃	18	A
		T _C =100℃	12	
Drain Current-pulse(note1)	I _{DM}		72	A
Repetitive Avalanche Current	I _{AR}		11	A
Single Pulsed Avalanche Energy (note2)	E _{AS}		605	mJ
Maximum Power Dissipation	P _D	T _C =25℃	312	W
		T _C =100℃	125	W
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃
Soldering temperature, wave soldering only allowed at leads.(1.6mm for 10s)	T _L		260	

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

Parameter	Symbol	Tests conditions	Min	Type	Max	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	1000	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, T_C=25^\circ\text{C}$	-	-	1	μA
		$V_{GS}=0\text{V}, T_C=125^\circ\text{C}$	-	-	100	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	3	4	5	V

Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=10A$ (note3)	-	0.37	0.50	Ω
Forward Transconductance	g_{fs}	$V_{DS}=40V, I_D=10A$ (note3)	-	20	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V,$ $V_{GS}=0V,$ $f=1.0MHz$ (note4)	-	1800	-	pF
Output capacitance	C_{oss}		-	90	-	pF
Reverse transfer capacitance	C_{rss}		-	13	-	pF

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Switching-Characteristics						
Turn-On delay time	t _{d(on)}	V _{DS} =500V,I _D =18A, V _{GS} =10V,R _G =25Ω	-	30	-	ns
Turn-On rise time	t _r		-	28	-	ns
Turn-Off delay time	t _{d(Off)}		-	80	-	ns
Turn-Off rise time	t _f		-	20	-	ns
Total Gate Charge	Q _g	V _{DS} =500V,I _D =18A, V _{GS} =10V(note4)	-	28	-	nC
Gate-Source charge	Q _{gs}		-	6	-	nC
Gate-Drain charge	Q _{gd}		-	14	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =1A(note3)	-	0.72	1.2	V
Diode Forward Current	I _S		-	-	18	A
Reverse recovery time	T _{rr}	I _S =18A,di _F /dt=100A/μs V _R =100V,V _{GS} =0V	-	360	-	ns
Reverse recovery charge	Q _{rr}		-	3245	-	nC
Reverse recovery current	I _{rr}		-	16	-	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance,junction to Case	$R_{th(j-C)}$	0.4	$^{\circ}C/W$
Thermal Resistance,junction to Ambient	$R_{th(j-A)}$	40	$^{\circ}C/W$

