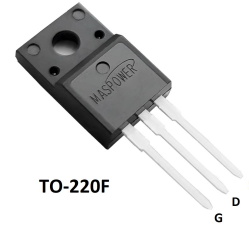


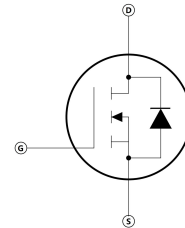
Features

- Low gate charge
- Low Crss (typical 13pF)
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability



Applications

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



Absolute Ratings (Tc=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	1500	V
Transient Gate-Source Voltage	V_{GSM}	± 30	V
Gate-Source Voltage(DC)	V_{GSM}	± 20	V
Drain Current -continuous	I_D	$T_C=25^{\circ}C$	10
		$T_C=100^{\circ}C$	6.0*
Drain Current - pulse (note 1)	I_{DM}	36	A
Single Pulsed Avalanche Energy (note 2)	E_{AS}	2880	mJ
Avalanche Current (note 1)	I_{AR}	12	A
Peak Diode Recovery dv/dt (note 3)	dv/dt	4.3	V/ns
Power Dissipation(TO-220F)	P_D	69	W
Operating Temperature Range	T_J	-55~+150	°C
Storage Temperature Range	T_{STG}	-55~+150	°C
Maximum Lead Temperature for Soldering Purposes	T_L	300	°C

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Off-Characteristics						
Drain-Source Voltage	BV _{DSS}	I _D =250uA,V _{GS} =0V	1500	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =V _{DSS} ,V _{GS} =0V	-	-	1	uA
		V _{DS} =V _{DSS} ,T _C =125°C	-	-	10	uA
Gate-body leakage current	I _{GSSF}	V _{DS} =0V,V _{GS} =±20V	-	-	±100	nA
On-Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} ,I _D =250uA	2.7	3.7	4.7	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V,I _D =1A	-	3.0	4.0	Ω
Forward Transconductance	g _{fs}	V _{DS} =40V,I _D =4.5A (note 4)	-	9.3	-	S
Dynamic Characteristics						
Gate resistance	R _g	F=1.0MHz open drain	-	1.5	-	Ω
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, F=1.0MHz	-	2350	-	pF
Output capacitance	C _{oss}		-	210	-	pF
Reverse transfer capacitance	C _{rss}		-	10	-	pF
Switching Characteristics						
Turn-On delay time	t _{d(on)}	V _{DD} =750V,I _D =10A, R _G =25Ω(note 4,5)	-	48	-	ns
Turn-On rise time	t _r		-	108	-	ns
Turn-Off delay time	t _{d(off)}		-	88	-	ns
Turn-Off Fall time	t _f		-	62	-	ns
Total Gate Charge	Q _g	V _{DS} =750V,I _D =10A, V _{GS} =10V(note4,5)	-	49	-	nC
Gate-Source charge	Q _{gs}		-	10	-	nC
Gate-Drain charge	Q _{gd}		-	26	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Continuous Drain -Source Diode Forward Current	I _S		-	-	10	A
Pulsed Drain-Source Diode Forward Current	I _{SM}		-	-	36	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V,I _S =1A	-	0.72	1.2	V
Reverse recovery time	t _{rr}	V _{GS} =0V,I _S =10A -dI _F /dt=100A/us(note 4)	-	420	-	ns
Reverse recovery charge	Q _{rr}		-	4.21	-	uC

Thermal characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Case,Max	$R_{th(j-c)}$	1.79	°C/W
Thermal Resistance, Junction to Ambient,Max	$R_{th(j-A)}$	62.5	°C/W

Notes:

1:Pulse width limited by maximum junction temperature

2:L=20mH, $I_{AS}=I_{AR}$, $V_{DD}=50V$, $R_G=25\Omega$,Starting $T_J=25^\circ C$

3: $I_{SD}\leq 10A$, $di/dt\leq 200A/us$, $V_{DD}\leq BV_{DSS}$,Starting $T_J=25^\circ C$

