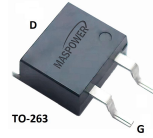


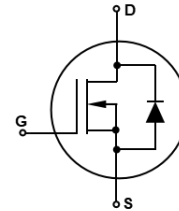
Features

- 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	

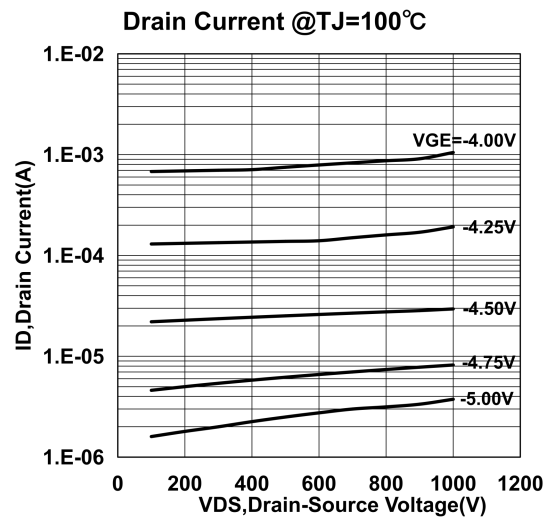
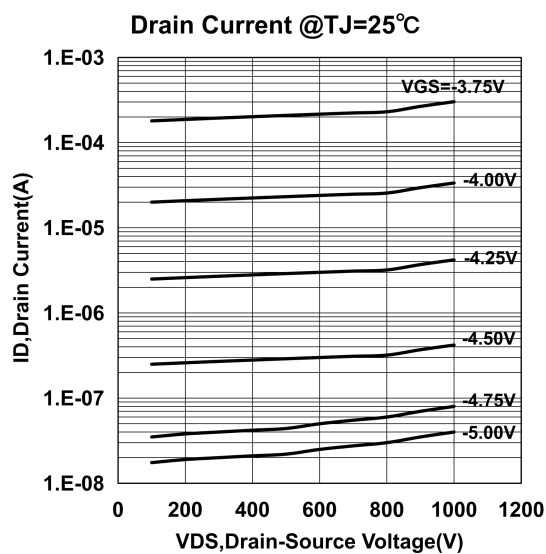
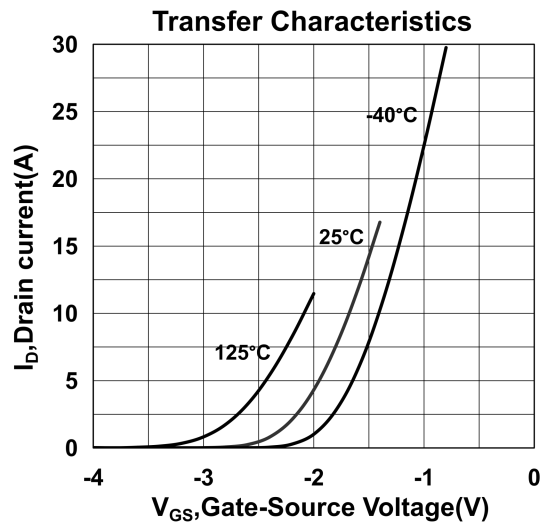
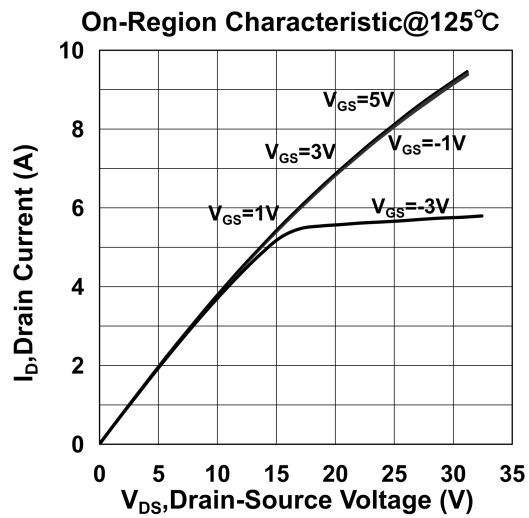
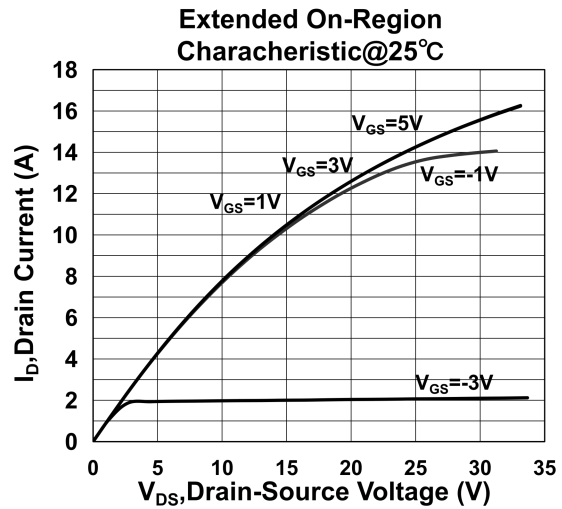
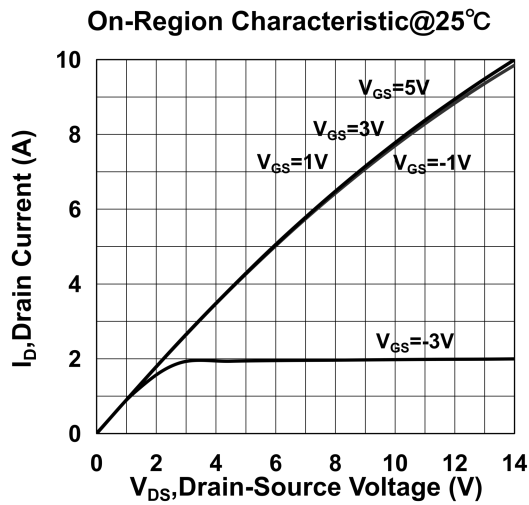
Ordering information

