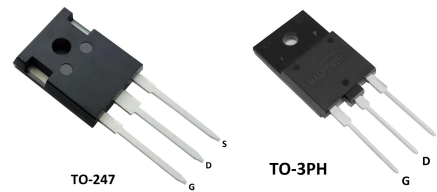
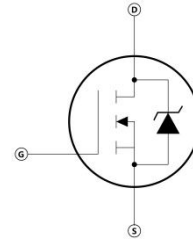


Features

- 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_{DS}	1500	V
Gate- source voltage	V_{GS}	± 30	
Drain current (continuous) at $T_C = 25\text{ }^\circ\text{C}$	I_D	6	A
Drain current (continuous) at $T_C = 100\text{ }^\circ\text{C}$		4	
Drain current (pulsed)		I_{DM}	
Avalanche current, repetitive or not-repetitive (pulse width limited by T_J max)	I_{AR}	5	A
Single pulse avalanche energy (starting $T_J = 25\text{ }^\circ\text{C}$, $I_D = I_{AR}$, $V_{DD} = 50\text{ V}$)	E_{AS}	62.5	mJ
Total dissipation at $T_C = 25\text{ }^\circ\text{C}$ TO-247	P_{TOT}	160	W
Total dissipation at $T_C = 25\text{ }^\circ\text{C}$ TO-3PH	P_{TOT}	62.5	W
Derating factor		2.56	W/ $^\circ\text{C}$
Operating junction temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage temperature	T_{stg}		
Maximum lead temperature for soldering purpose	T_L	300	$^\circ\text{C}$
Insulation withstand voltage (RMS) from all three leads to external heat sink ($t=1\text{ s}$; $T_C=25\text{ }^\circ\text{C}$)	V_{ISO}	3.5	KV

Electrical Characteristics (T_{vj} = 25°C unless otherwise specified)

On /off states						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
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} = Max rating V _{DS} =Max rating, T _C =125 °C			10 500	μA
Gate-body leakage current (V _{DS} = 0)	I _{GSS}	V _{GS} = ± 30 V			± 100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	3	4	5	V
Static drain-source on resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 2A	-	3.8	4.5	Ω

Dynamic						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Forward trans-conductance	g _{fs}	V _{DS} = 15 V, I _D = 2A		3.5		S
Input capacitance	C _{iss}	V _{DS} =25V, f=1MHz, V _{GS} =0		1300		pF
Output capacitance	C _{oss}			120		
Reverse transfer capacitance	C _{rss}			12		
Gate input resistance	R _g	f=1MHz Gate DC Bias=0 Test signal level=20mV open drain		2.2		Ω
Turn-on delay time	t _{d(on)}	V _{DD} = 750 V, I _D =3 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		
Total gate charge	Q _g	V _{DD} =1200V, I _D =6A V _{GS} =10V		85		nC
Gate-source charge	Q _{gs}			14		
Gate-drain charge	Q _{gd}			48		

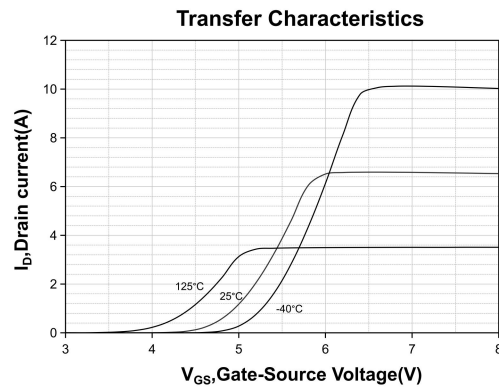
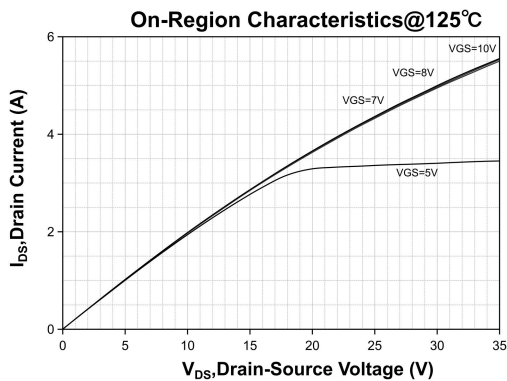
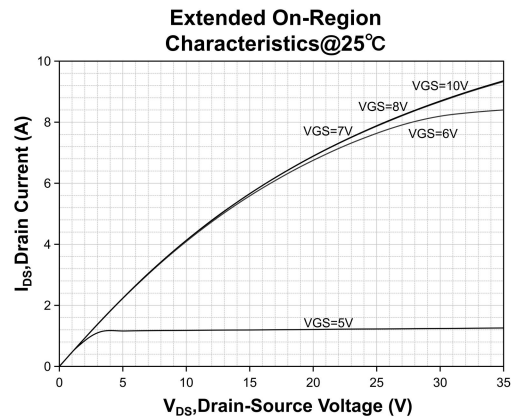
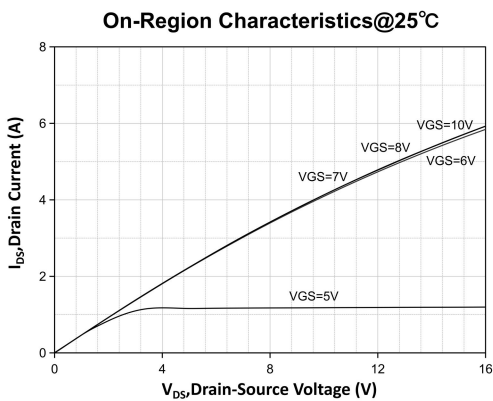
Source drain diode						
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Source-drain current	I _{SD}				6	A
Source-drain current (pulsed)	I _{SDM}				24	
Forward on voltage	V _{SD}	I _{SD} = 6 A, V _{GS} = 0	-	1.5	2.0	V
Reverse recovery time	t _{rr}	I _{SD} = 6A, di/dt=100A/μs		950		ns

