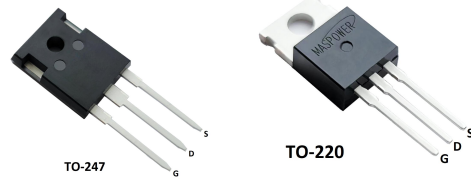


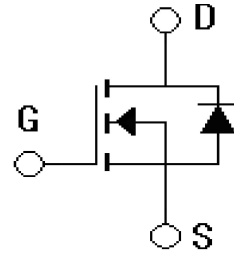
Features

- Low gate charge
- Low Crss
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability
- RoHS Compliant



Applications

- High efficiency switch mode Power supplies
- Electronic lamp ballasts based on half bridge
- UPS



Absolute Ratings (Tc=25°C)

Parameter	Symbol		Value	Unit
Drain-Source Voltage	V _{DSS}		200	V
Drain Current -continuous	I _D	T=25℃	130	A
		T=100℃	65	A
Drain Current - pulse （note 1）	I _{DM}		260	A
Gate-Source Voltage	V _{GSS}		±30	V
Single Pulsed Avalanche Energy （note 2）	E _{AS}		720	mJ
Avalanche Current （note 1）	I _{AR}		100	A
Repetitive Avalanche Current （note 1）	E _{AR}		35.7	mJ
Peak Diode Recovery dv/dt （note 3）	dv/dt		5.4	V/ns
Power Dissipation	PD TC=25℃		357	W
	-Derate above 25℃		2.86	W/℃
Operating and Storage Temperature Range	T _J ,T _{STG}		-55~+150	℃
Maximum Lead Temperature for Soldering Purposes	T _L		300	℃

*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}	$I_D=250\mu A, V_{GS}=0V$	200	-	-	V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_J$	$I_D=250\mu A$, referenced to $25^{\circ}C$	-	0.16	-	$V/^{\circ}C$
Drain cut-off current	I_{DSS}	$V_{DS}=200V, V_{GS}=0V$ $T_J=25^{\circ}C$	-	-	1	μA
		$V_{DS}=200V, T_J=125^{\circ}C$	-	-	10	
Gate-body leakage current, forward	I_{GSSF}	$V_{DS}=0V, V_{GS}=30V$	-	-	100	nA
Gate-body leakage current, reverse	I_{GSSR}	$V_{DS}=0V, V_{GS}=-30V$	-	-	-100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=50A$ (note 3)	-	8.3	12	m Ω
Forward Transconductance	g_{fs}	$V_{DS}=40V, I_D=130A$ (note 3)	-	66	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=100V,$ $V_{GS}=0V,$ $f=1.0MHz$	-	4100	-	pF
Output capacitance	C_{oss}		-	420	-	pF
Reverse transfer capacitance	C_{rss}		-	10	-	pF

Switching Characteristics						
Turn-On delay time	t _{d(on)}	V _{DD} =160V, I _D =130A, R _G =25Ω, V _{GS} =10V(note 4,5)	-	56	112	ns
Turn-On rise time	t _r		-	408	500	ns
Turn-Off delay time	T _{d(off)}		-	270	550	ns
Turn-Off Fall time	t _f		-	240	490	ns
Total Gate Charge	Q _g	V _{DS} =160V, I _D =130A, V _{GS} =10V(note4,5)	-	60		nC
Gate-Source charge	Q _{gs}		-	16	-	nC
Gate-Drain charge	Q _{gd}		-	20	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						

Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=10A$ (note 3)	-	0.73	1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I_S		-	-	130	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}		-	-	260	A
Reverse recovery time	t_{rr}	$V_{GS}=0V, I_F=130A$ $di_F/dt=100A/\mu s$ (note 3)	-	175	-	ns
Reverse recovery charge	Q_{rr}		-	1.23	-	μC

Thermal Characteristic

Parameter	Symbol	Value		Unit
		TO-247	TO-220	
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.35		$^{\circ}C/W$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	60		$^{\circ}C/W$