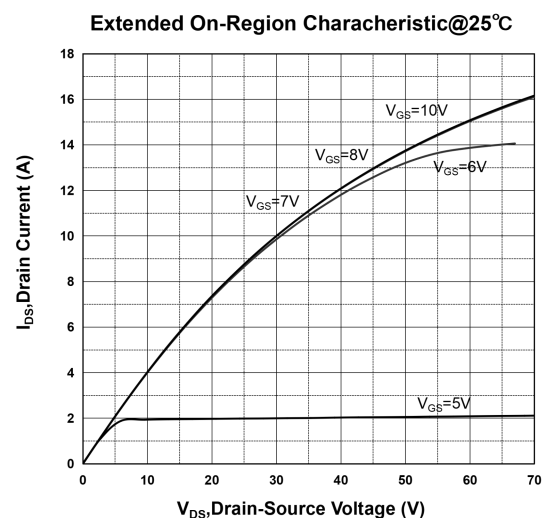
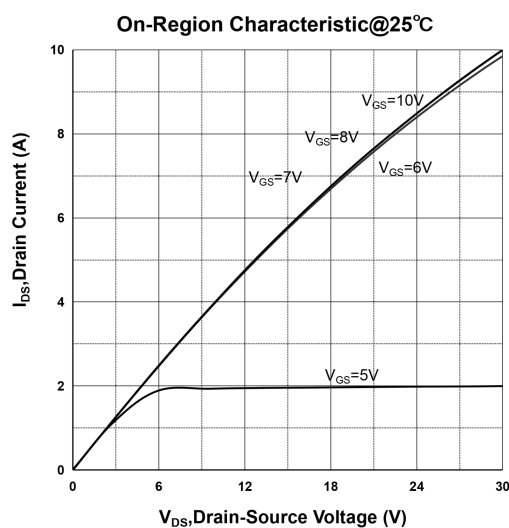
4:Pulse Test:Pulse Width $\leq 200us$,Duty Cycle $\leq 2\%$