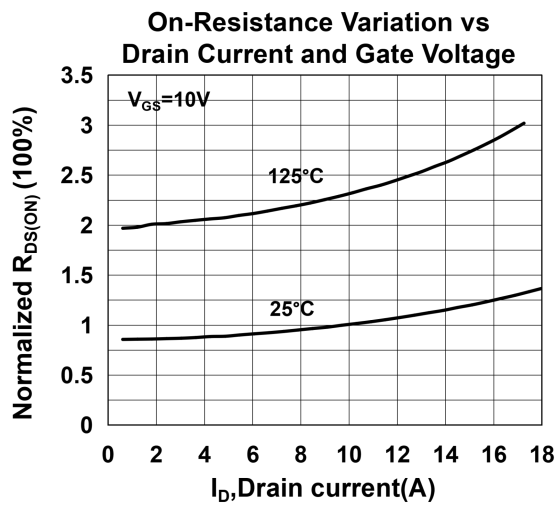
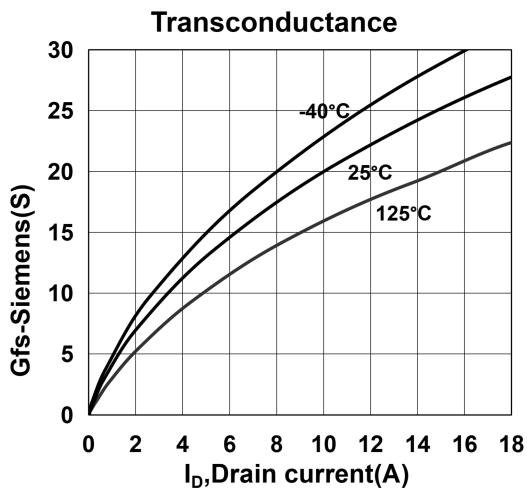
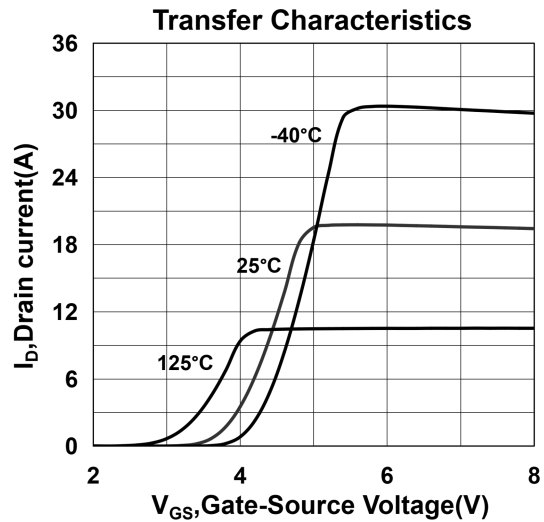
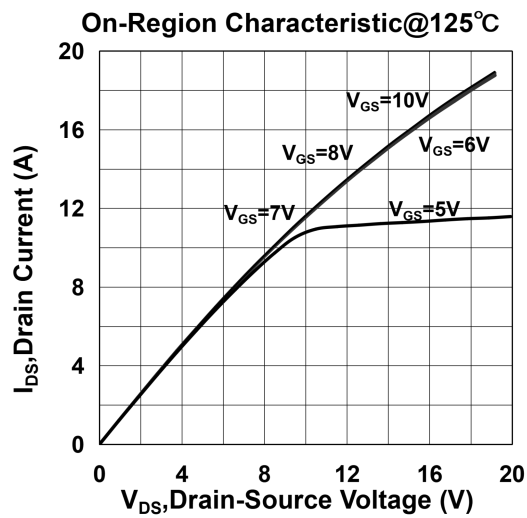
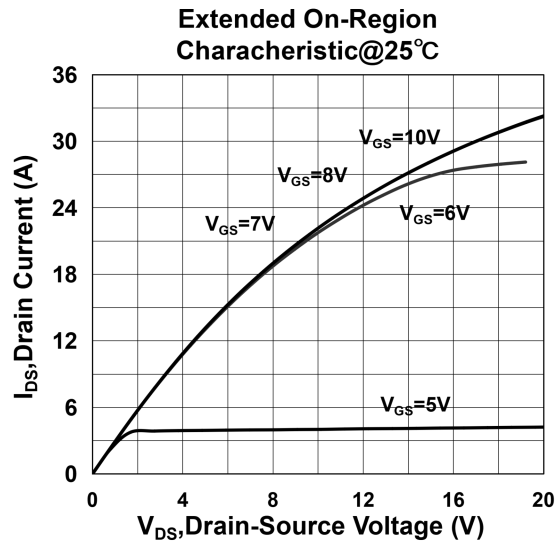
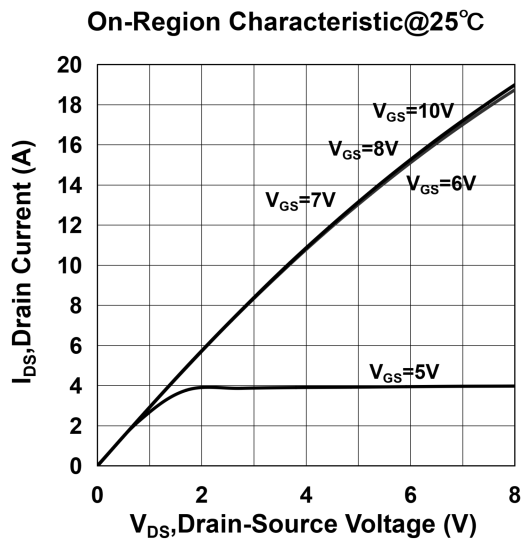
Order information

