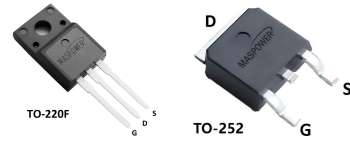


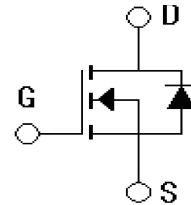
Features

- Low gate charge(typ. $Q_g=21.4nC$)
- Ultra fast switching
- 100% avalanche tested
- RoHS Compliant



Applications

- Power faction correction(PFC).
- Switched mode power supplies(SMPS).
- Uninterrupted Power Supply(UPS).
- Low Power chargers and Adapters.



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

Parameter	Symbol		Value	Unit
Drain-Source Voltage	V _{DSS}		800	V
Transient Gate-Source Voltage	V _{GSM}		±30	V
Continuous Gate-Source Voltage	V _{GSS}		±20	V
Drain Current -continuous	I _D	T _C =25℃	11	A
		T _C =100℃	7	
Drain Current - pulse （note 1）	I _{DM}		33*	A
Single Pulsed Avalanche Energy （note 2）	E _{AS}		252.2	mJ
Power Dissipation(TO-220F)	P _D	TC=25℃	31	W
		T _C =100℃	12.5	W
Power Dissipation(TO-252)	P _D	TC=25℃	52	W
		T _C =100℃	20.8	W
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃
Continuous diode forward current	I _S		11	A
Diode pulse current	I _S Pulse		33	A
Maximum lead temperature for soldering purposes	T _L		260	℃

*Drain current limited by maximum junction temperature

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

Parameter	Symbol	Tests conditions	Min	Type	Max	Units
Off-Characteristics						
Drain-Source Voltage	BV _{DSS}	I _D =250uA, V _{GS} =0V	800	-	-	V
Drain cut-off current	I _{DSS}	V _{DS} =800V, V _{GS} =0V T _j =25℃	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±100	nA
On-Characteristics						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	2.5	3.5	4.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5.5A T _j =25℃	-	0.58	0.68	Ω
		V _{GS} =10V, I _D =5.5A T _j =150℃	-	1.66	-	Ω
Gate Resistance	R _G	f=1MHz, open drain	-	5.96	-	Ω
Forward transconductance	g _{fs}	V _{DS} =30V, I _D =5.5A	-	11	-	S
Dynamic Characteristics						
Input capacitance	C _{iss}	V _{DS} =100V, V _{GS} =0V, f=250kHz	-	870	-	pF
Output capacitance	C _{oss}		-	28	-	pF
Reverse transfer capacitance	C _{rss}		-	0.8	-	pF
Switching Characteristics						
Turn-On delay time	t _{d(on)}	V _{DD} =400V, I _D =5A, R _G =10Ω	-	43	-	ns
Turn-On rise time	t _r		-	11	-	ns
Turn-Off delay time	T _{d(off)}		-	42	-	ns
Turn-Off Fall time	t _f		-	13	-	ns
Total Gate Charge	Q _g	V _{DD} =400V, I _D =11A, V _{GS} =10V	-	21.4	-	nC
Gate-Source charge	Q _{gs}		-	4.4	-	nC
Gate-Drain charge	Q _{gd}		-	9.5	-	nC
Gate plateau voltage	V _{plateau}		-	5.2	-	V
Drain-Source Diode Characteristics						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _F =5.5A (note 3)	-	-	1.2	V
Reverse recovery time	trr	V _R =400V, I _F =5.5A dI _F /dt=100A/us	-	229.7	-	ns
Reverse recovery charge	Qrr		-	2009	-	nC
Peak reverse recovery current	I _{rrm}		-	16.9	-	A

Thermal Characteristics

Parameter	Symbol	Value		Unit
		TO-220C	TO-252	
Thermal Resistance, Junction-to-Case,Max	$R_{\theta JC}$	4.0	2.4	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient,Max	$R_{\theta JA}$	62.5	50	$^{\circ}\text{C}/\text{W}$