5:Essentially independent of operating temperature

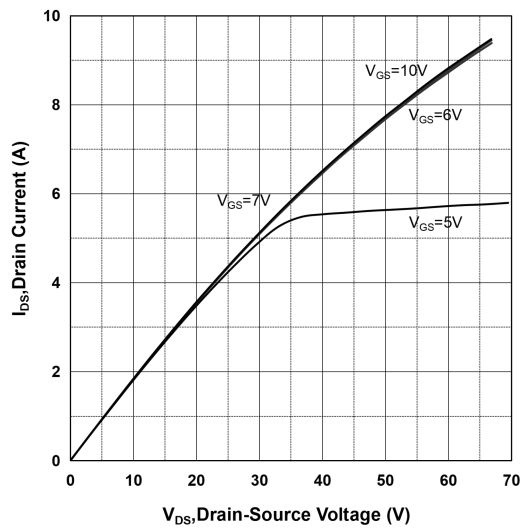
Ordering information

Order codes	Package	Packaging
MS10N150HGT1	TO-220F	Tube

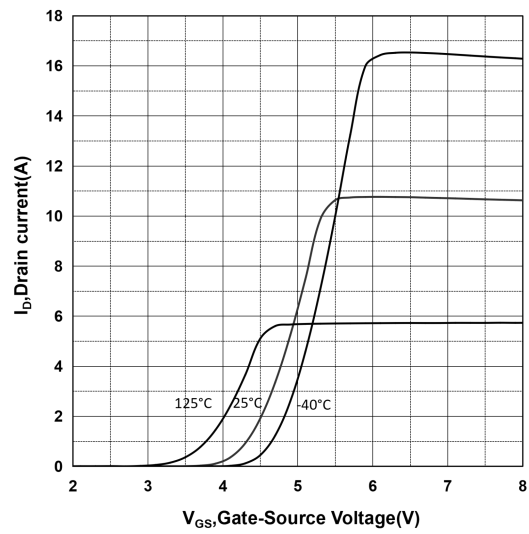
Electrical Characteristics



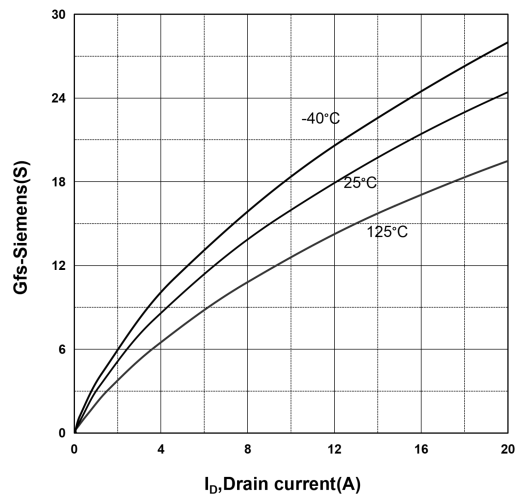
On-Region Characteristic@125°C



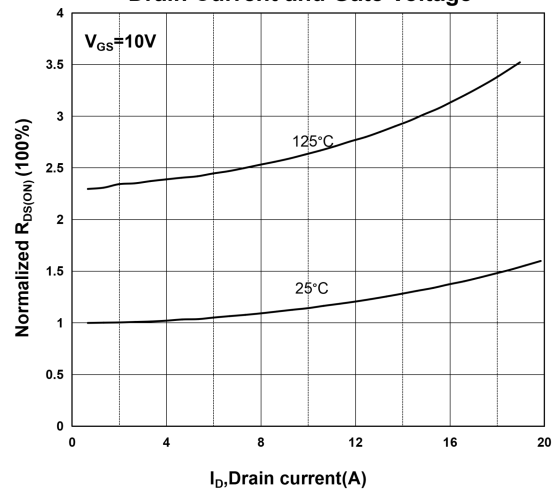
Transfer Characteristics



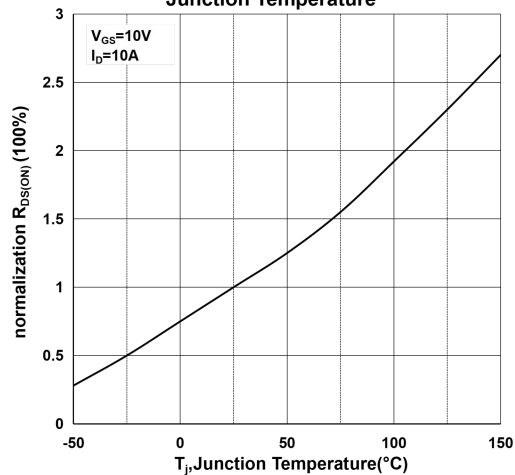
Transconductance



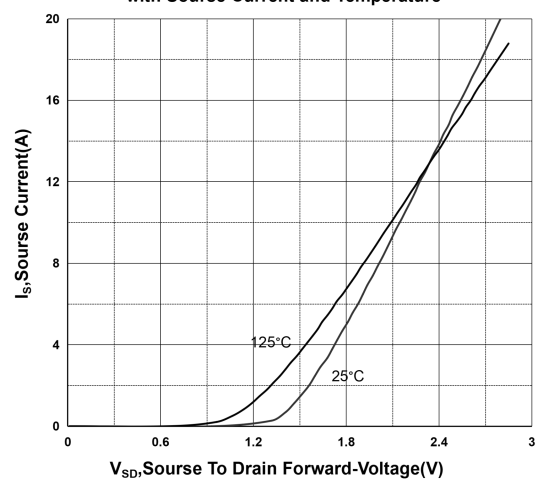
Normalized On-Resistance Variation vs Drain Current and Gate Voltage