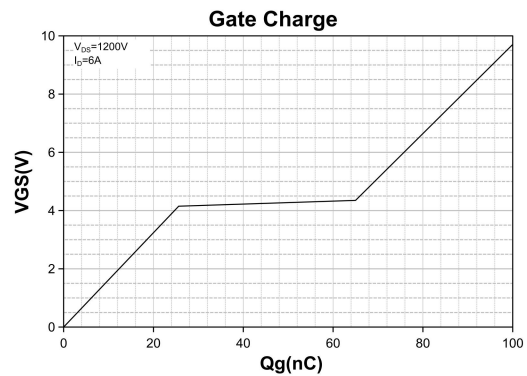
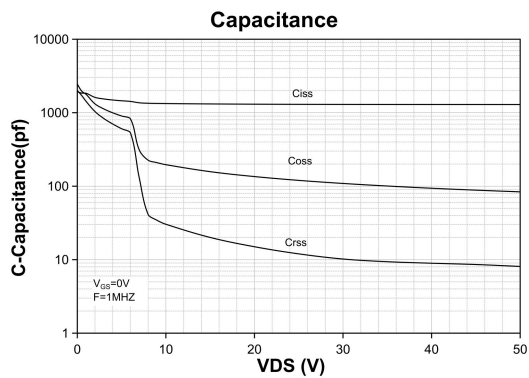
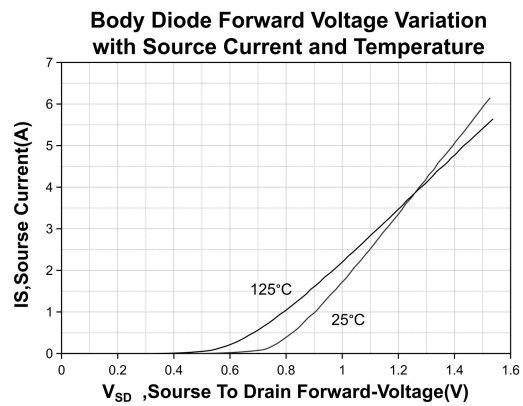
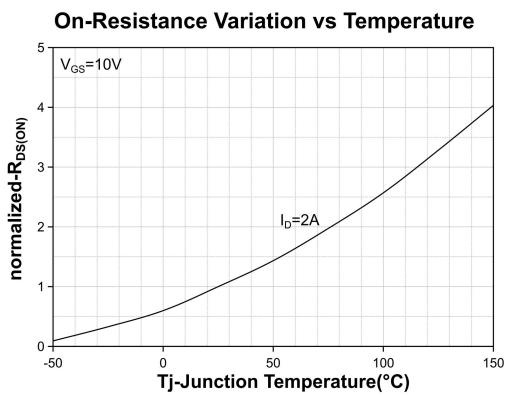
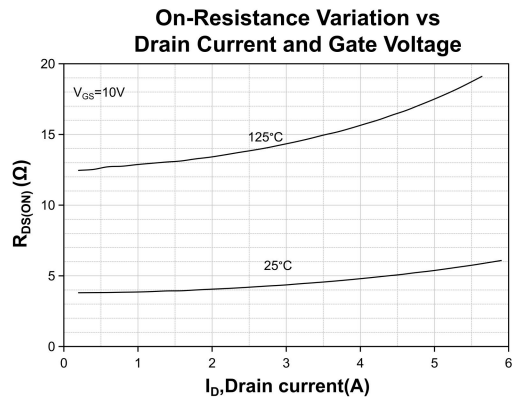
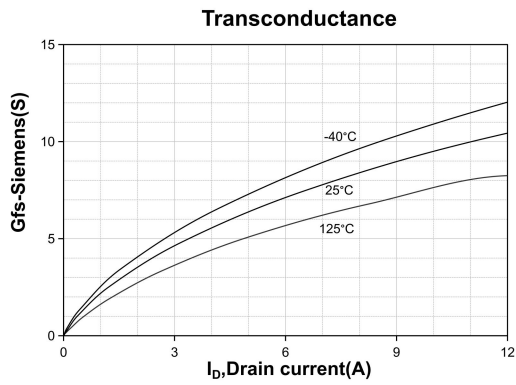
Reverse recovery charge	Q_{rr}	$V_{DD}= 60\text{ V}$	9	μC
Reverse recovery current	I_{RRM}		20	A
Reverse recovery time	t_{rr}	$I_S=6\text{A}, di/dt=100\text{A}/\mu\text{s}$ $V_{DD}= 60\text{V } T_J=150^\circ\text{C}$	900	ns
Reverse recovery charge	Q_{rr}		8.5	μC
Reverse recovery current	I_{RRM}		19	A