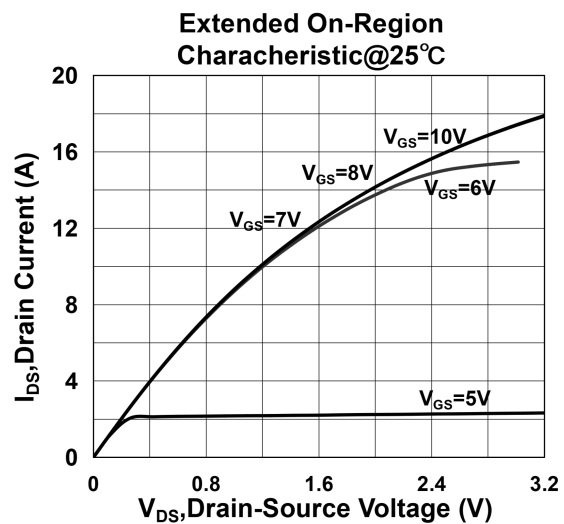
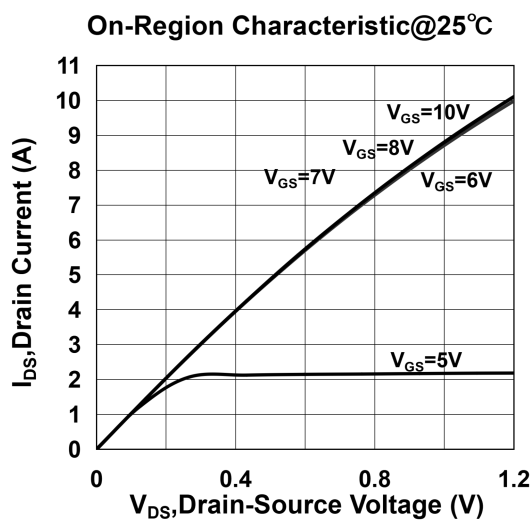
Notes:

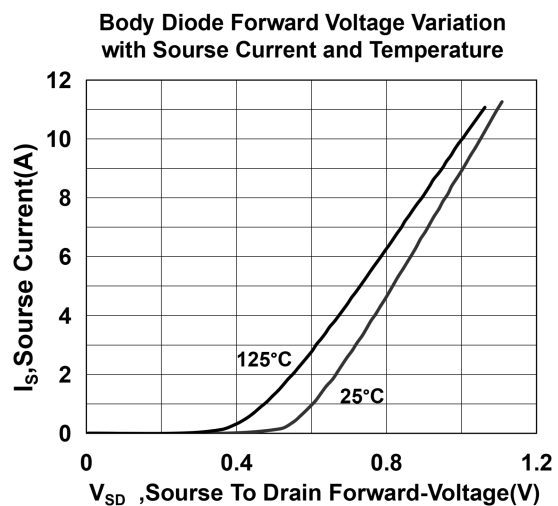
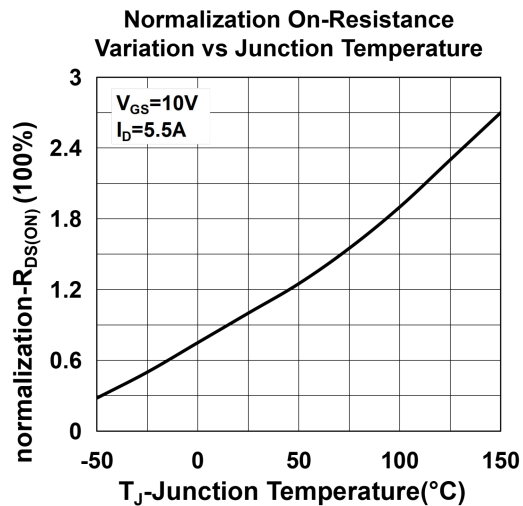
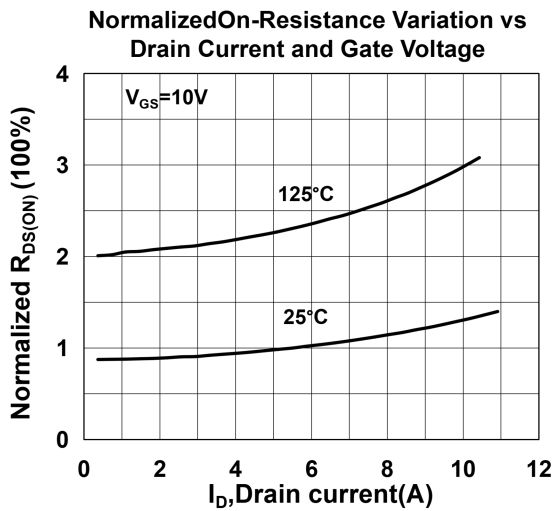
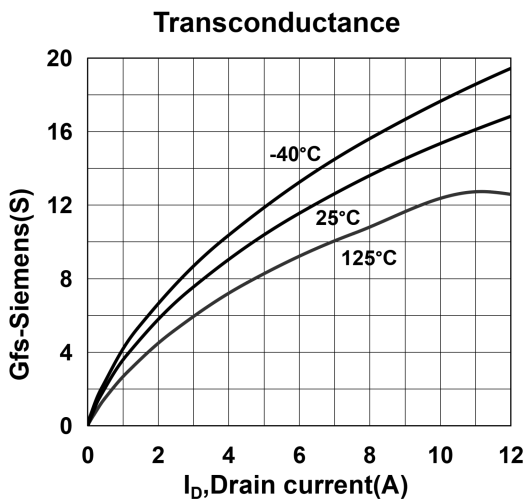
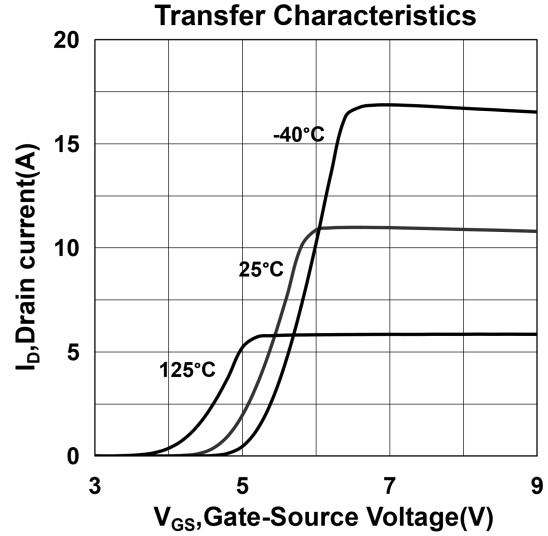
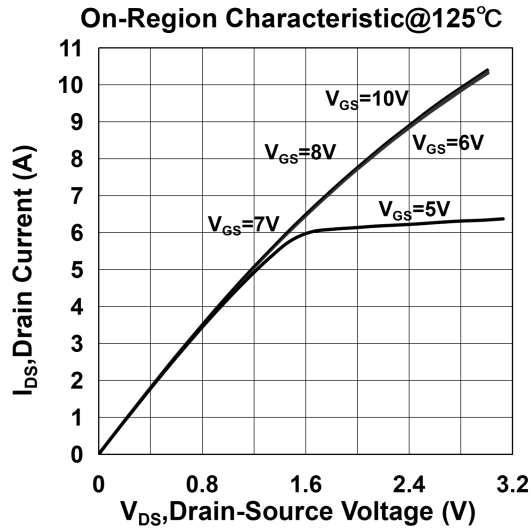
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $L=60\text{mH}$, $I_D = 2.8\text{A}$, $V_{DD} = 50\text{V}$, $R_G = 25\Omega$, Starting $T_J = 25^{\circ}\text{C}$
3. Identical low side and high side switch with identical R_G