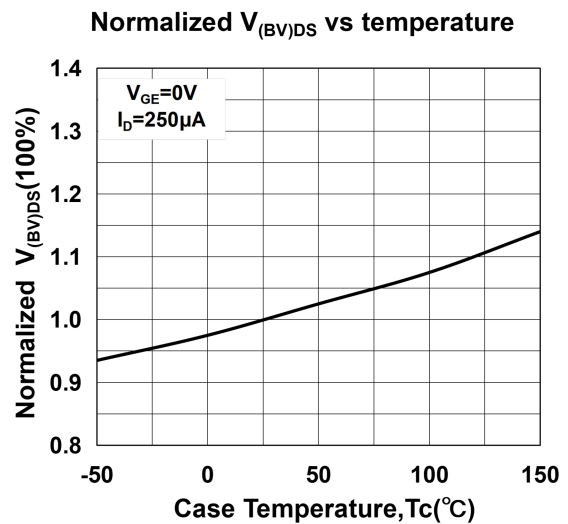
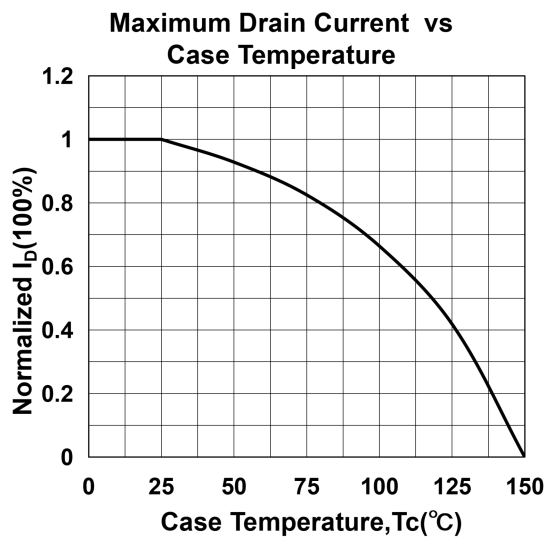
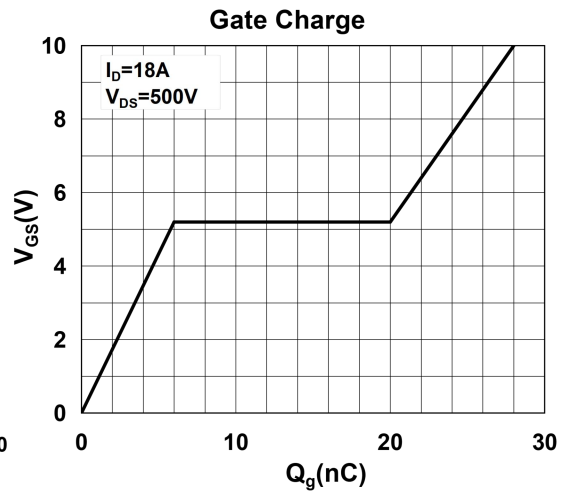
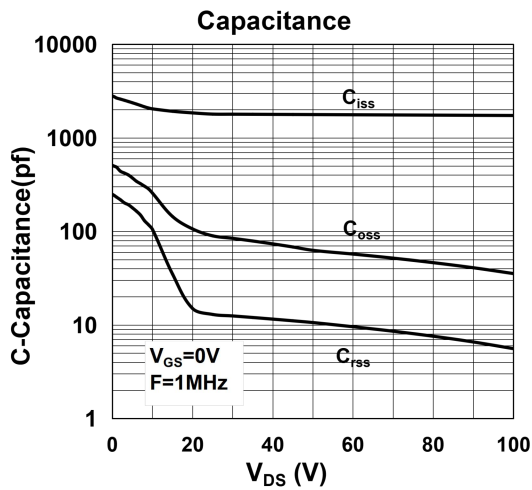
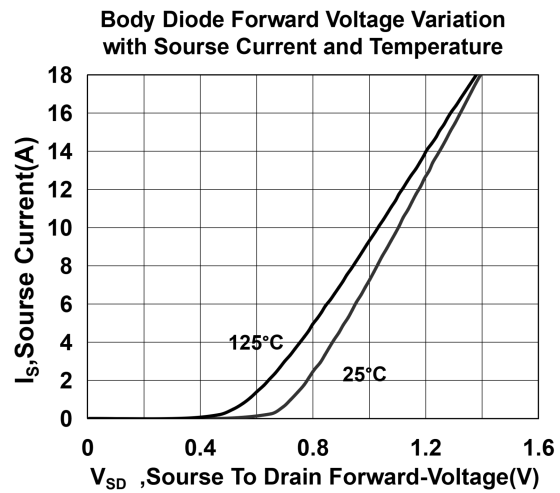
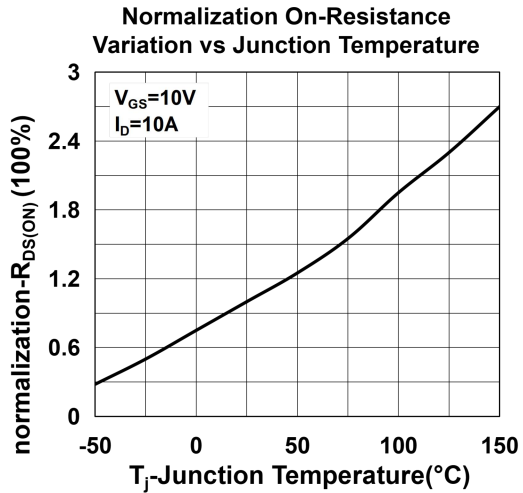
Order codes	Package	Packaging
MS18N100HCC0	T0-247	Tube

