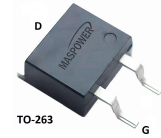


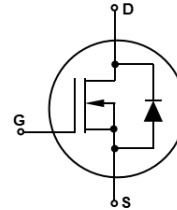
Features

- Depletion Mode MOSFET
- $V_{DSX} = 1000V$, $I_{D(on)min}=10A$
 $R_{DS(on)typ.}=1.1\Omega$
- Normally ON mode
- High Power Density



Applications

- Audio Amplifiers
- Start-Up Circuits
- Protection Circuits
- Ramp Generators
- Current Regulators
- Active Loads



Electrical ratings

Absolute maximum ratings			
Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DSX}	1000	V
Drain-gate voltage, ($R_{GS}=1M\Omega$)	V_{DGX}	1000	
Gate- source voltage(continuous)	V_{GSX}	± 20	
Gate- source voltage(transient)	V_{GSM}	± 30	
Total dissipation at $T_C = 25^\circ C$	P_D	625	W
Total dissipation at $T_C = 100^\circ C$		250	W
Operating junction temperature	T_J	-55 ~ 150	$^\circ C$
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	$^\circ C$

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

On /off states						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSX}$	$I_D = 250 \mu A$, $V_{GS} = -5V$	1000			V
Drain leakage current	$I_{DSX(off)}$	$V_{GS} = -20V$, $V_{DS} = \text{Max rating}$	-	-	100	μA
		$V_{GS} = -20V$, $V_{DS} = \text{Max rating}$, $T_C = 125^\circ C$	-	-	1000	
Gate-body leakage current	I_{GSX}	$V_{GS} = \pm 20 V$, $V_{DS} = 0V$			± 200	nA
Gate turn-off voltage	$V_{GS(off)}$	$V_{DS} = 10V$, $I_D = 250 \mu A$	-3.7	-4.7	-5.7	V
Static drain-source on resistance	$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 2.0A$, (note1)	-	1.1	1.4	Ω

Static drain-source on current	I _{D(on)}	V _{GS} =0V, V _{DS} =25V(note1)	10	-	-	A
Dynamic						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward transconductance	g _{fs}	V _{DS} = 30 V, I _D = 5A	10	16		S
Input capacitance	C _{iss}	V _{DS} =25V,f=1MHz, V _{GS} =-10V		5100		pF
Output capacitance	C _{oss}			360		pF
Reverse transfer capacitance	C _{rss}			40		pF
Total gate charge	Q _g	V _{DD} =500V,I _D =5A V _{GS} =± 5V		185		nC
Gate-source charge	Q _{gs}			24		nC
Gate-drain charge	Q _{gd}			78		nC
Switching times						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Turn-on delay time	t _{d(on)}	V _{DD} = 500 V, I _D =5 A, V _{GS} = ±5V RG = 3.3Ω(External)		35		ns
Rise time	t _r			36		ns
Turn-off-delay time	t _{d(off)}			30		ns
Fall time	t _f			115		ns
Source drain diode						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward on voltage	V _{SD}	I _{SD} = 1 A, V _{GS} = -10V(note1)		0.68	1.3	V
Reverse recovery time	t _{rr}	I _{SD} = 5A, -di/dt=100A/μs V _{DD} = 100 V ,V _{GS} =-10V		1000		ns
Reverse recovery charge	Q _{rr}			13		μC
Reverse recovery current	I _{RRM}			15		A

Thermal data

Parameter	Symbol	Value	Unit
Thermal resistance junction-case,max	$R_{thj-case}$	0.20	$^{\circ}C/W$
Thermal resistance junction-ambient,max	$R_{thj-amb}$	50	