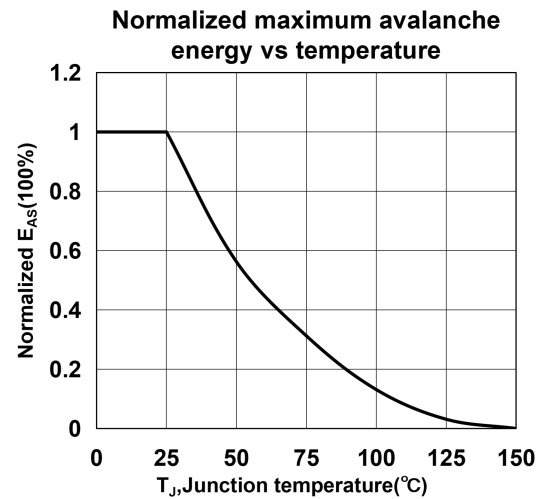
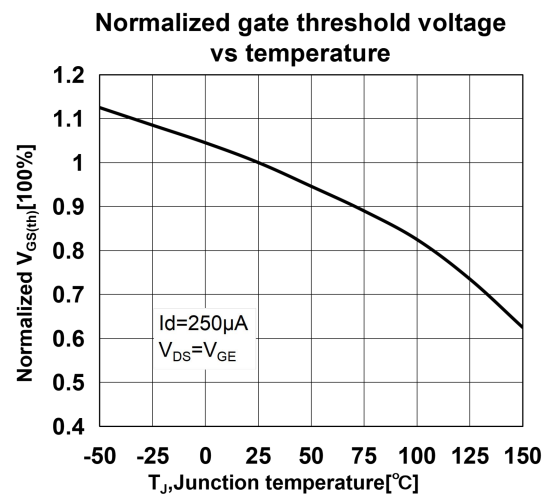
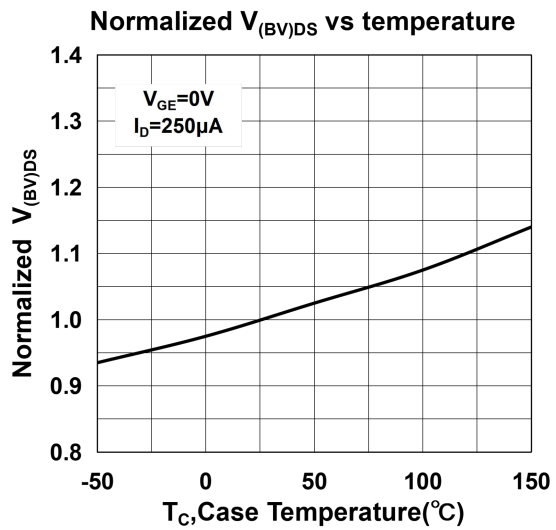
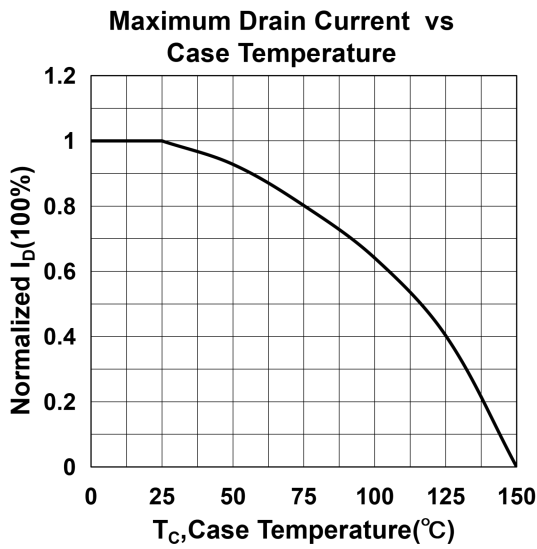
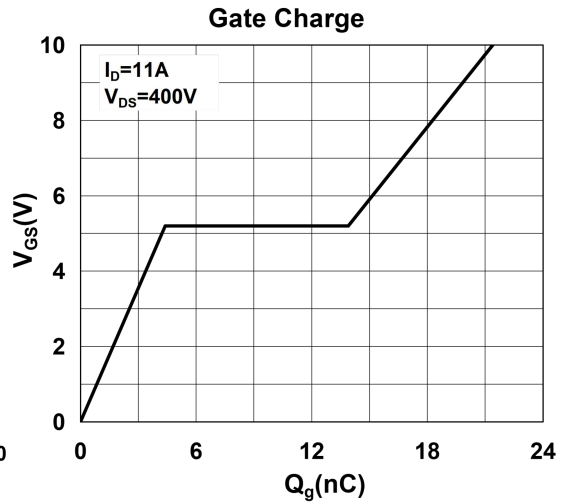
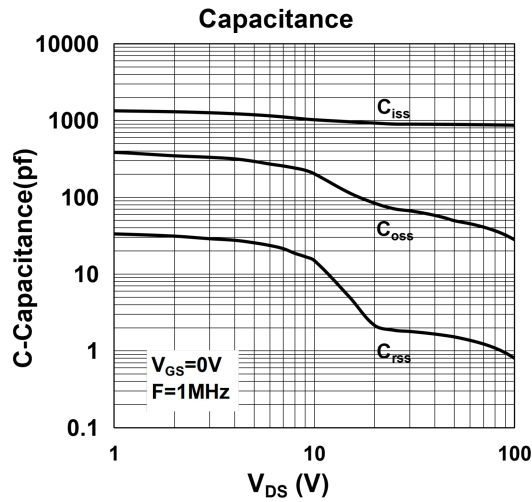
Order Information