Notes:

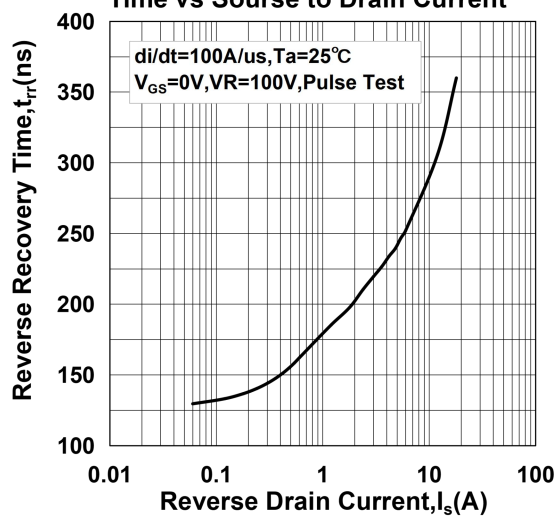
- 1: Pulse width limited by maximum junction temperature
- 2: $L=10mH, I_{AS}=I_{AR}, V_{DD}=50V, R_G=25\Omega$, Starting $T_J=25^{\circ}C$
- 3: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- 4: Essentially independent of operating temperature

Electrical Characteristics

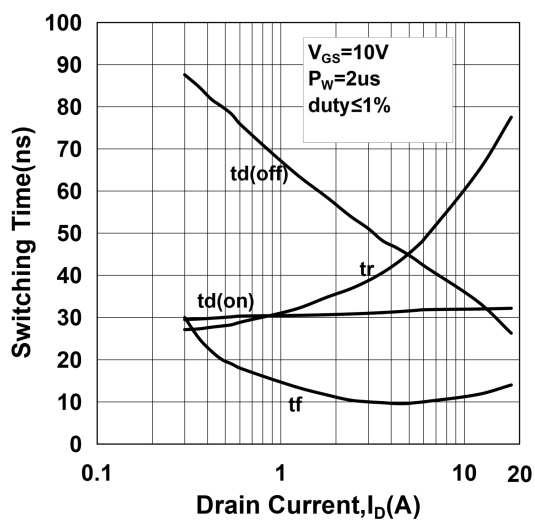




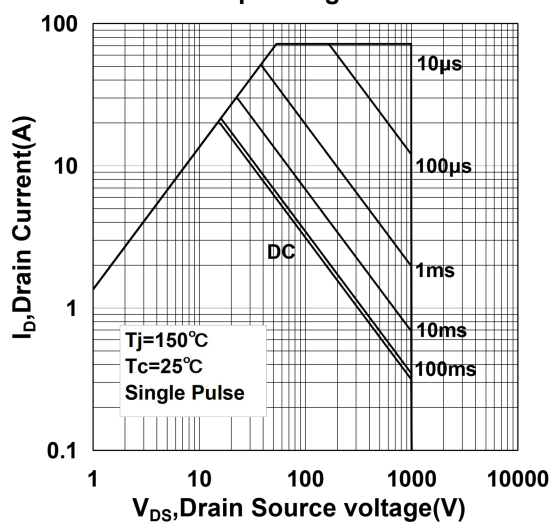
Body Diode Reverse Recovery Time vs Source to Drain Current



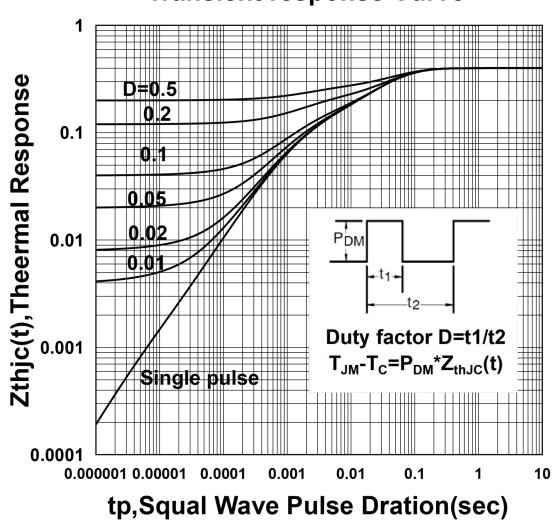
Switching Characteristics



Safe Operating Area



Transient response Curve



Package Mechanical Data

