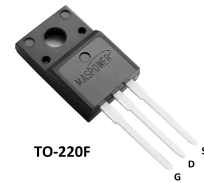
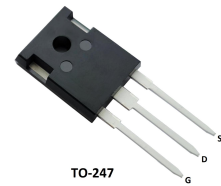
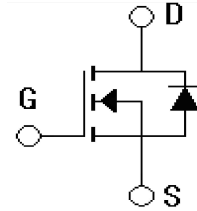


Features

- $V_{DS}=1200V, I_D=10A$
 $R_{DS(on)} < 2\Omega @ V_{GS}=10V$
- High density cell design for ultra low R_{dson}
- Low gate charge
- Improved dv/dt capability
- RoHS product

Applications

- High Voltage Switched-mode and resonant-mode power supplies
- High Voltage Pulse Power Applications
- High Voltage Discharge circuits in Lasers Pulsers, Spark Igniters, RF Generators
- High Voltage DC-DC converters
- High Voltage DC-AC inverters



Absolute Ratings ($T_c=25^\circ C$)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	1200	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current-continuous	I_D	10	A
Drain Current-pulse(note1)	I_{DM}	15	A
Single Pulsed Avalanche Energy (note2)	E_{AS}	30	mJ
Maximum Power Dissipation (TO-247)	PD	430	W
Maximum Power Dissipation (TO-263)	PD	277	
Maximum Power Dissipation (TO-220F)	PD	67.9	
Operating and Storage Temperature Range	T_J, T_{STG}	$-55 \sim +175$	$^\circ C$
Maximum lead temperature for soldering purposes	TL	300	$^\circ C$

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	1200	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	-	5.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=1A$	-	2	-	Ω
Forward Transconductance	g_{fs}	$V_{DS}=20V, I_D=5A$ (note3)	-	13	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V,$ $f=1.0MHz$	-	1871	-	pF
Output capacitance	C_{oss}		-	153	-	pF
Reverse transfer capacitance	C_{rss}		-	9	-	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	$t_{d(on)}$	$V_{DS}=600V, I_D=5A,$ $V_{GS}=10V$ (note3,4)	-	25	-	ns
Turn-On rise time	t_r		-	33	-	ns
Turn-Off delay time	$t_{d(Off)}$		-	150	-	ns
Turn-Off rise time	t_f		-	50	-	ns
Total Gate Charge	Q_g	$V_{DS}=600V, I_D=5A,$ $V_{GS}=10V$ (note3,4)	-	41	-	nC
Gate-Source charge	Q_{gs}		-	11	-	nC
Gate-Drain charge	Q_{gd}		-	13	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	V_{SD}	$V_{GS}=0V, I_S=10A$	-	-	1.2	V
Diode Forward Current	I_S	$TC=25^\circ C$	-	-	10	A
Reverse recovery time	T_{rr}	$I_S=5A, di/dT=100A/\mu S$	-	530	-	nS

Reverse recovery charge	Q _{rr}	VR=100V, VGS=0V (note4)	-	3.53	-	μC
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Thermal Characteristic

Parameter	Symbol	Value			Unit
		TO-263	TO-247	TO-220F	
Thermal Resistance, junction to Case	R _{th(j-C)}	0.45	0.35	1.84	°C /W
Thermal Resistance, junction to Ambient	R _{th(j-A)}	40	36	62.5	°C /W