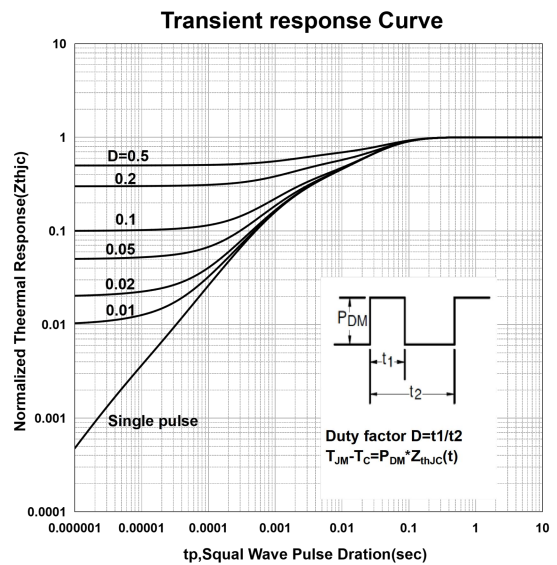
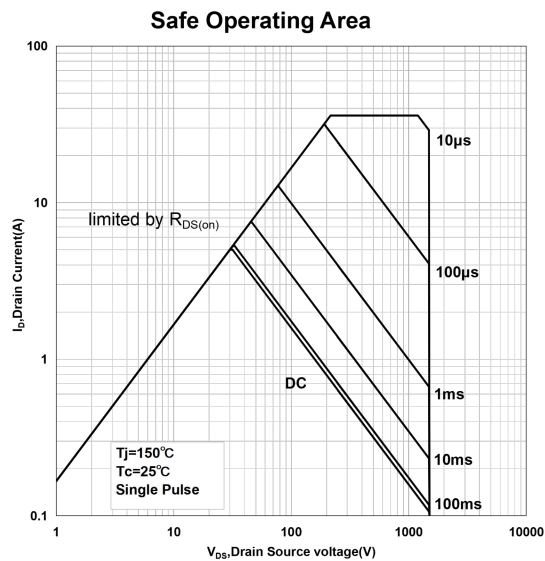
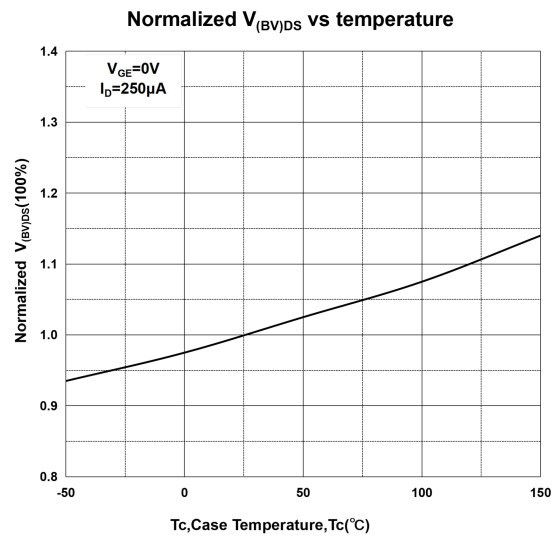
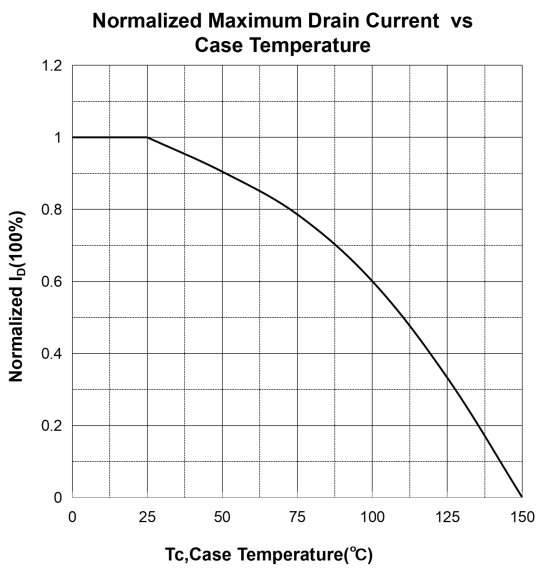
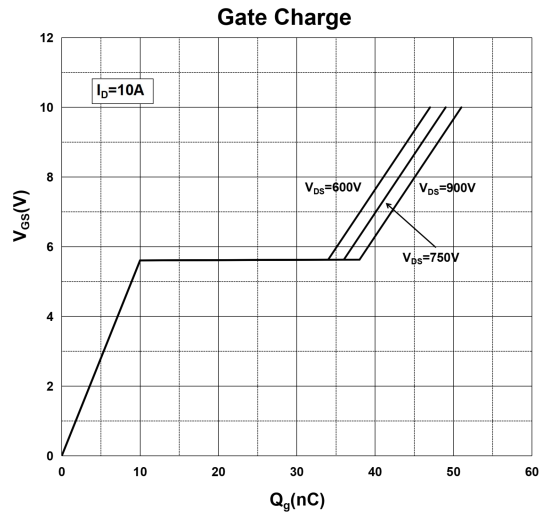
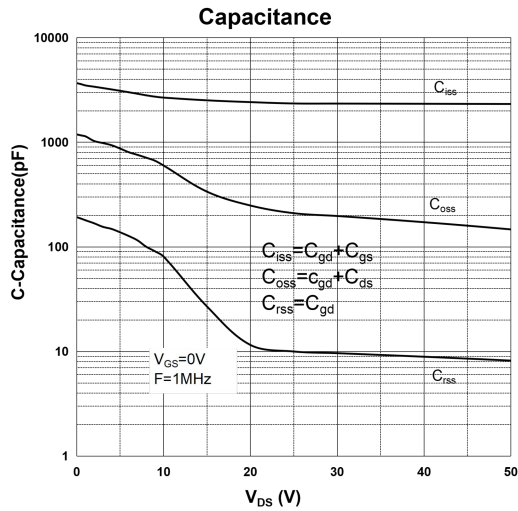


