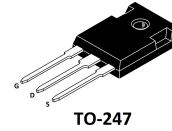
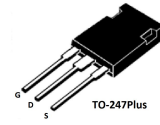


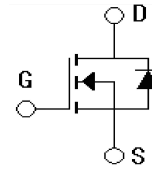
Features

- $V_{DS}=1000V, I_D=30A$
 $R_{DS(on)} < 0.38\Omega$
- avalanche tested and current rated
- Fast intrinsic Rectifier



Applications

- High power density
- Easy to mount
- Space savings



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	1000	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current-continuous	I_D	30	A
Drain Current-pulse (1)	I_{DM}	120	A
Single Pulsed Avalanche Energy (2)	E_{AS}	3500	mJ
Avalanche Current, Repetitive or Non-Repetitive	I_{AR}	30	A
Maximum Power Dissipation (TO-247plus)	PD	735	W
Maximum Power Dissipation (TO-247)	PD	290	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ C$

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

Parameter	Symbol	Tests conditions	Min	Typ	Max	Units
Drain-Source Voltage	BV_{DSS}	$I_D=3mA, V_{GS}=0V$	1000	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=V_{DSS}, V_{GS}=0V$	-	-	50	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	-	-	± 200	nA

On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=2.5mA$	3.0	-	5.5	V
Static Drain-Source On-Resistance (3)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=15A$	-	0.28	0.38	Ω
Forward Transconductance	g_{fs}	$V_{DS}=10V, I_D=15A$	20	30	-	S
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	-	1900	-	pF
Output capacitance	C_{oss}		-	250	-	pF
Reverse transfer capacitance	C_{rss}		-	35	-	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	$t_{d(on)}$	$V_{DS}=500V, I_D=15A, R_g=1\Omega, V_{GS}=10V$	-	22	-	ns
Turn-On rise time	t_r		-	13	-	ns
Turn-Off delay time	$t_{d(off)}$		-	61	-	ns
Turn-Off rise time	t_f		-	14	-	ns
Total Gate Charge	Q_g	$V_{DS}=500V, I_D=15A, V_{GS}=10V$	-	185	-	nC
Gate-Source charge	Q_{gs}		-	47	-	nC
Gate-Drain charge	Q_{gd}		-	79	-	nC
Drain-Source Diode Characteristics and Maximum Ratings						
Maximum Continuous Drain-Source Diode Forward Current	I_{SD}	$V_{GS}=0V, I_S=15A$	-	-	1.5	V
Diode Forward Current	I_S	$TC=25^{\circ}C$	-	-	30	A
Reverse recovery time	T_{rr}	$I_S=25A, dI/dT=100A/\mu S, V_R=1000V, V_{GS}=0V$	-	-	300	nS

Thermal Characteristic(TO-247plus)

Parameter	Symbol	Unit	
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.15	°C/W
Case to Sink Thermal Resistance, Flat, Greased Surface	$R_{th(C-S)}$	0.11	

Thermal Characteristic(TO-247)

Parameter	Symbol	Unit	
Thermal Resistance, junction to Case	$R_{th(j-C)}$	0.43	°C/W
Case to Sink Thermal Resistance, junction-Ambient	$R_{th(C-A)}$	40	