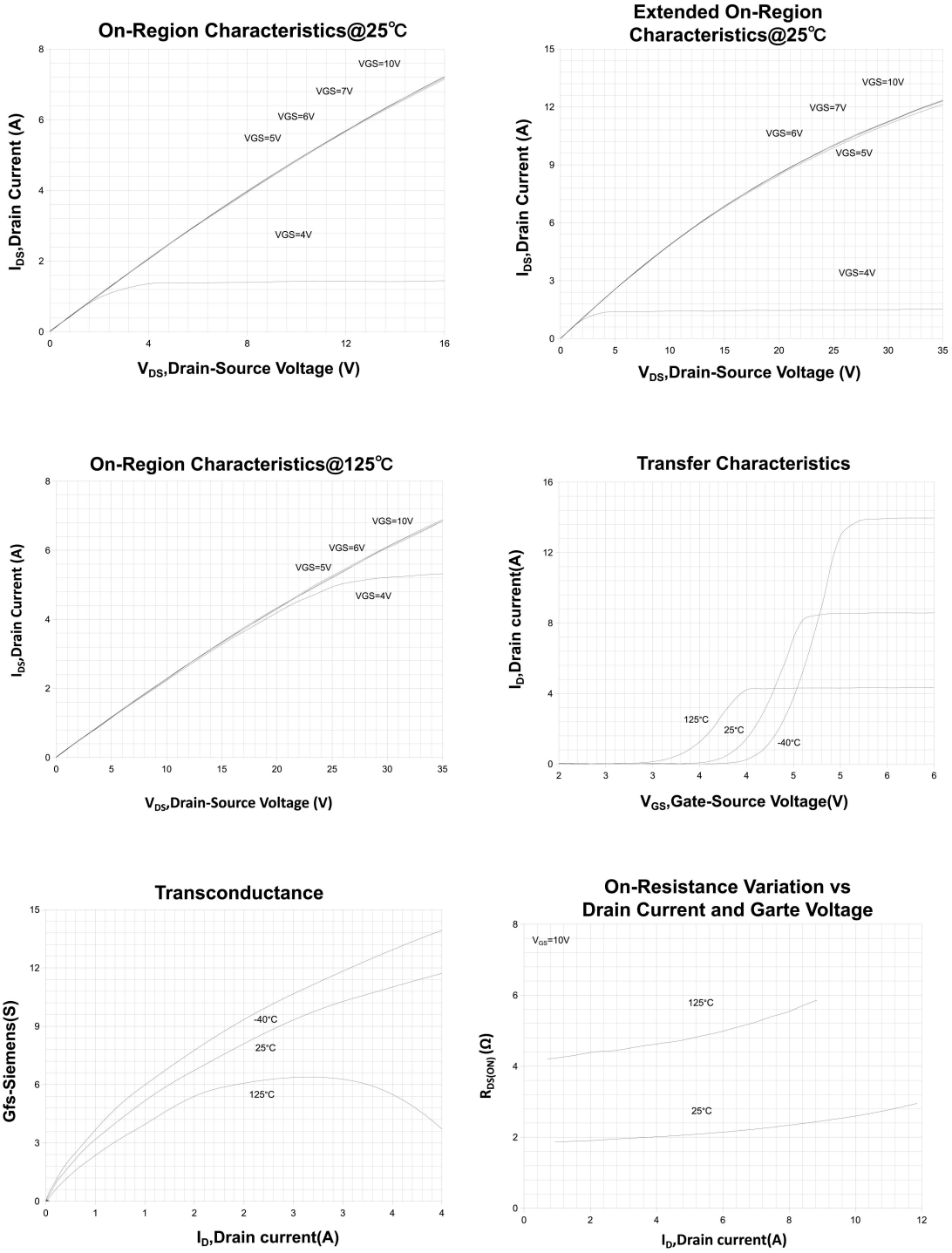
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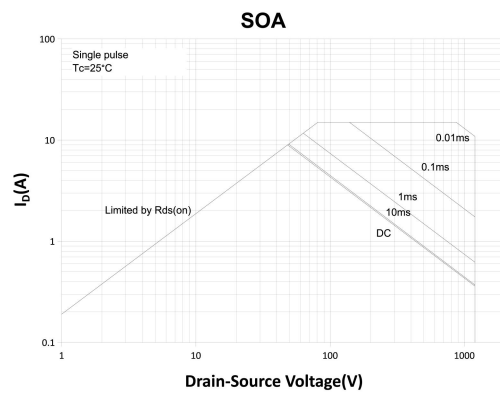
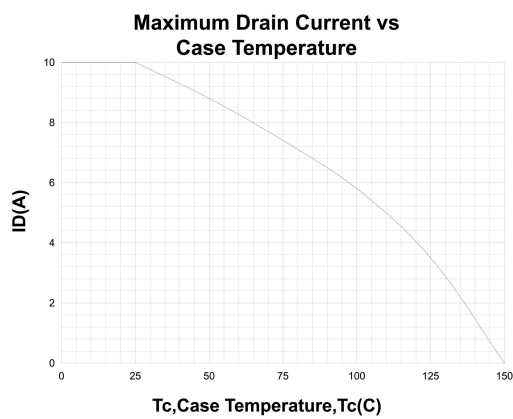
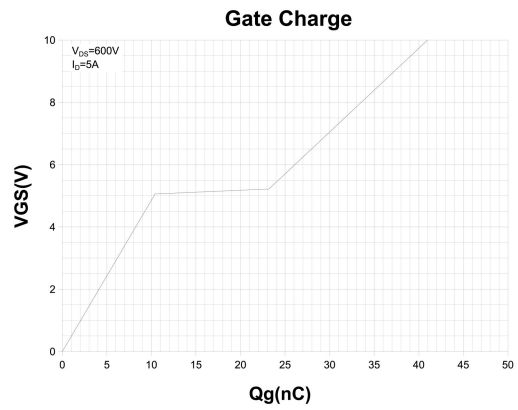
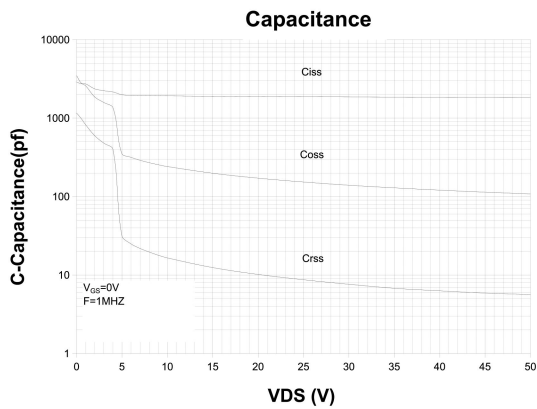
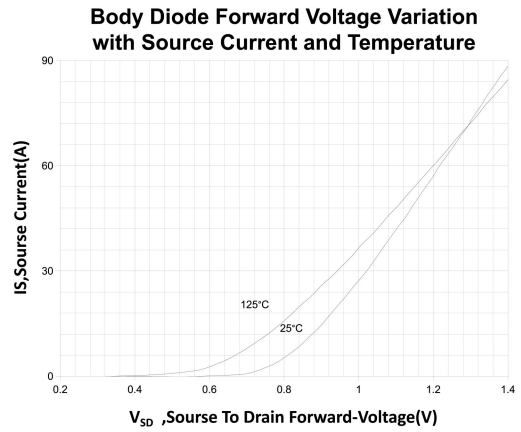
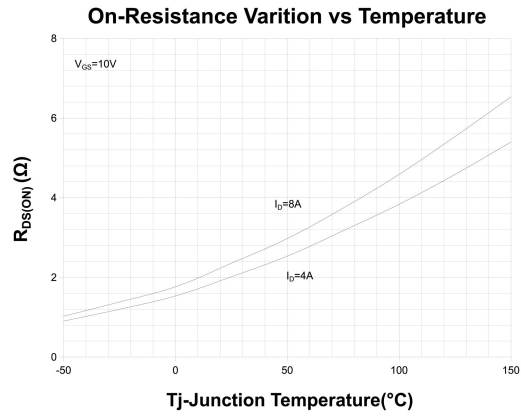
1. Repetitive Rating : Pulse width limited by maximum junction temperature
2. L = 15 mH, I_{AS} = 2 A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25°C
3. Pulse Test : Pulse width ≤ 300us, Duty cycle ≤ 2%
4. Essentially independent of operating temperature