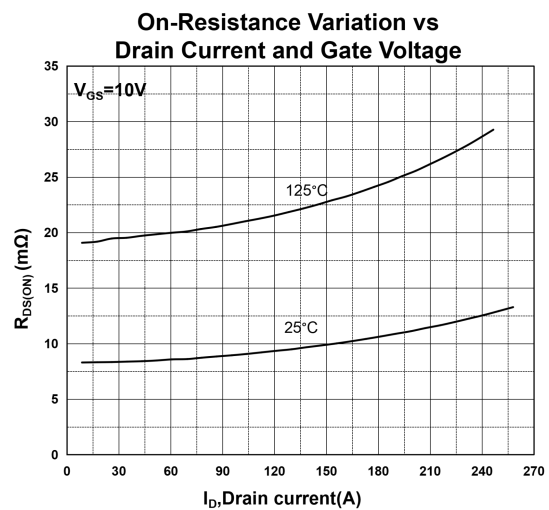
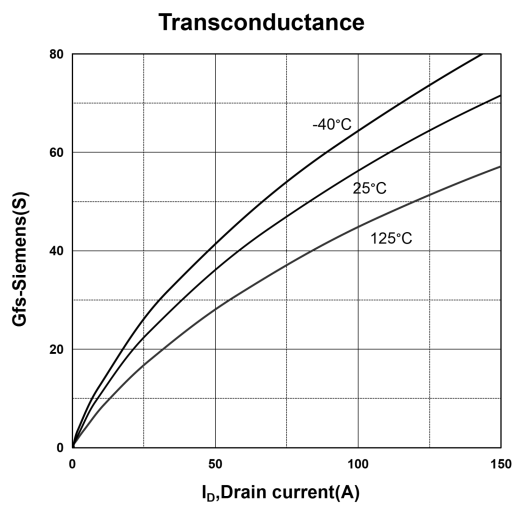
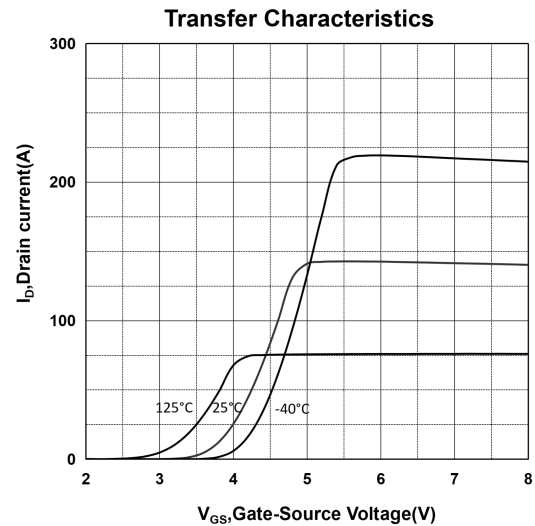
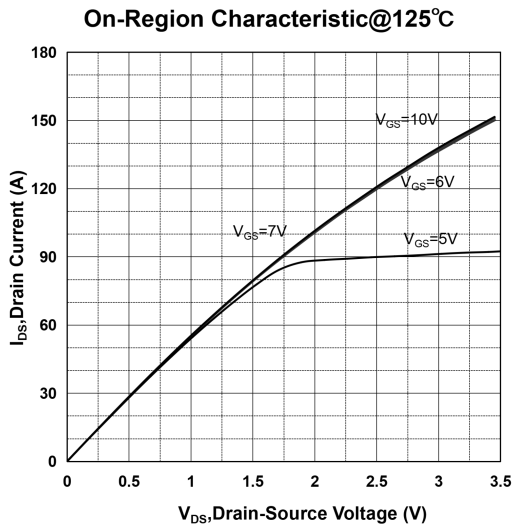
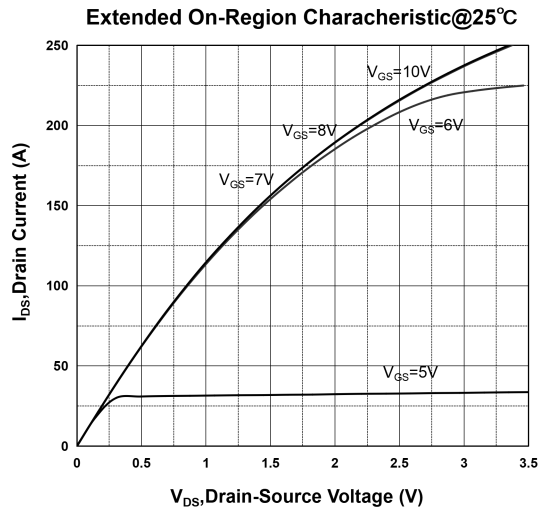
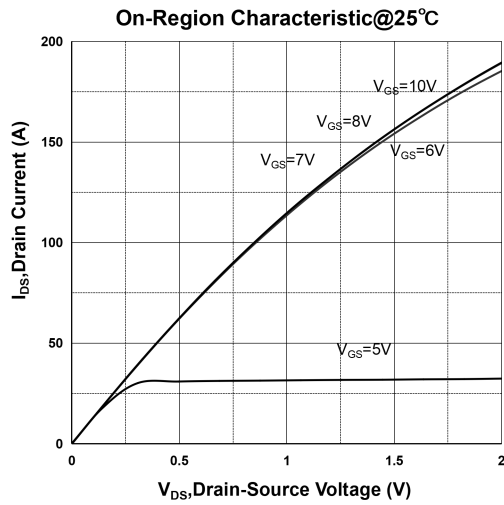
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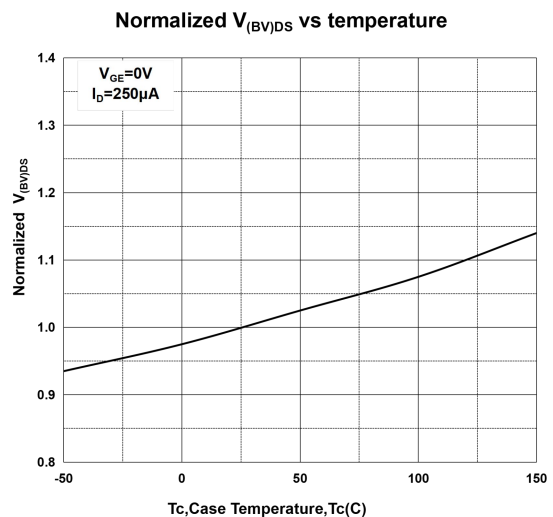