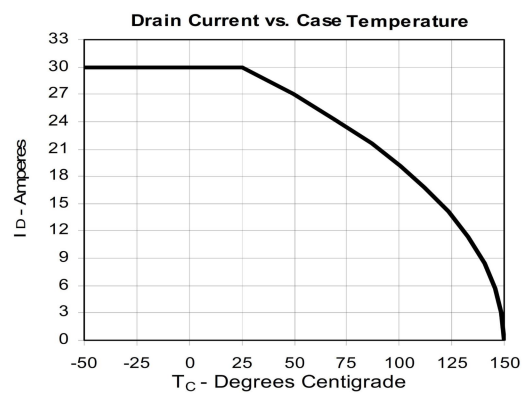
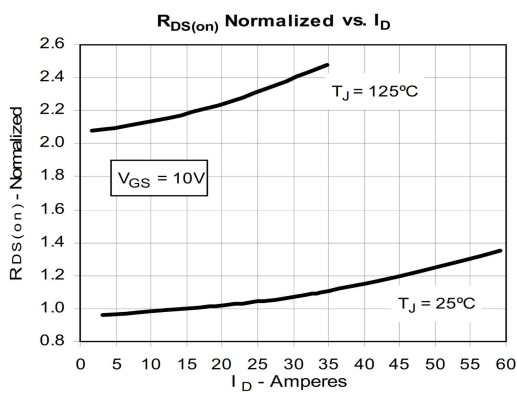
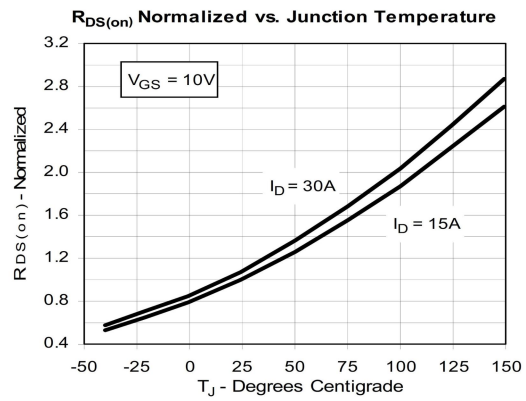
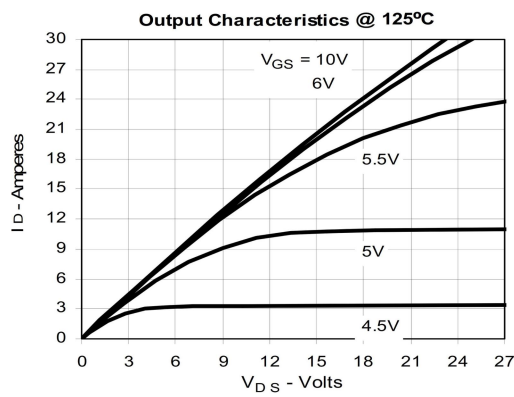
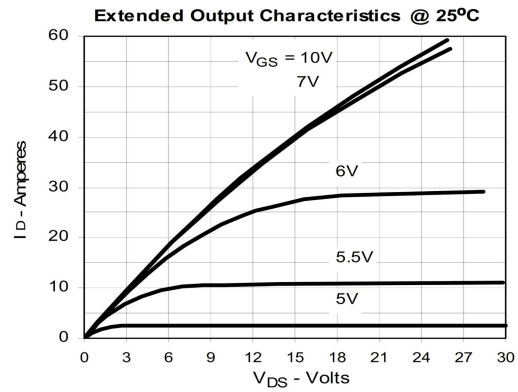
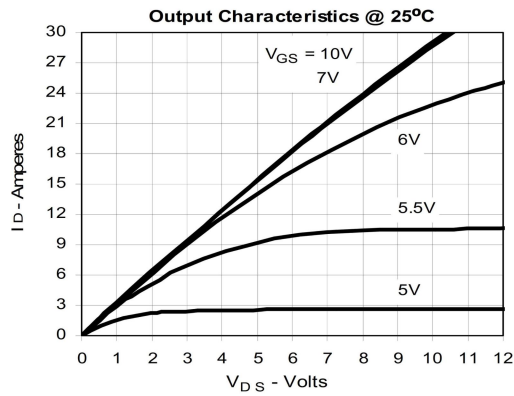
Order Message