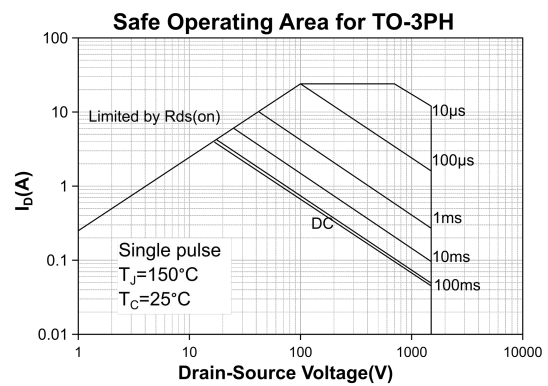
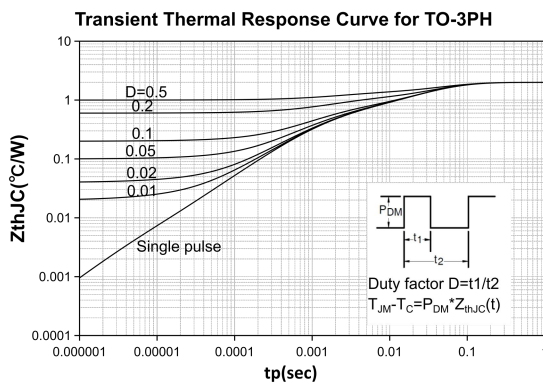
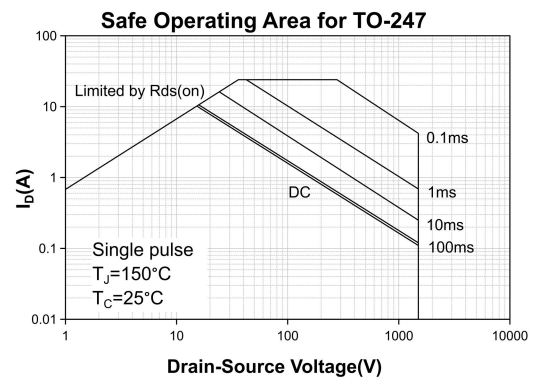
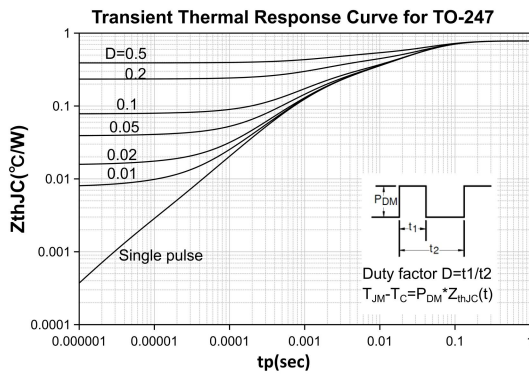
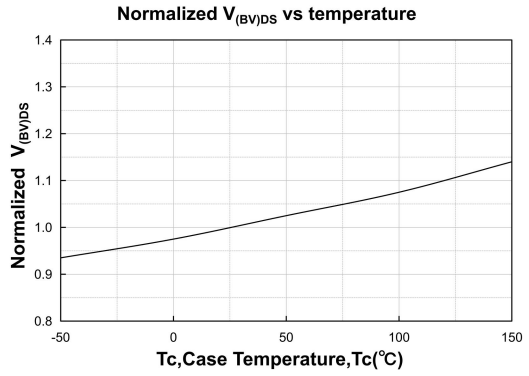
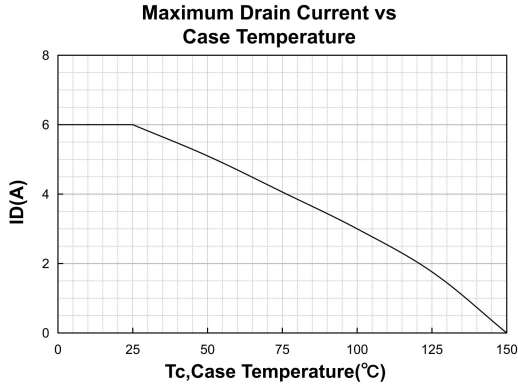
Thermal data				
Parameter	Symbol	Value		Unit
		TO-247	TO-3PH	
Thermal resistance junction-case max	R_{thj-c}	0.78	2	$^\circ\text{C}/\text{W}$
Thermal resistance junction-ambient max	R_{thj-a}	62.5	50	

Order Message

Marking	package
MS6N150HGC0	TO-247
MS6N150HGB2	TO-3PH

Electrical characteristics(curves)






Package outline dimension