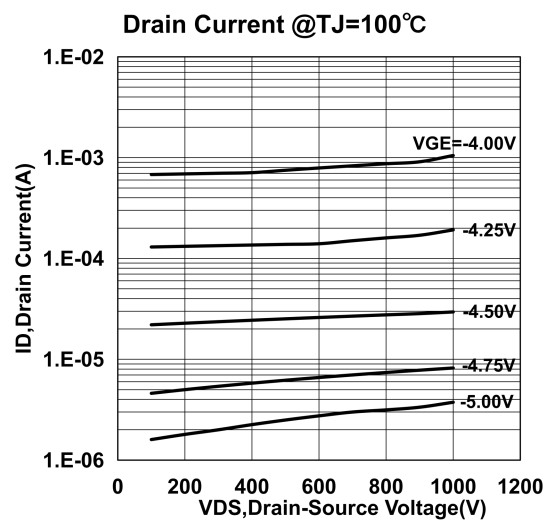
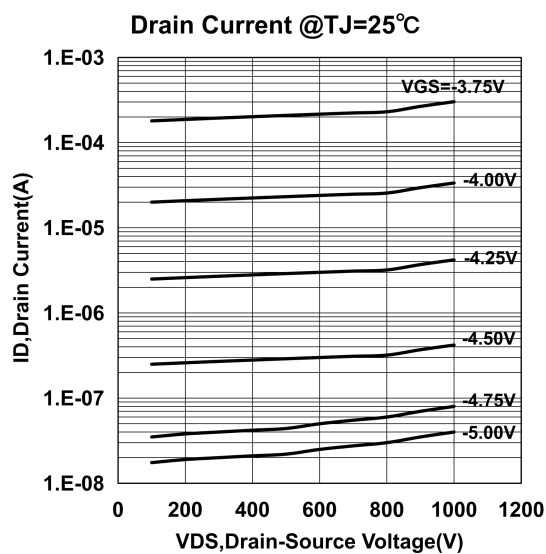
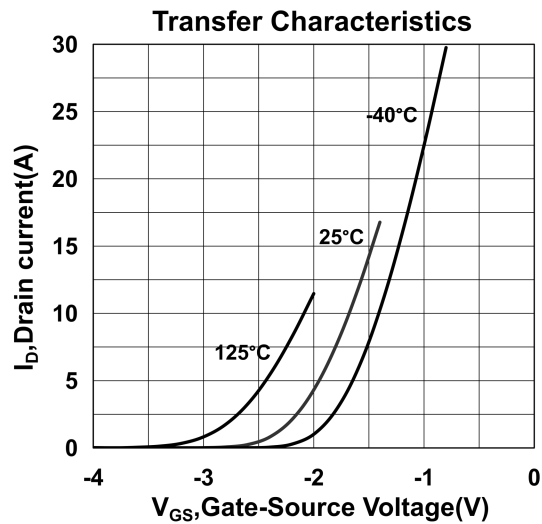
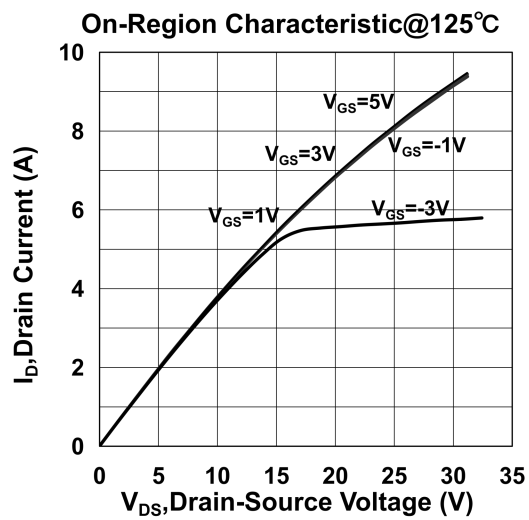
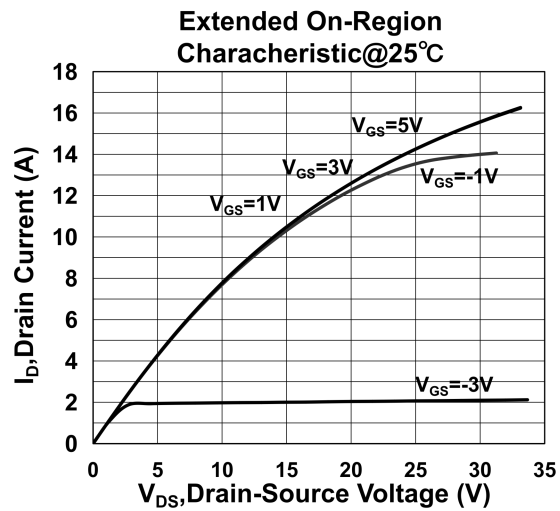
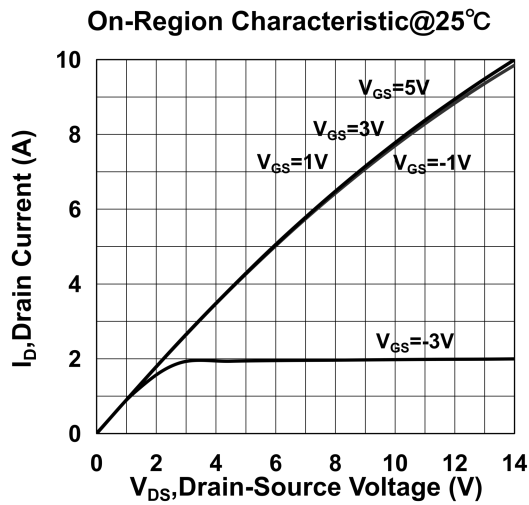
Ordering information