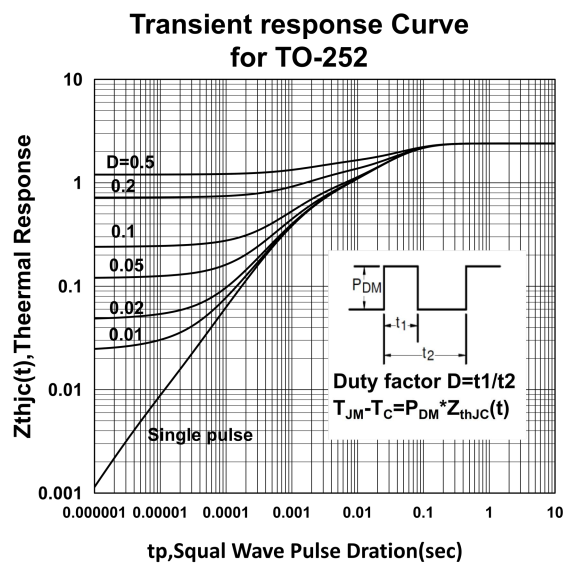
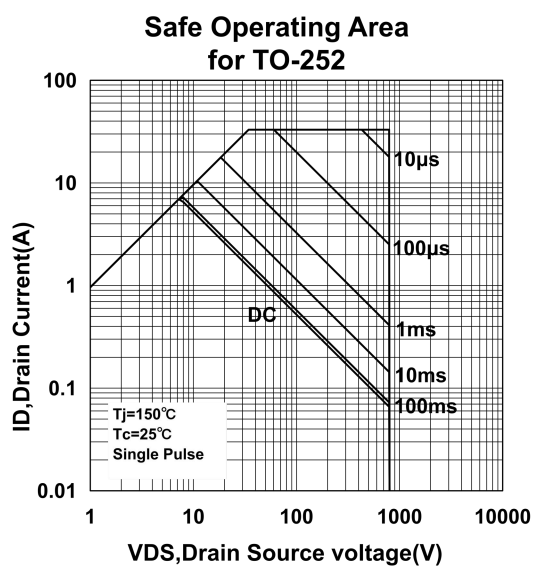
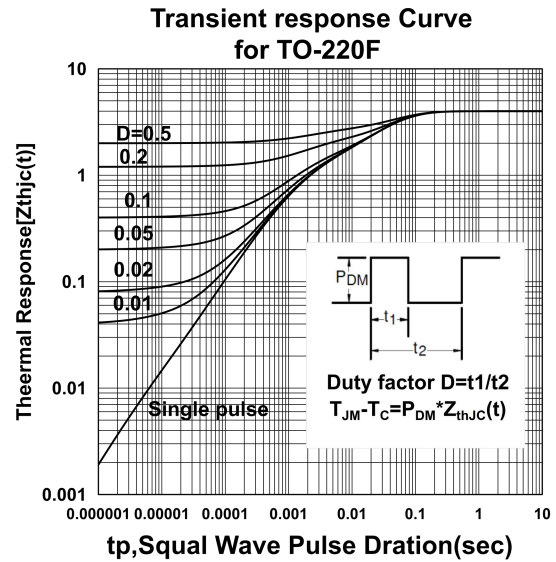
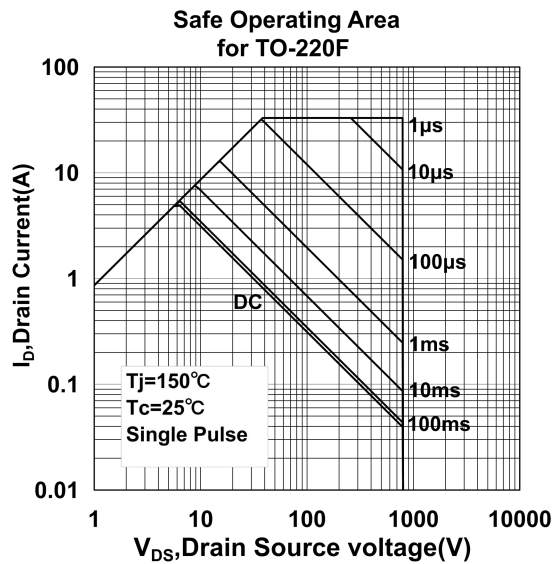