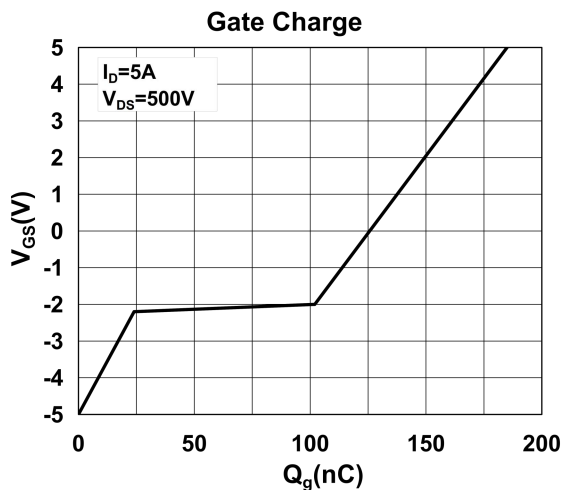
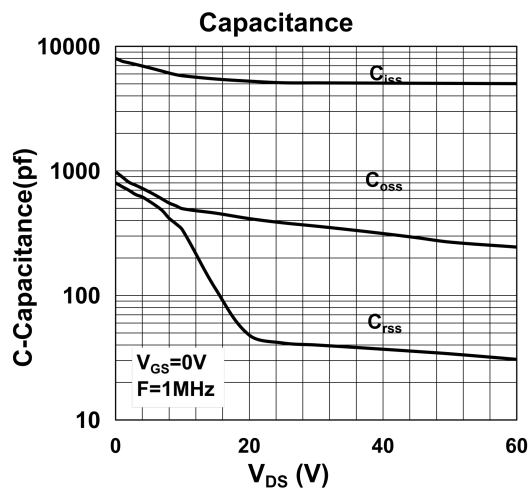
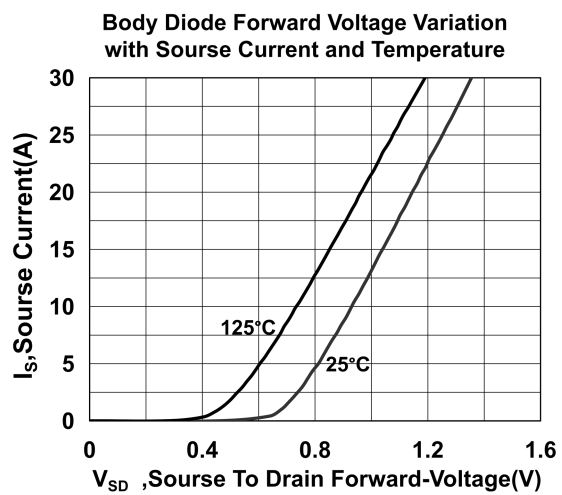
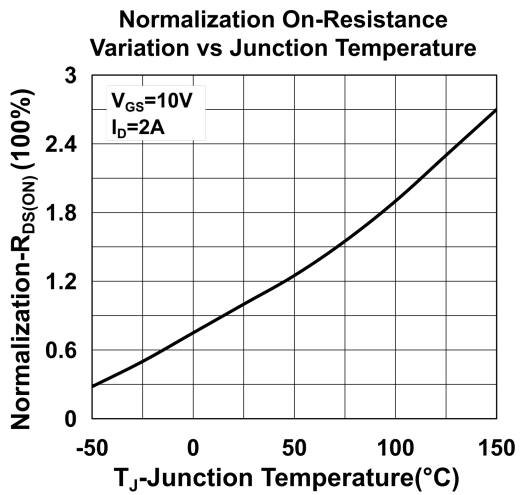
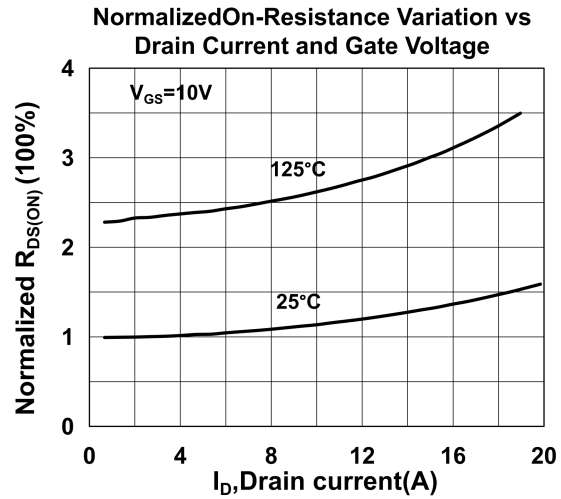
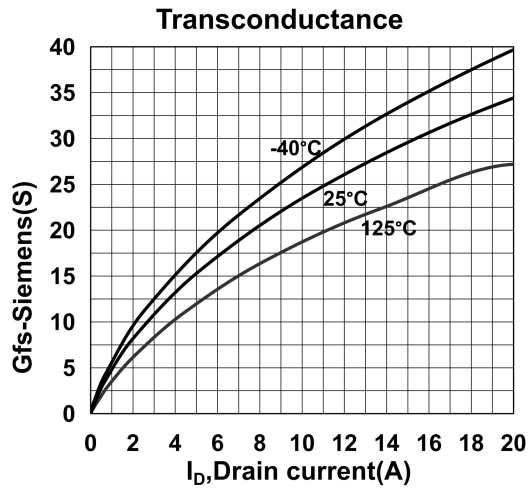
Ordering Code	Silkscreen	Package
MS10NH100HGE0	MS10NH100HGE0	TO-263