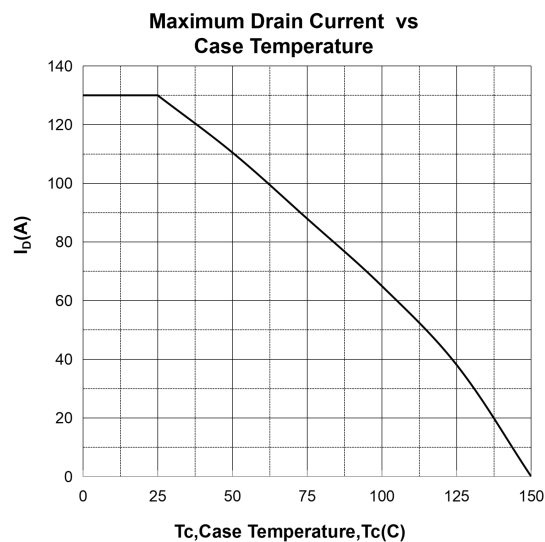
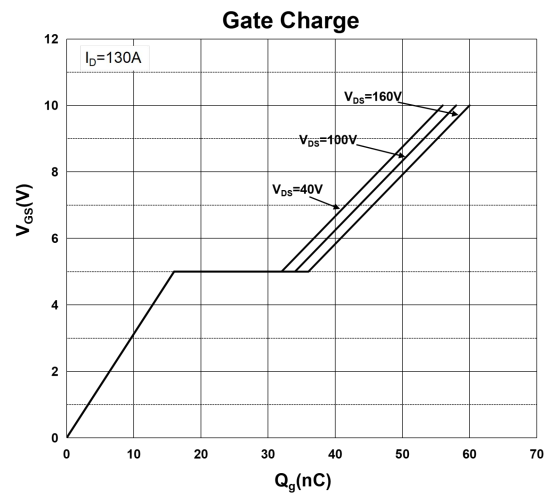
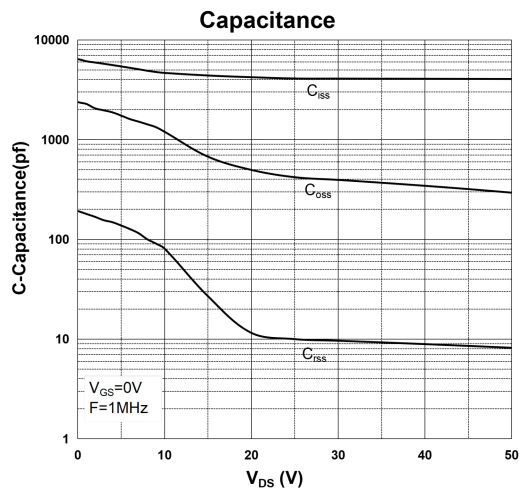
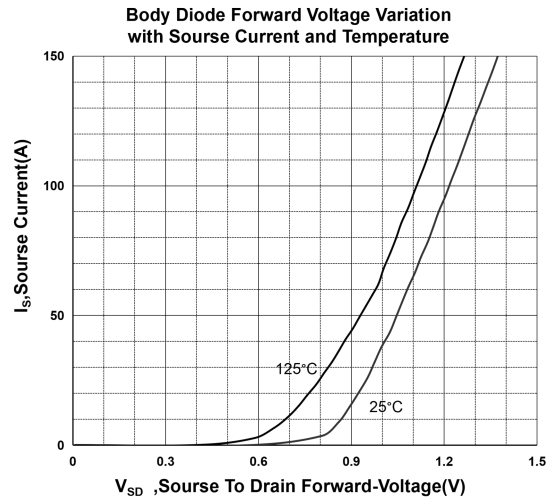
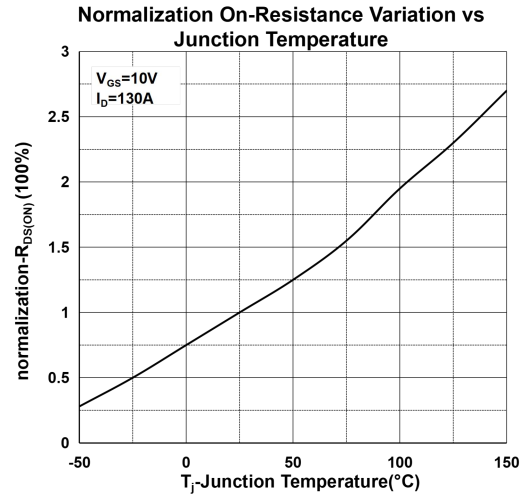
- 1: Pulse width limited by maximum junction temperature
- 2: $L=0.5mH$, $I_{AS}=100A$, $V_{DD}=50V$, $R_G=25\ \Omega$, Starting $T_J=25^{\circ}C$
- 3: $I_{SD} \leq 100A$, $di/dt \leq 300A/\mu s$, $V_{DD} \leq BV_{DSS}$, Starting $T_J=25^{\circ}C$
- 4: Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$
- 5: Essentially independent of operating temperature