Normalization On-Resistance Variation vs Junction Temperature

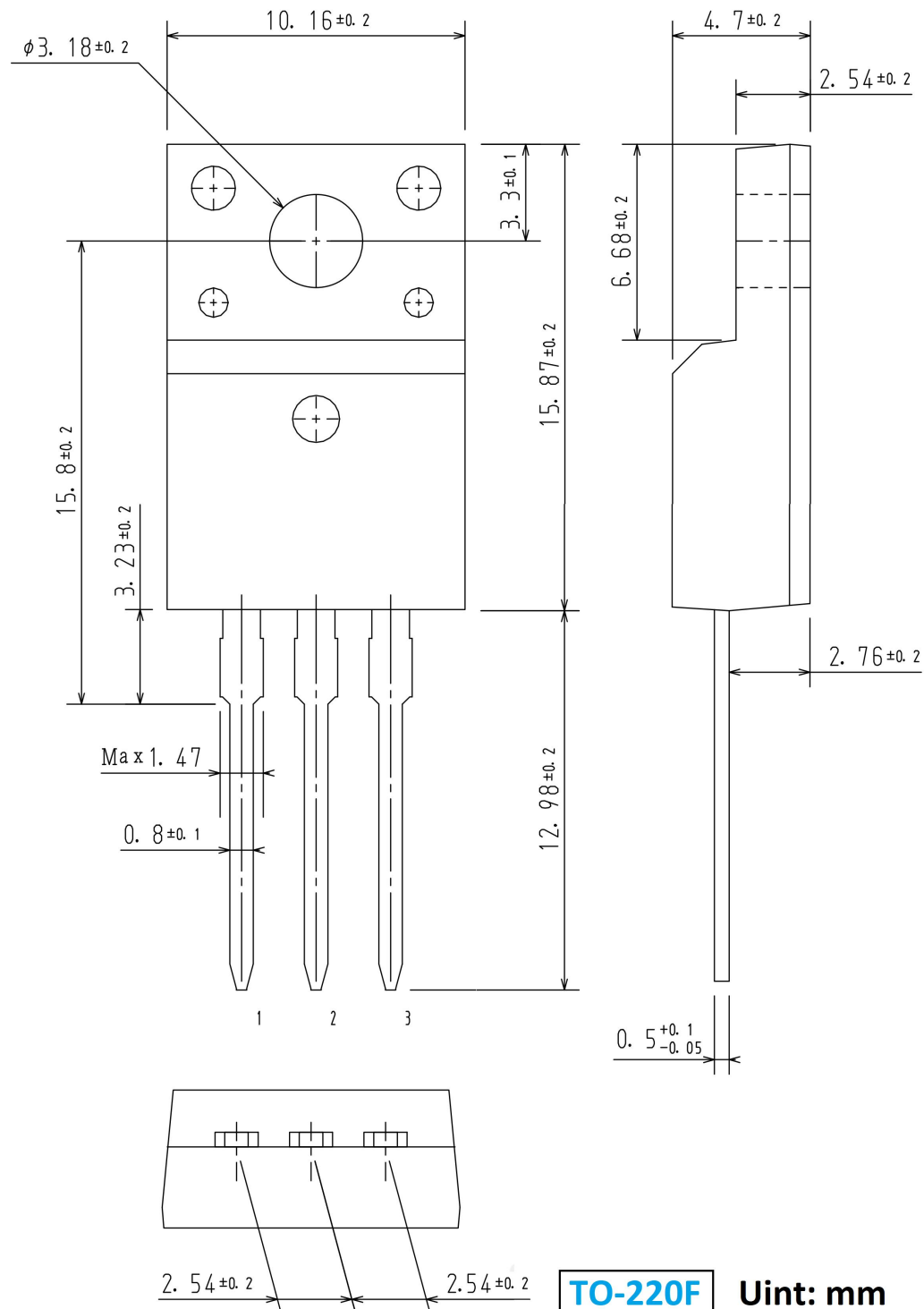


Body Diode Forward Voltage Variation with Source Current and Temperature





Package Mechanical DATA



TO-220F

Unit: mm