note:

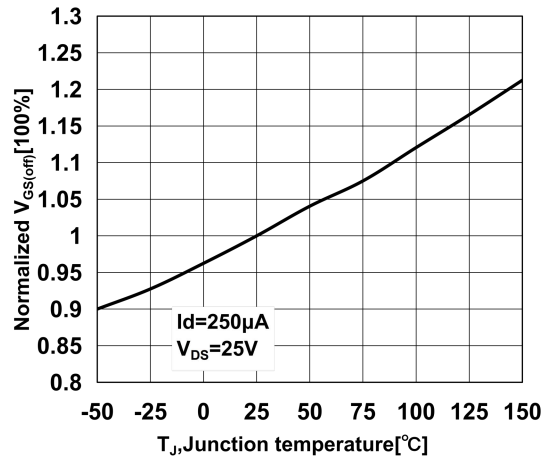
1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$

Electrical characteristics

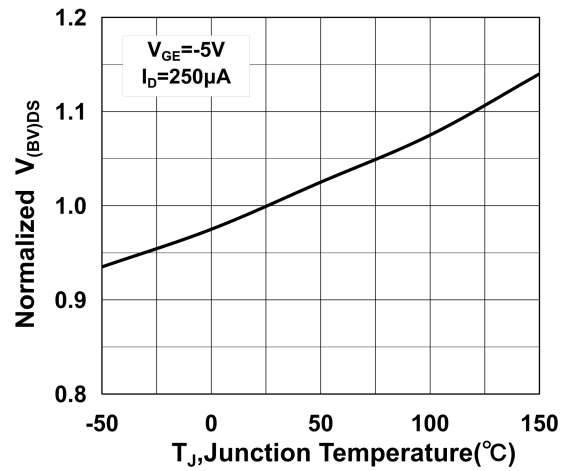




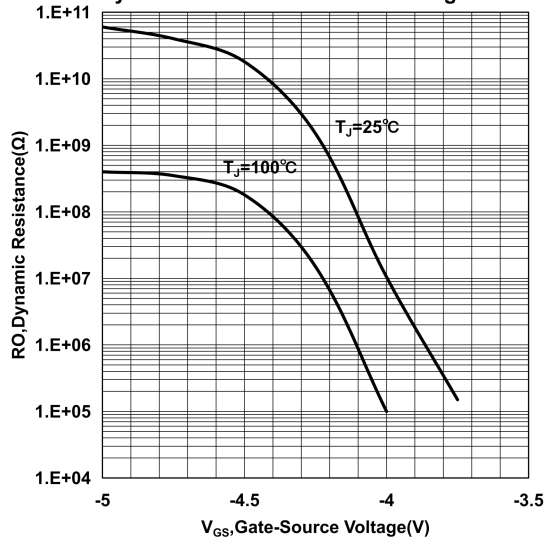
Normalized gate threshold voltage
vs temperature