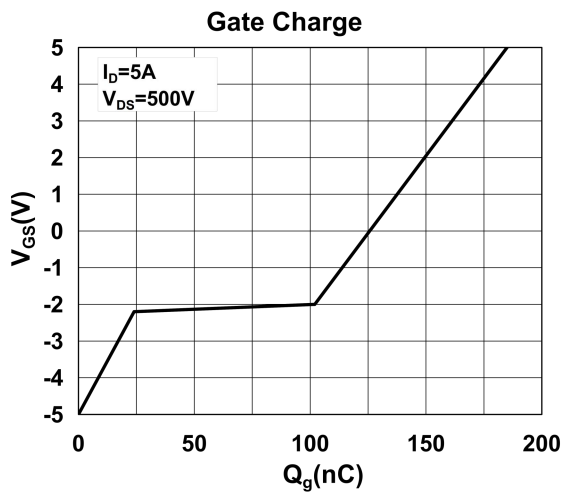
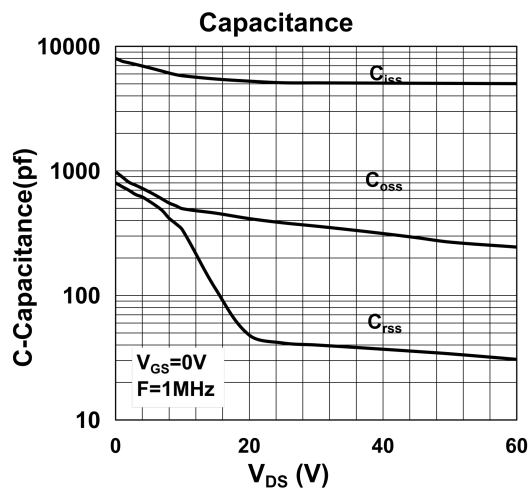
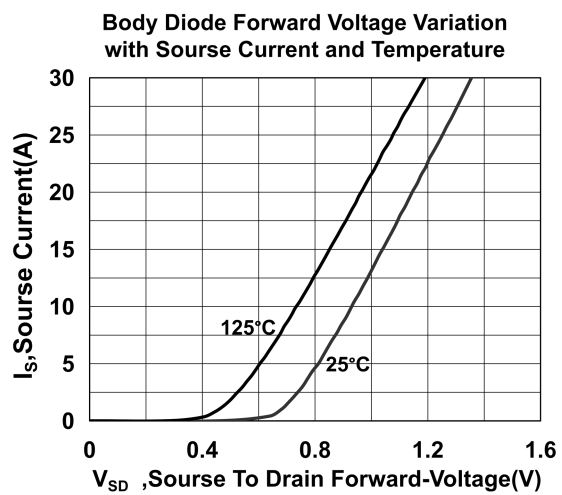
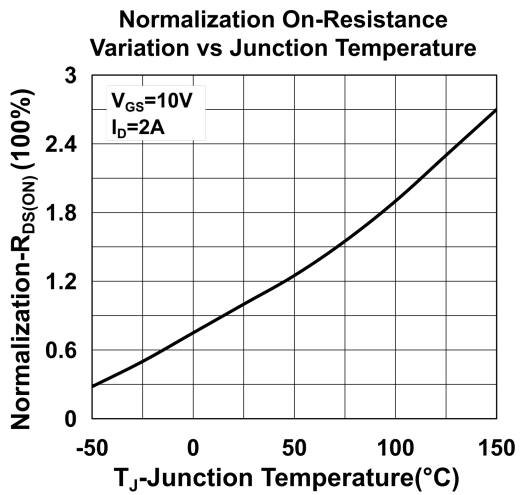
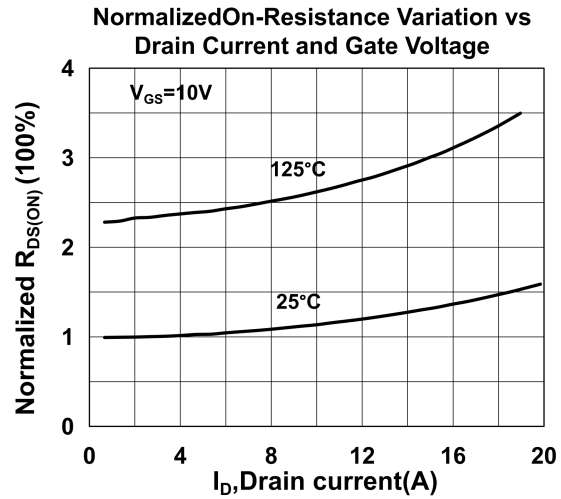
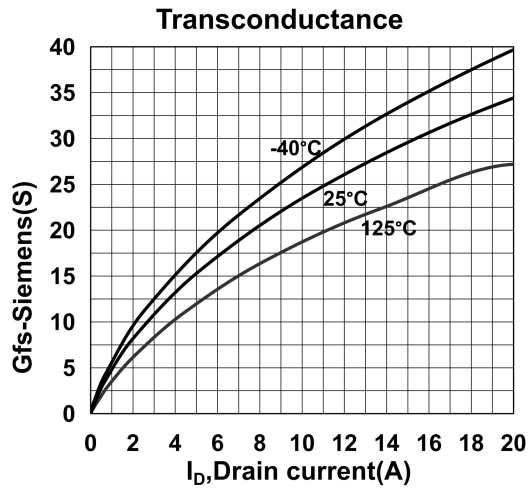
Ordering Code	Silkscreen	Package
MS10NH100HGE0	MS10NH100HGE0	TO-263