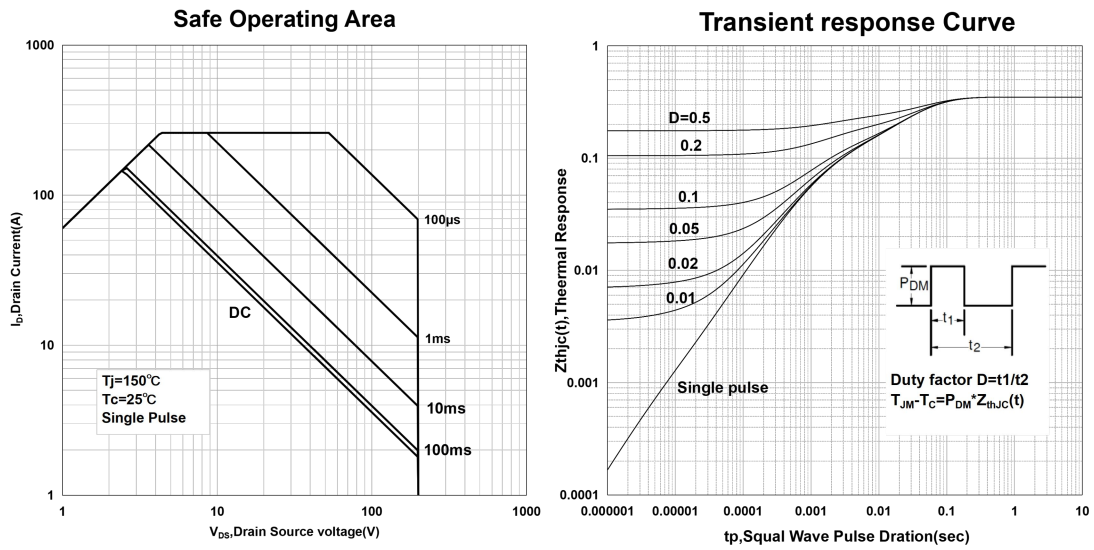
Ordering message

Marking	Package
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MS130N20JDT0	TO-220