Order information

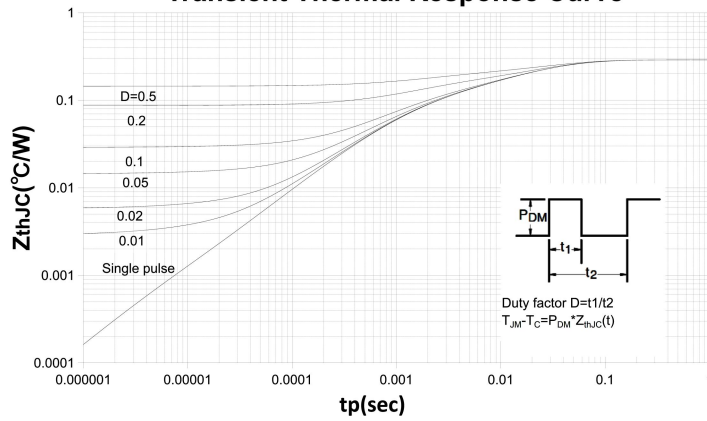
Order codes	Package	Packaging
MS10N120HGC0	TO-247	Tube
MS10N120HGT1	TO-220F	Tube
MS10N120HGE0	TO-263	Tube

Electrical Characteristics





Transient Thermal Response Curve



Package Mechanical DATA