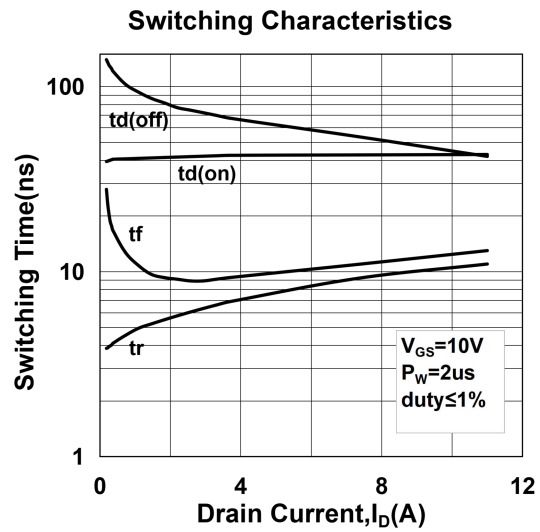
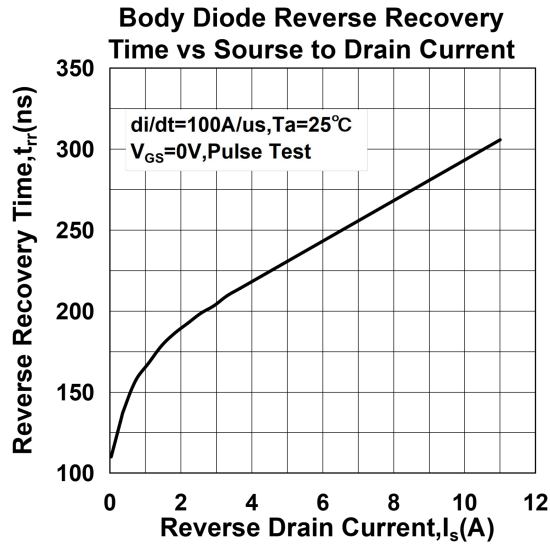
Marking	Package
MS11N80HCT1	TO-220F
MS11N80HCD0	TO-252

Electrical Characteristics









Package Mechanical DATA