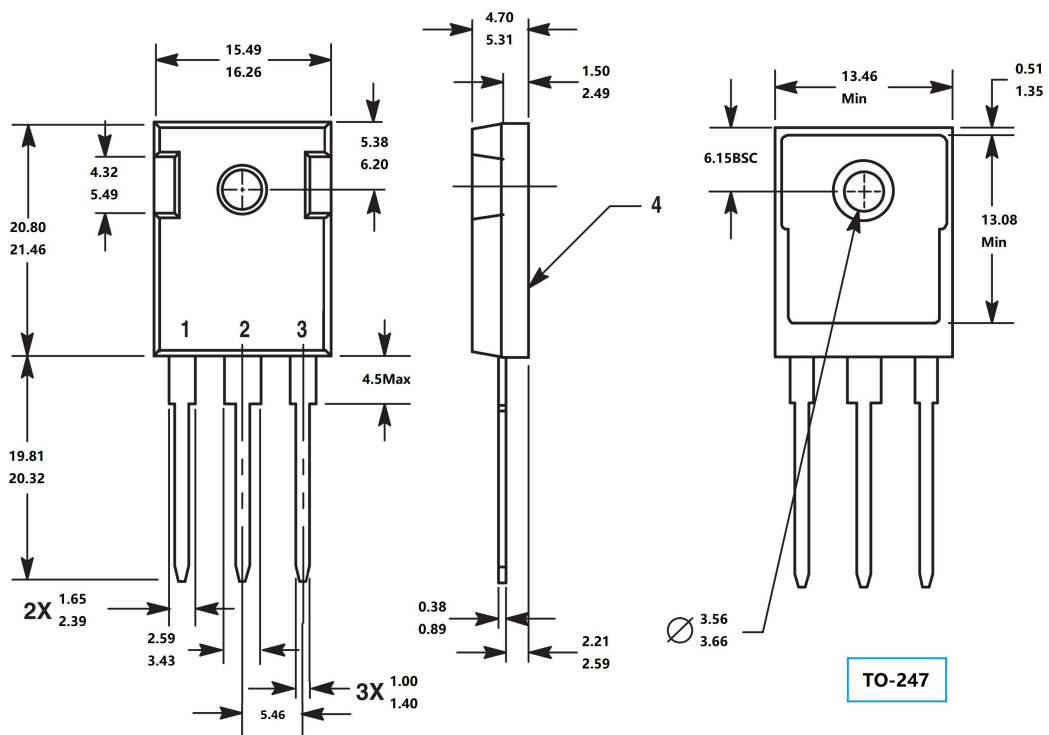
Electrical Characteristics

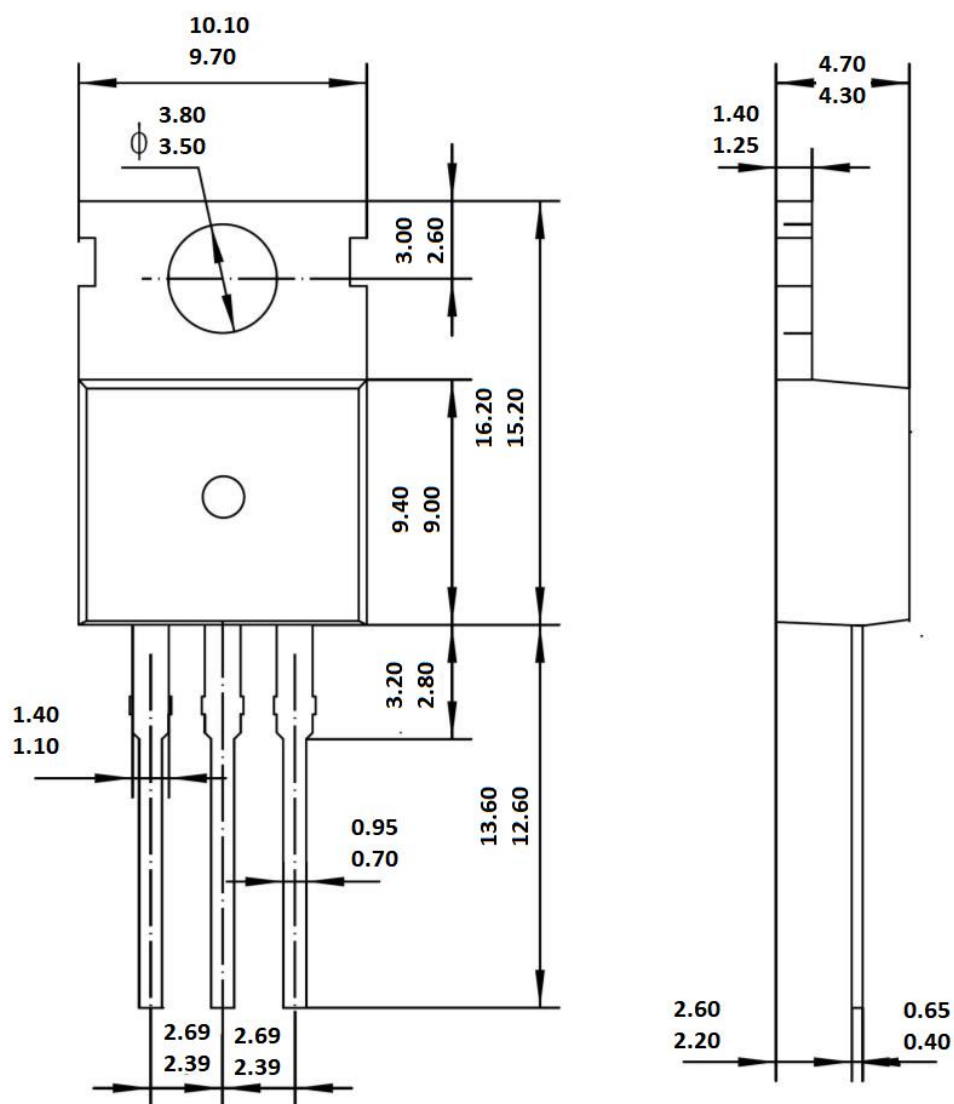






Package Mechanical DATA





TO-220

Unit: mm