note:

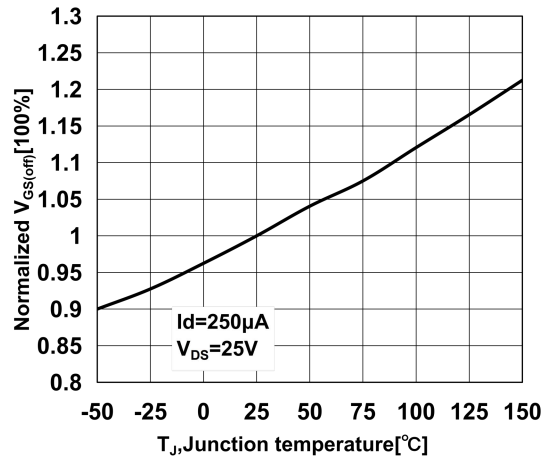
1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$

Electrical characteristics

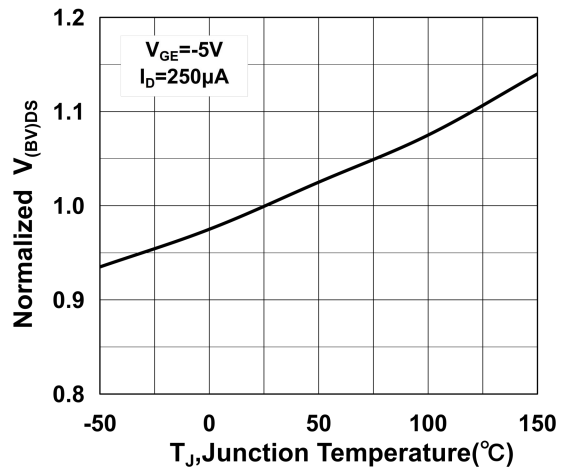




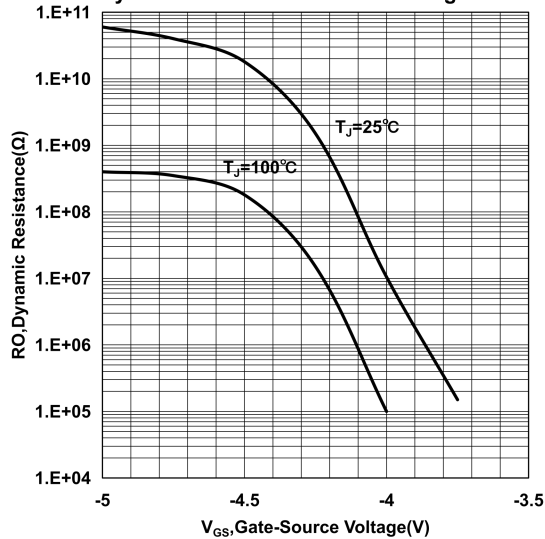
Normalized gate threshold voltage vs temperature



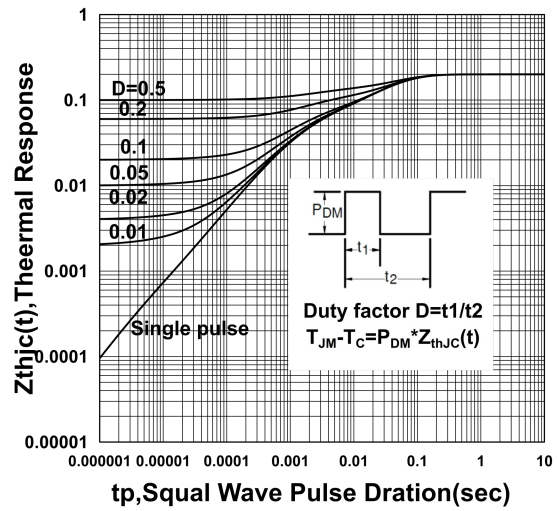
Normalized $V_{(BV)DS}$ vs temperature



Dynamic Resistance vs Gate Voltage



Transient response Curve



Package outline dimension