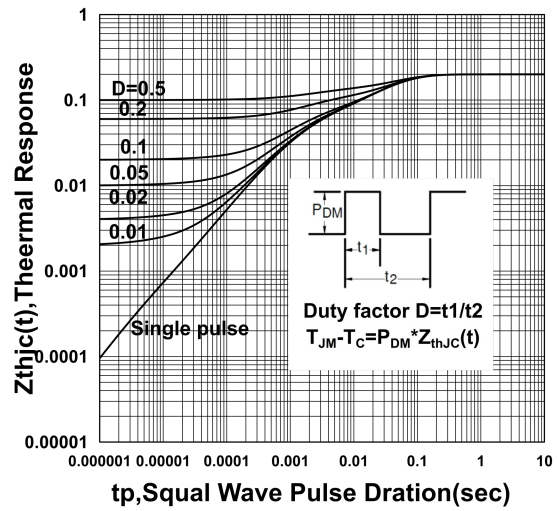
Normalized $V_{(BV)DS}$ vs temperature



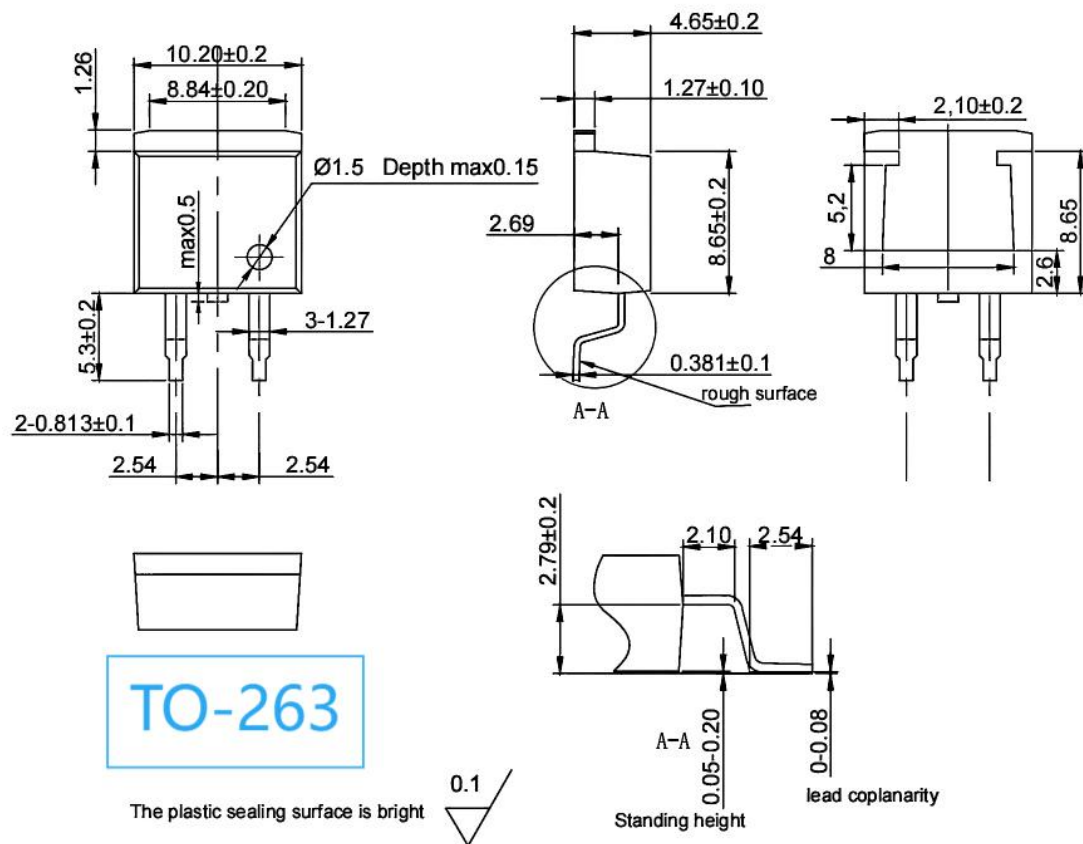
Dynamic Resistance vs Gate Voltage



Transient response Curve



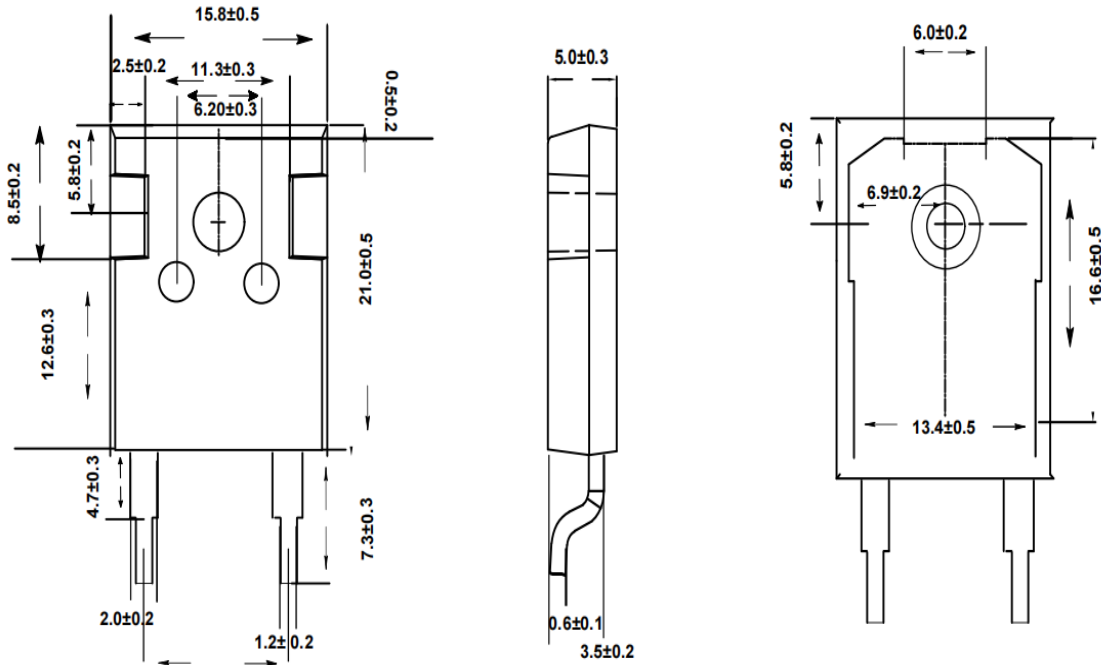
Package outline dimension



Notes:

1. unmarked tolerance $\pm 0.15\text{mm}$; unmarked $R < 0.15\text{mm}$
2. The resin body is not allowed to have defects, shrinkage holes, cracks, bubbles and other harmful defects
3. The drawing indicates that the leg has reinforcement
4. The top pinhole is not allowed to protrude the surface of the plastic sealing body
5. Unit: mm

Package outline dimension



TO-268