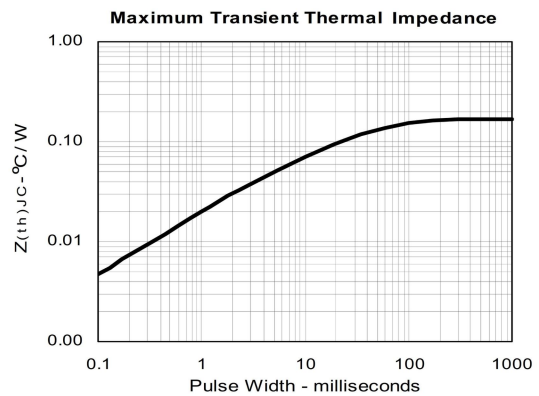
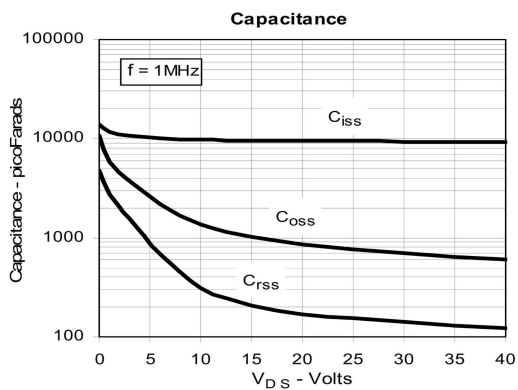
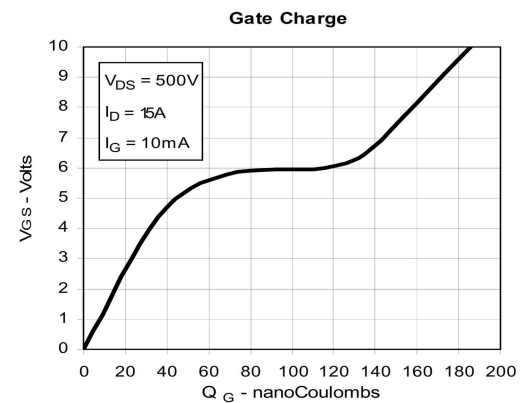
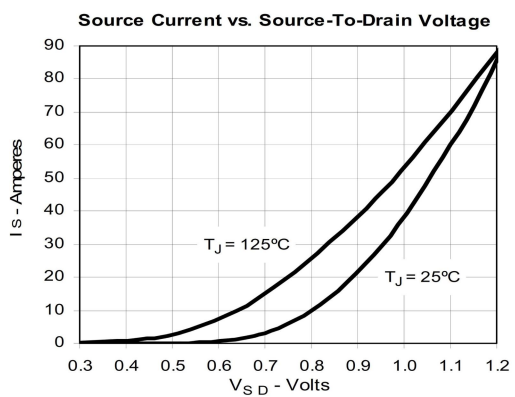
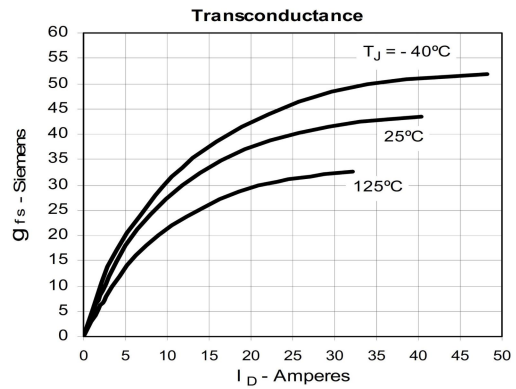
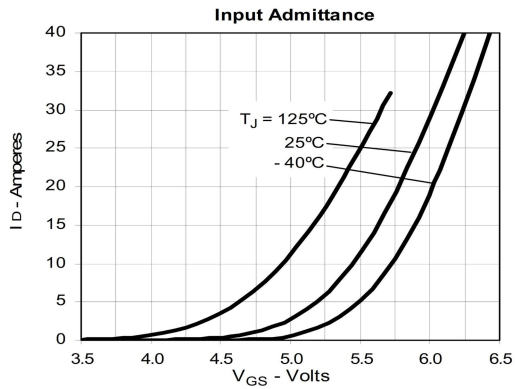
Marking	Package
MS30N100HGC1	TO-247plus
MS30N100HGC0	TO-247

Notes:

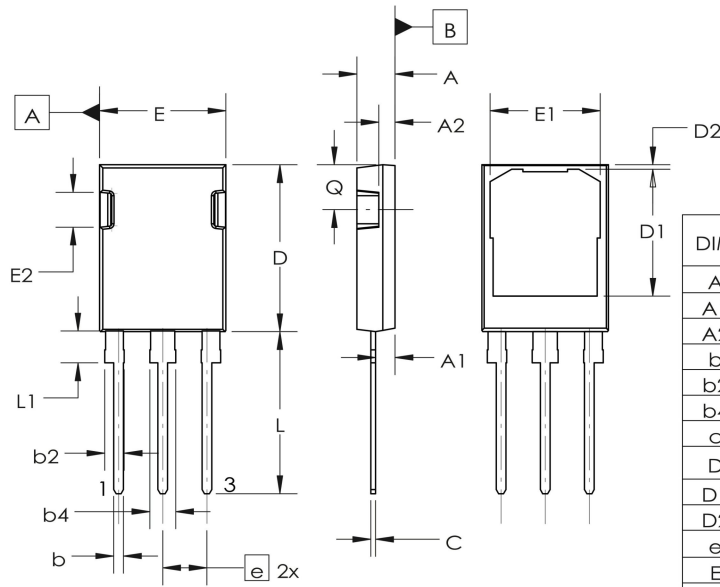
1. Repetitive Rating: Pulse width and case temperature limited by maximum junction temperature.
2. Pulse test: Pulse Width < 300µs, duty cycle < 2%

Electrical Characteristics





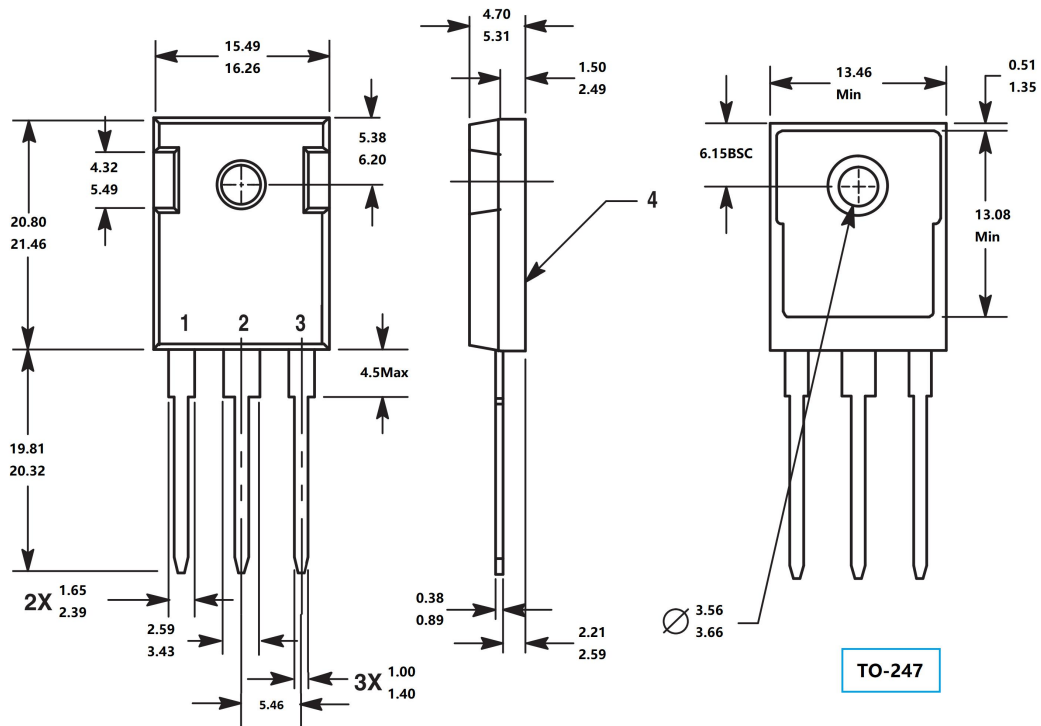
Package Mechanical DATA



DIM	MILLIMETERS		
	MIN	NOM	MAX
A	4.60	4.70	4.80
A1	2.10	2.40	2.70
A2	1.70	2.00	2.30
b	1.16	1.20	1.26
b2	2.20	2.40	2.60
b4	3.00	3.20	3.40
c	0.59	0.60	0.66
D	20.40	20.60	20.80
D1	15.47	15.67	15.87
D2	0.25	0.55	0.85
e	5.45 BSC		
E	15.40	15.60	15.80
E1	13.40	13.60	13.80
E2	4.12	4.30	4.52
L	19.70	20.00	20.30
L1	3.65	3.85	4.05
Q	5.35	5.55	5.75

TO-247plus

Unit:mm



TO-247